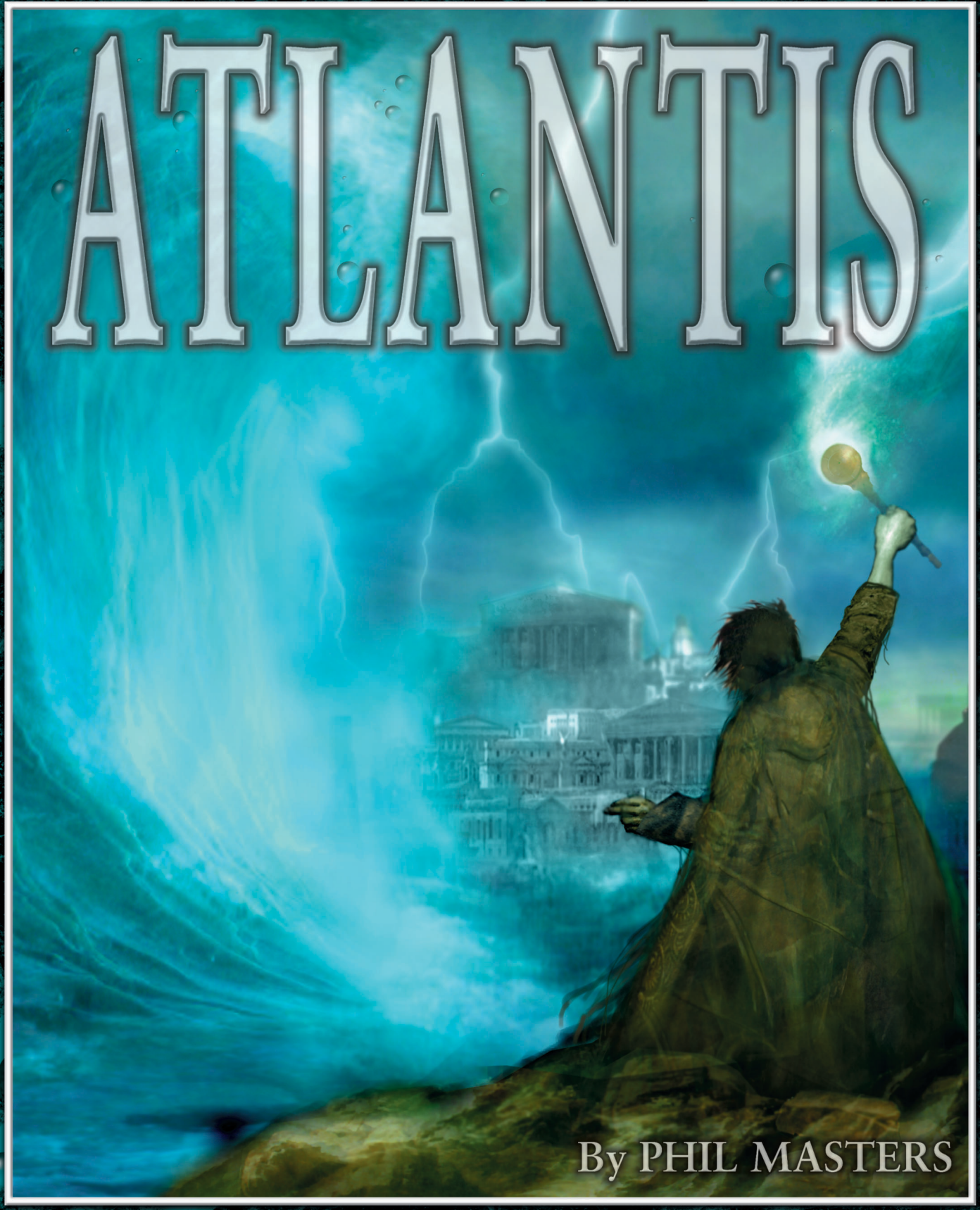
GURPS®

ATLANTIS



By PHIL MASTERS

STEVE JACKSON GAMES

LOST, BUT NOT FORGOTTEN?

Atlantis: one of the great legends. Somewhere, beyond the edge of the world, a great empire grew decadent and fell, sinking forever beneath the waves.

The Lost Land; the Sunken City; the Ancient Birthplace of Secrets. It has haunted our dreams since the days of Ancient Greece. In some of those dreams, the Lost Land is still out there.

GURPS Atlantis is a gamer's guide to the story, the history, and the myth. From Greek philosophy to superhero comics, from fantasies of prehistory to the depths of the sea, it's all here.

This book includes details of legends of other sunken lands, rules for underwater operations, details of a wide range of submarines, and no less than three campaign backgrounds – one high fantasy, one conspiratorial, and one for steampunk or superhero games.

COME TO ATLANTIS!

GURPS Basic Set, *Third Edition, Revised* and ***Compendium I: Character Creation*** are *required* to use this supplement in a ***GURPS*** campaign. ***GURPS Atlantis*** can also be used as a sourcebook for any roleplaying system.

THE SECRET MASTERS:

Written by Phil Masters

Edited by Andrew Hackard

Illustrated by David Day, Zach Howard, and Ramón Pérez

Cover by Christopher Shy

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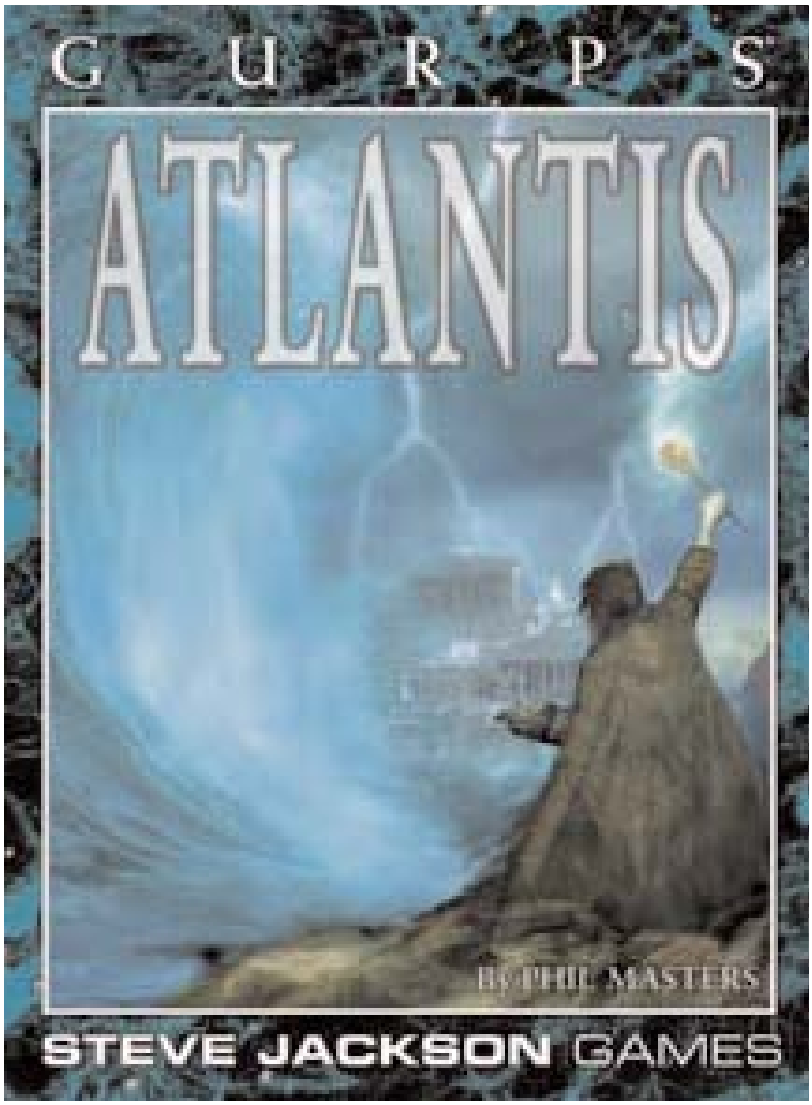

Lost, But Not Forgotten

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Come to Atlantis . . .

This PDF was built from the last printed edition of ***GURPS Atlantis***. All known errata were fixed in this e23 edtion.

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ATLANTIS

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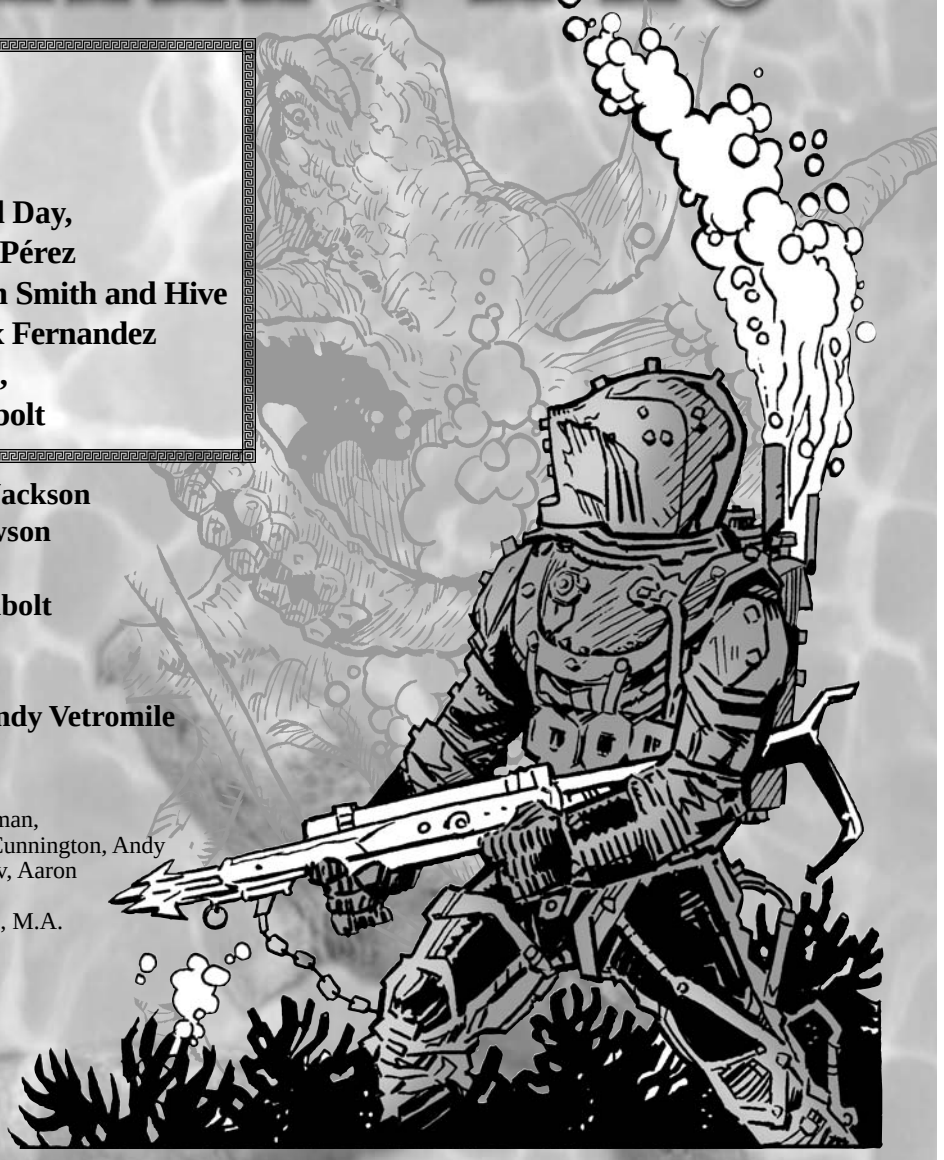

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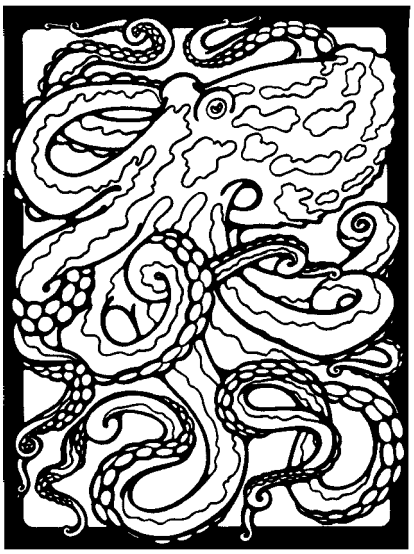
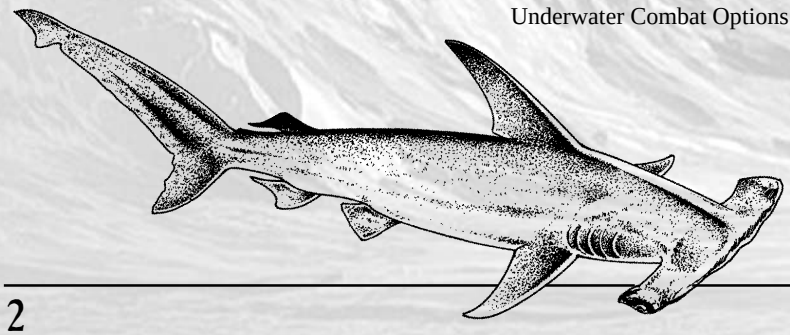
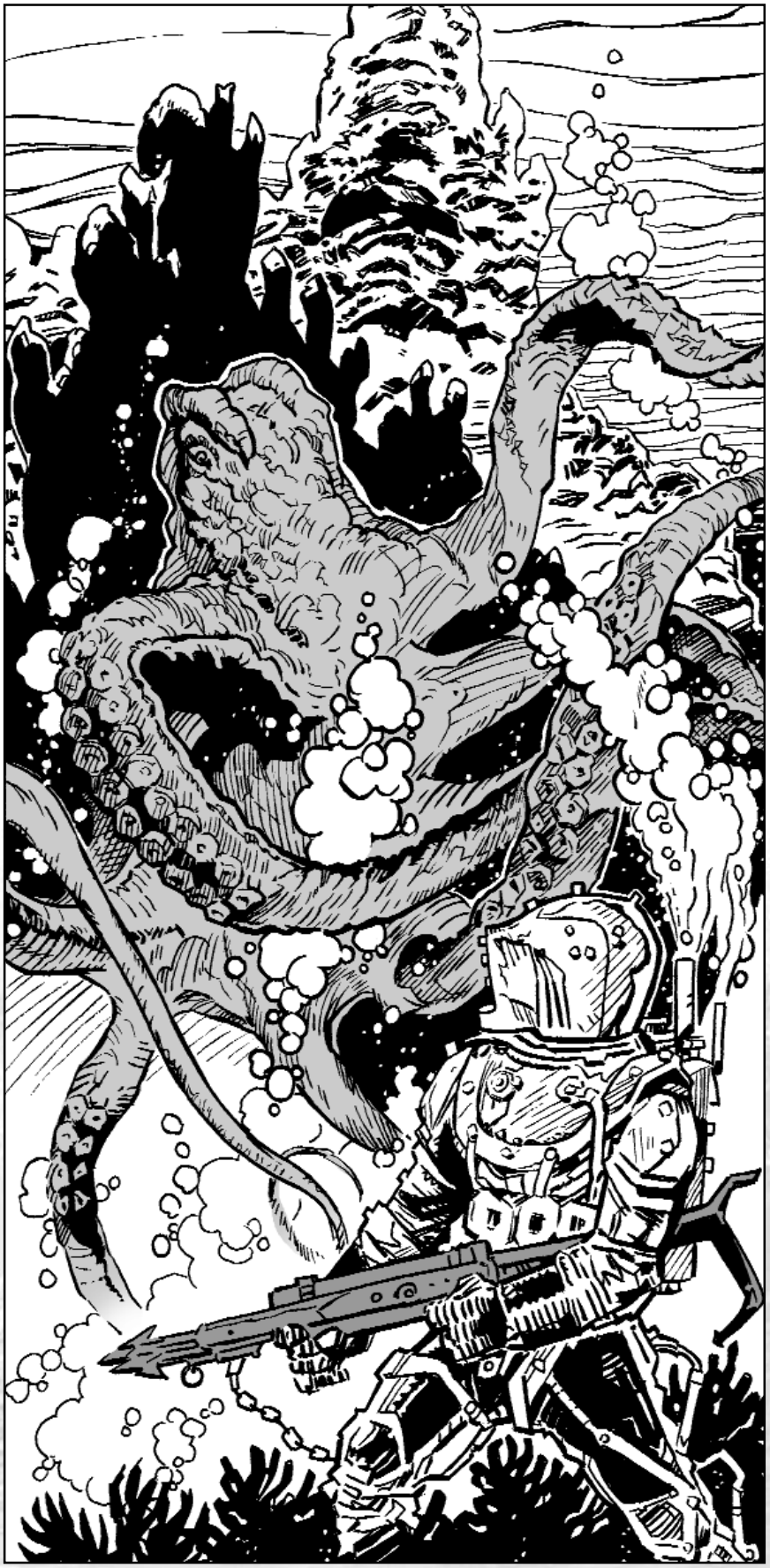






INTRODUCTION

About GURPS

Steve Jackson Games is committed to full support of the ***GURPS*** system. Our address is SJ Games, Box 18957, Austin, TX 78760. Please include a self-addressed, stamped envelope (SASE) any time you write us! Resources include:

Pyramid (**www.sjgames.com/pyramid/**). Our online magazine includes new ***GURPS*** rules and articles. It also covers ***Dungeons and Dragons, Traveller, World of Darkness, Call of Cthulhu***, and many more top games – and other Steve Jackson Games releases like ***In Nomine, INWO, Car Wars, Toon, Ogre Miniatures***, and more. *Pyramid* subscribers also have access to playtest files online!

New supplements and adventures. ***GURPS*** continues to grow, and we'll be happy to let you know what's new. A current catalog is available for an SASE. Or check out our Web site (below).

Errata. Everyone makes mistakes, including us – but we do our best to fix our errors. Up-to-date errata sheets for all ***GURPS*** releases, including this book, are available from SJ Games; be sure to include an SASE. Or download them from the Web – see below.

Gamer input. We value your comments, for new products as well as updated printings of existing titles!

Internet. Visit us on the World Wide Web at **www.sjgames.com** for an online catalog, errata, updates, Q&A, and much more. ***GURPS*** has its own Usenet group, too: rec.games.frp.gurps.

GURPSnet. This e-mail list hosts much of the online discussion of ***GURPS***. To join, e-mail majordomo@io.com with "subscribe GURPSnet-L" in the body, or point your Web browser to **gurpsnet.sjgames.com/**.

The ***GURPS Atlantis*** Web page can be found at **www.sjgames.com/gurps/books/atlantis/**.

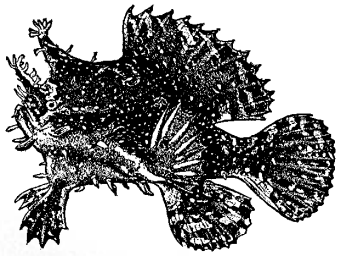
Page References

Rules and statistics in this book are specifically for the ***GURPS Basic Set,*** *Third Edition.* Any page reference that begins with a B refers to the ***GURPS Basic Set*** – e.g., p. B102 means p. 102 of the ***GURPS Basic Set,*** *Third Edition Revised.* Page references that begin with CI indicate ***GURPS Compendium I***. Other references are BE for ***Bestiary,*** CII for ***Compendium II,*** GR for ***Greece,*** HT for ***High-Tech,*** I for ***Illuminati,*** M for ***Magic,*** MA for ***Martial Arts,*** MAO for ***Middle Ages 1,*** P for ***Psionics,*** STM for ***Steampunk,*** UT for ***Ultra-Tech,*** VE for ***Vehicles,*** and WWi for ***Who's Who 1.*** For a full list of abbreviations, see p. CI181 or the updated Web list at **www.sjgames.com/gurps/abbrevs.html**.

There are few myths as versatile as Atlantis. It is the Ancient Enemy, the Birthplace of Secrets, and the Sunken City. It has served philosophers and cranks equally well for more than two millennia. It (probably) started as an embellishment on one of the foundation-stones of Western thought; today, it has become the home of a race of UFO pilots.

Naturally, this flexible myth has found uses in the world of roleplaying games, and many of these treatments have been just fine. However, each game has taken one specific approach to Atlantis. This book is an overview; it offers choices.

It starts with a review of the history of the story, from its (probable) origins in the works of Plato, through centuries of use and reuse, to its position in regard to modern archaeology, pseudoscience, and fantasy. The second chapter widens the view, looking at other variations on the theme of the Lost Land or the Sunken City. Of course, the sinking of Atlantis takes us beneath the waves, and the third chapter looks at all that implies, and the ways that technology or magic can make life in the depths more feasible.



The remaining three chapters are examples of ways to use Atlantis in games (and other stories). Chapter 4 is Atlantis as the Ancient Enemy, or at least as a fantasy land, with fabulous wealth and strange powers. Chapter 5, by contrast, brings Atlantis up to date, combining mythic hints, conspiratorial thinking, and archaeology to present the heirs of Atlantis as a secret power. Last, Chapter 6 is Atlantis the Sunken City, which may even be a nice place to visit – though not without complications.

So here it is. Do what you want with it, but try not to lose it again.

About the Author

Phil Masters was born and brought up on an island in the Atlantic, the capital of an old world-spanning empire, now largely vanished. Any ancient secrets which he learned were clearly of limited power, however, as he now spends his time creating material for roleplaying games.

Over the years since he first surfaced, in addition to writing, co-writing, or compiling a number of ***GURPS*** supplements, he has worked for Hero Games, White Wolf, and several other companies. He still resides on the island of his birth, worming his way through strange libraries in a quest for useful lore. He believes that his current home is safely well above any possible flood-level.

CHAPTER ONE

PLATONIC SOLIDS

Then listen, Socrates, to a tale which, though strange, is certainly true, having been attested by Solon, who was the wisest of the seven sages.

– Plato, ***Timaeus***

Plato's Story

The story of Atlantis (and, perhaps, Atlantis itself) begins in the writings of the Greek philosopher Plato (about 428 B.C.-347 B.C.), one of the founding figures of Western thought. Plato mostly presents his ideas in the form of imaginary dialogues between the earlier philosopher Socrates and various other scholars and thinkers of the city of Athens. One of these, the *Republic*, discusses the ideal form of the state. Its sequel, the *Timaeus*, probably written around 355 B.C., sets out to (among other things) show something like this ideal state in action.

To achieve this, Plato presents a story, told to Socrates by one of his companions, Critias. Critias in turn declares that he received this story (indirectly) from one of his ancestors, the lawgiver Solon, who supposedly traveled to Egypt some time between 593 B.C. and 583 B.C., and visited a city called Sais, whose priests venerated a goddess whom the Greeks identified with their own Athene. These priests felt a kinship with the Athenians, and received Solon with honor, answering his questions freely when he became interested in their knowledge of history. (The following quotes are from Benjamin Jowett's 19th-century translations of Plato.)

On one occasion, wishing to draw them on to speak of antiquity, he began to tell about the most ancient things in our part of the world . . . Thereupon one of the priests, who was of a very great age, said: "O Solon, Solon, you Hellenes are never anything but children, and there is not an old man among you." Solon in return asked him what he meant. "I mean to say," he replied, "that in mind you are all young; there is no old opinion handed down among you by ancient tradition, nor any science which is hoary with age. And I will tell you why. There have been, and will be again, many destructions of mankind arising out of many causes; the greatest have been brought about by the agencies of fire and water, and other lesser ones by innumerable other causes.

"In the first place you remember a single deluge only, but there were many previous ones; in the next place, you do not know that there formerly dwelt in your land the fairest and noblest race of men which ever lived, and that you and your whole city are descended from a small seed or remnant of them which survived . . . For there was a time, Solon, before the great deluge of all, when the city which now is Athens was first in war and in every way the best governed of all cities, is said to have performed the noblest deeds and to have had the fairest constitution of any . . ."

The Enemy!

In other words, Athens itself was once very close to Plato's ideal state (a claim which must have appealed to patriotic Athenians). The priest goes on to say that this ancient version of Athens lay 9,000 years in the past.

But a story needs conflict, and Plato set out to show his ideal state subjected to the greatest possible test: an all-out war. That meant that an enemy was needed, which the priest went on to describe:

"For these histories tell of a mighty power which unprovoked made an expedition against the whole of Europe and Asia, and to which your city put an end. This power came forth out of the Atlantic Ocean, for in those days the Atlantic was navigable; and there was an island situated in front of the straits which are by you called the Pillars of Heracles; the island was larger than Libya and Asia put together, and was the way to other islands, and from these you might pass to the whole of the opposite continent which surrounded the true ocean; for this sea which is within the Straits of Heracles is only a harbor, having a narrow entrance, but that other is a real sea, and the surrounding land may be most truly called a boundless continent."

(The "Pillars of Heracles" are what we call the Straits of Gibraltar, the "pillars" being the Rock of Gibraltar and Jebel Musa – Mount Ceuta. "Libya and Asia" mean part or all of modern North Africa and Asia Minor, making this a substantial island or a small continent.)

"Now in this island of Atlantis there was a great and wonderful empire which had rule over the whole island and several others, and over parts of the continent, and, furthermore, the men of Atlantis had subjected the parts of Libya within the columns of Heracles as far as Egypt, and of Europe as far as Tyrrhenia. This vast power, gathered into one, endeavored to subdue at a blow our country and yours and the whole of the region within the straits; and then, Solon, your country shone forth, in the excellence of her virtue and strength, among all mankind. She was pre-eminent in courage and military skill, and was the leader of the Hellenes. And when the rest fell off from her . . . she defeated and triumphed over the invaders, and preserved from slavery those who were not yet subjugated, and generously liberated all the rest of us who dwell within the pillars. But afterward there occurred violent earthquakes and floods; and in a single day and night of misfortune all your warlike men in a body sank into the earth, and the island of Atlantis in like manner disappeared in the depths of the sea. For which reason the sea in those parts is impassable and impenetrable, because there is a shoal of mud in the way; and this was caused by the subsidence of the island."

(Tyrrhenia is part of modern Italy.) This last part is slightly curious, as there are no significant shoals in front of the Straits of Gibraltar, and sailors from the Mediterranean world were traveling the Atlantic fairly regularly in Plato's time, as any intelligent Greek would have known.

In any case, the *Timaeus* diverges from this topic at this point, moving onto the history of Creation and the nature of man. It appears that Plato had decided to produce a trilogy, laying down grand philosophical principles in the first book, and describing more specific matters in the second.

The Critias

This second volume, the *Critias*, takes up the story of Atlantis again. It appears that the island was granted to the sea-god Poseidon after the creation of the world:

Poseidon, receiving for his lot the island of Atlantis, begat children by a mortal woman, and settled them in a part of the island, which I will describe. Looking toward the sea, but in the center of the whole island, there was a plain which is said to have been the fairest of all plains and very fertile. Near the plain again, and also in the center of the island at a distance of about fifty stadia, there was a mountain not very high on any side.

PLATO'S IDEAL STATE

By Heracles, what a lot of lies this young man is telling about me!

– Comment ascribed to Socrates after hearing one of Plato's dialogues read in public.

Plato was not only the originator of the story of Atlantis (or at least, responsible for popularizing it); he was also one of the founders of Western thought, and the *Republic*, *Timaeus*, and *Critias* are significant works of political philosophy. That said, his ideas may seem unusual, to say the least, to modern readers.

The *Republic* especially propounds ideals that would have been hastily rejected by the most extreme 20th-century fascist dictator. It starts with an examination of the idea of justice, but places this in the context of a hypothetical just society. This, Plato says, must use a thorough educational system to select a class of philosopher-rulers, who must then be banned from owning private property or having families of their own, to ensure their impartiality. They would rule over two other sharply defined classes, the common people and a class of police/army enforcers. Plato thoroughly approved of the idea of artistic censorship, as art could all too easily be subversive; indeed, he concludes that the ideal society should ban poets altogether. However, he approves of the idea of the "pious lie," which the philosopher-rulers could tell to lesser citizens for the sake of an efficient society.

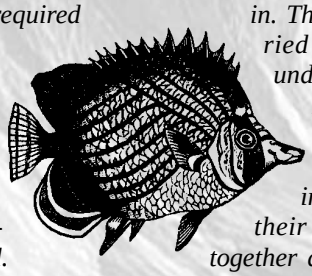
It is unlikely that Plato imagined that his ideal state could be brought into existence in reality; indeed, the whole thing may be primarily a metaphor for his concept of human nature, divided into intellect, appetites, and active nature. (When Plato *did* try to intervene in real-world politics, attempting to turn the ruler of Syracuse, in Sicily, into a philosopher-prince, the project collapsed due to personal jealousies.) He certainly recognized the fact of entropy, admitting that even his Republic would eventually decline into corruption and decadence. One suggestion as to why the trilogy beginning with the *Timaeus* and *Critias* remained unfinished is that, having begun by depicting one state (prehistoric Athens) equivalent to his ideal, and another high-minded, pious, and impressive nation (Atlantis) that had fallen into decadence, he could find no way to actually show them in action with any plausibility. But it is worth bearing in mind that the original image of Atlantis comes from a distant age whose ideals were quite unlike our own.

(A *stadium*, or *stade*, is about 600' to 660', so that city seems to have been about 6 miles from the sea.)

In this mountain there dwelt one of the earth-born primeval men of that country, whose name was Evenor, and he had a wife named Leucippe, and they had an only daughter who was called Cleito. The maiden had already reached womanhood, when her father and mother died; Poseidon fell in love with her and had intercourse with her, and breaking the ground, enclosed the hill in which she dwelt all round, making alternate zones of sea and land larger and smaller, encircling one another; there were two of land and three of water, which he turned as with a lathe, each having its circumference equidistant every way from the center, so that no man could get to the island, for ships and voyages were not as yet. He himself, being a god, found no difficulty in making special arrangements for the center island, bringing up two springs of water from beneath the earth, one of warm water and the other of cold, and making every variety of food to spring up abundantly from the soil. He also begat and brought up five pairs of twin male children; and dividing the island of Atlantis into ten portions, he gave to the first-born of the eldest pair his mother's dwelling and the surrounding allotment, which was the largest and best, and made him king over the rest; the others he made princes, and gave them rule over many men, and a large territory.

Thus, Atlantis was clearly a vast and impressive power, neatly divided into ten provinces. It was also rich:

For because of the greatness of their empire many things were brought to them from foreign countries, and the island itself provided most of what was required by them for the uses of life. In the first place, they dug out of the earth whatever was to be found there, solid as well as able to be smelted, and that which is now only a name and was then something more than a name, orichalcum, was dug out of the earth in many parts of the island, being more precious in those days than anything except gold.



No one is quite sure what ancient writers meant by "orichalcum"; the word literally means something like "mountain copper." It may simply mean brass, or possibly some other copper-based alloy. After some more description of the island, Plato moves on to its capital city:

The Princes of Atlantis

In the *Critias*, Plato actually specifies what their father, Poseidon, named the first Atlantean princes:

The eldest, who was the first king, he named Atlas, and after him the whole island and the ocean were called Atlantic. To his twin brother, who was born after him, and obtained as his lot the extremity of the island toward the Pillars of Heracles, facing the country which is now called the region of Gades in that part of the world, he gave the name which in the Hellenic language is Eumelus, in the language of the country which is named after him, Gadeirus. Of the second pair of twins he called one Ampheres, and the other Evaemon. To the elder of the third pair of twins he gave the name Mneseus, and Autochthon to the one who followed him. Of the fourth pair of twins he called the elder Elasippus, and the younger Mestor. And of the fifth pair he gave to the elder the name of Azaes, and to the younger that of Diaprepes.

First of all they bridged over the zones of sea which surrounded the ancient metropolis, making a road to and from the royal palace. And at the very beginning they built the palace in the habitation of the god and of their ancestors, which they continued to ornament in successive generations, every king surpassing the one who went before him to the utmost of his power, until they made the building a marvel to behold for size and for beauty. And beginning from the sea they bored a canal of 300 feet in width and 100 feet in depth and 50 stadia [6 miles] in length, which they carried through to the outermost zone, making a passage from the sea up to this, which became a harbor, and leaving an opening sufficient to enable the largest vessels to find ingress. Moreover, they divided at the bridges the zones of land which parted the zones of sea, leaving room for a single trireme to pass out of one zone into another, and they covered over the channels so as to leave a way underneath for the ships; for the banks were raised considerably above the water. Now the largest of the zones into which a passage was cut from the sea was three stadia [600+ yards] in breadth, and the zone of land which came next of equal breadth; but the next two zones, the one of water, the other of land, were two stadia [400+ yards], and the one which surrounded the central island was a stadium [200 yards] only in width. The island in which the palace was situated had a diameter of five stadia [1,000 yards]. All this including the zones and the bridge, which was the sixth part of a stadium [100'] in width, they surrounded by a stone wall on every side, placing towers and gates on the bridges where the sea passed in. The stone which was used in the work they quarried from underneath the center island, and from underneath the zones, on the outer as well as the inner side. One kind was white, another black, and a third red, and as they quarried, they at the same time hollowed out double docks, having roofs formed out of the native rock. Some of their buildings were simple, but in others they put together different stones, varying the color to please the eye, and to be a natural source of delight. The entire circuit of the wall, which went round the outermost zone, they covered with a coating of brass, and the circuit of the next wall they coated with tin, and the third, which encompassed the citadel, flashed with the red light of orichalcum.

Whoever first told this tale, Plato or an Egyptian priest, clearly intended to impress by scale and opulence. The citadel and temples were vast and highly decorated: *Here was Poseidon's own temple which was a stadium [600'] in length, and half a stadium [300'] in width, and of a proportionate height, having a strange barbaric appearance. All the outside of the temple, with the exception of the pinnacles, they covered with silver, and the pinnacles with gold. In the interior of the temple the roof was of ivory, curiously wrought everywhere with gold and silver and orichalcum; and all the other parts, the walls and pillars and floor, they coated with orichalcum.* There were also public fountains, running with both hot and cold water; the springs created by Poseidon were sufficient to supply not only this, but also an aqueduct which led to the outer city.

Plato's account also emphasizes Atlantis's natural resources:

There was an abundance of wood for carpenter's work, and sufficient maintenance for tame and wild animals. Moreover, there were a great number of elephants in the island; for as there was provision for all other sorts of animals, both for those which live in lakes and marshes and rivers, and also for those which live in mountains and on plains, so there was for the animal which is the largest and most voracious of all . . .

The outer rings of the city had further wonders – temples, gardens, baths, a racecourse, and so on. There were more than adequate defenses, including *a wall which began at the sea and went all round: this was everywhere distant 50 stadia [6 miles] from the largest zone or harbor, and enclosed the whole, the ends meeting at the mouth of the channel which led to the sea.* This vast city was supported by a large agricultural region:

The whole country was said by him to be very lofty and precipitous on the side of the sea, but the country immediately about and surrounding the city was a level plain, itself surrounded by mountains which descended toward the sea; it was smooth and even, and of an oblong shape, extending in one direction 3,000 stadia [350 miles], but across the center inland it was 2,000 stadia [200+ miles].

This great plain, 200 or 300 miles in any dimension, was entirely surrounded by an irrigation ditch, 100' deep, 600' wide, and over 1,000 miles long in total, feeding further canals for irrigation and transport. (Plato's account admits that all this sounds too vast to believe, but the narrator says, "I must say what I was told.")

Needless to say, Atlantis could raise a vast army (citizen-soldiers on the Greek model); the capital city alone could provide 10,000 chariots, plus numerous supporting infantry, and 1,200 ships. Each of the 10 kings had absolute power in his own province, while their mutual relations were governed by rules laid down by Poseidon.

The *Critias* describes the process by which the island was ultimately governed in ceremonial, almost mystical terms. At the heart of everything were the laws laid down by Poseidon:

These were inscribed by the first kings on a pillar of orichalcum, which was situated in the middle of the island, at the temple of Poseidon, whither the kings were gathered together every fifth and every sixth year alternately, thus giving equal honor to the odd and to the even number.

(The sense that numbers were worthy of honor *in themselves* almost seems to suggest Pythagorean ideas – the numerological mysticism that was popular among Greek philosophers before Plato.)

And when they were gathered together they consulted about their common interests, and enquired if any one had transgressed in anything and passed judgment and before they passed judgment they gave their pledges to one another on this wise: There were bulls who had the range of the temple of Poseidon; and the 10 kings, being left alone in the temple, after they had offered prayers to the god that they might capture the victim which was acceptable to him, hunted the bulls, without weapons but with staves and nooses; and the bull which they caught they led up to the pillar and cut its throat over the top of it so that the blood fell upon the sacred inscription.

Thus bound by sacred oaths and sacrifices, and perhaps by the mutual loyalty and trust that comes with shared danger, the 10 kings sat together overnight to agree their judgments, which they then wrote down on a golden tablet. The most important law governing them all was that they were not only not to take up arms against each other, but they were to defend each other in the event of rebellion.

This divinely ordained state survived for many generations, but eventually fell into decadence. This, it seems, was what led to their great war with Egypt and Greece, and eventually to their destruction by a natural catastrophe. *Zeus, the god of gods, who rules according to law, and is able to see into such things, perceiving that an honorable race was in a woeful plight, and wanting to inflict punishment on them, that they might be chastened and improve, collected all the gods into their most holy habitation, which, being placed in the center of the world, beholds all created things. And when he had called them together, he spoke as follows . . .*

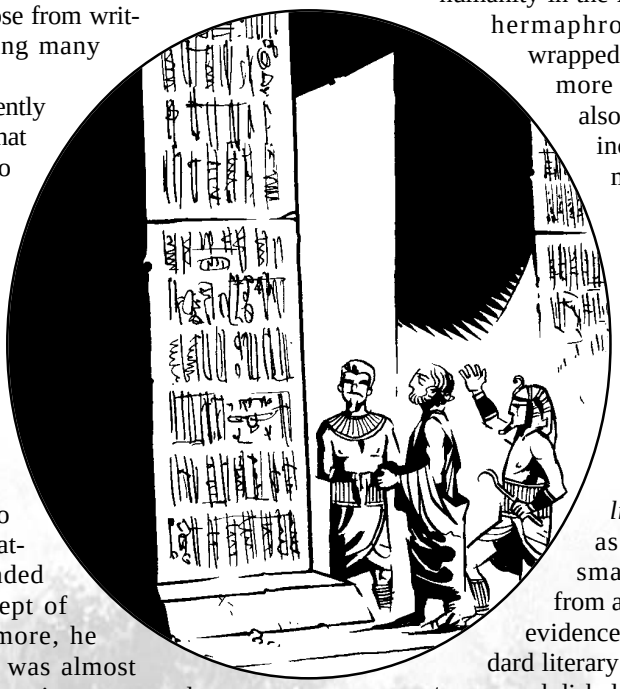
But there, the *Critias* ends, an eternal cliffhanger. While it is possible that part has been lost, it appears fairly certain that Plato never did complete his story, or even start the third dialogue in the trilogy.

Views After Plato

If the story of Atlantis was all that Plato had left, it might have been forgotten in a few years. However, a story told by one of the giants in the history of thought was guaranteed to survive.

This is fortunate for the legend, because Atlantis is mentioned nowhere else in surviving Greek writings, except in references to Plato. (Nor, incidentally, does it seem to be mentioned in any surviving Egyptian records.) In fact, it is not mentioned at all in any *surviving* texts from a long period after Plato's time, but Greek and Roman writers were much given to quoting each other, with references, so we have some idea what was said in writings that have since been lost. However, quite how reliable these cross-references may be, especially those from writers with odd obsessions working many centuries after Plato, is debatable.

Some other Greeks were evidently fascinated by Atlantis, but from that day to this, there have been two schools of thought on the subject. One assumes that what Plato said had at least a kernel of literal truth, the other believes that the whole thing was a completely fictional parable.



The Believers

There are several arguments for taking Plato's story more or less literally. To begin with, Plato specifically says it is true, repeatedly – and he was a high-minded individual who took the concept of truth very seriously. Furthermore, he credits the tale to Solon, who was almost proverbial for his honesty and seriousness, and who did indeed visit Egypt. Plato traces the steps in the transmission process quite scrupulously. Later writers claim, several times, that he drew it from a book that he owned, and one says that he specifically said that it might or might not be true.

According to a much later writer, an early follower of Plato, Crantor, decided to confirm the story of Atlantis by visiting Egypt, where local priests agreed that they did indeed have records of this history, in the form of inscribed pillars. (This, it has to be said, sounds very skimpy; the story acknowledges that Crantor could not read Egyptian hieroglyphics, and so only had the priests' word for what they said.) Other writers merely noted that Plato might or might not have been telling a true story.

However, in the later Roman era, scholars and philosophers seemed more willing to take Plato literally. For example, aside from Neoplatonist attempts to impose magical interpretations on the tale (see p. 16), it was invoked by one of the very few educated medieval Christians who really *did* believe that the world was flat.

The Cynical View

All that said, there have also always been plenty of people who held that Atlantis was simply a story, invented by Plato. Among them was Aristotle, the third great Greek philosopher after Socrates and Plato. According to a later account, he described Plato's Atlantis as an example of a literary trick; a writer creating something needed by his story, then using the plot to get rid of it when it becomes inconvenient. "The man who dreamed it up made it vanish."

A quick review of Plato's other works shows that he was far from literal-minded. He created parables involving islands floating in the sky and inhabited by giants, souls wandering in the afterlife and then returning to their bodies, and Pythagorean legends of the original creation of humanity in the form of four-armed, four-legged hermaphrodites. Also, the comments wrapped around the Atlantis story look more than a little ironic. There are also stories that other philosophers, including Socrates himself, commented that Plato had credited them with opinions and words that they would never have uttered. He believed in truthfulness, certainly, but in the sense of moral and philosophical truth; if a parable got a valid point across, that was the important thing. (It might be like the "noble lies" permitted to the rulers of the *Republic*, or Plato might simply have assumed that his audience was smart enough to tell a metaphor from a fact.) As for all the "supporting evidence," that could simply be a standard literary trick; encouraging the audience to suspend disbelief by making the fantasy *sound* solid.

In addition to all of which, there are detail problems with Plato's framing story (leaving aside the plausibility of the legend itself): the dates for Solon's trip do not match with those of the pharaoh mentioned, Critias claims in one place to be dredging this account up from childhood memories and in another to be quoting a manuscript, and so on. For that matter, Plato could be telling the complete truth as he knew it, but Critias could have been told a children's fairy-story by his family, or Solon could have been spun an amusing tale by a priest hoping to keep a rich foreign tourist happy.

What's In a Name?

Many people who know something about the Atlantis legend assume that the Atlantic Ocean was named after the lost continent, or perhaps vice versa. Actually, the truth is more complicated and confused than that.

Both names actually trace their origins back to the name of Atlas, the Titan who, in Greek myth, held the sky on his

Plato's Possible Inspirations

Plato need not have invented the Atlantis story from whole cloth, and may have been shaping an allegory on several levels. There are a whole array of events and issues from around his time that *could* have contributed to the tale.

To begin with, it involves features common to many Greek myths. Poseidon was, of course, the pantheon's main sea-god (and a rival to Athene, patron of Athens), who was said to have fathered seven children by a lover on the island of Rhodes, while other tales mentioned islands far to the west (such as the Hesperides), and also a great flood (survived by the Noah-like figure Deucalion; see p. 31), and so on. There were also nonmythical events, near to Plato's own time, which provide interesting echoes:

Tartessos: According to Greek writers, Tartessos was a city (possibly just a tribal province) in southwestern Spain, near modern Cadiz (and thus "beyond the Pillars of Hercules"). It was supposedly a rich source of silver and other metals. Some scholars believe that it is mentioned in the Bible as "Tarshish," but others think that Tarshish is simply the eastern Mediterranean city of Tarsus. If it was a true city, it may have been founded by the Phoenicians, the Etruscans, or even the Minoans, and its inhabitants may have been related to the modern Basques; archaeologists have found little evidence on the supposed site, and the whole subject remains very shadowy. In any case, it eventually faded away around 500 B.C.; it may have been suppressed as a rival by the Carthaginians (see below). Some modern theories suggest that the Atlantis legend was actually a garbled Egyptian account of Tartessos (perhaps including hints of a war with Carthage), but it is equally easy to assume that Plato himself knew of old stories of this wealthy western land.

Carthage: The city of Carthage, in North Africa, was a rising commercial power in Plato's time, well-known to the Greeks as a rival (and occasionally as an enemy in wars over the colonization of Sicily). Originally a Phoenician colony, it was famously wealthy, with a hilltop citadel and great docks and canals – and it lay to the west of Greece. While it would probably be excessive to say that Atlantis could have been an exaggerated version of Carthage, knowledge of that city may well have been in the back of Plato's mind. Furthermore, Carthaginian sailors reported that voyages in the Atlantic were hindered by regions of "sticky water" and impenetrable fog, which may explain Plato's line about the impassable shoals beyond the pillars of Hercules. One theory is that the Carthaginians had once reached the Sargasso Sea (see p. 34), although the story was quite likely just intended to scare off commercial rivals.

The Persian Wars: Between 492 B.C. and 479 B.C., the mighty Persian Empire launched a series of invasions of Greece. These were defeated and driven back by the efforts of the Greek city-states. Athens played a leading role in this conflict, sometimes standing alone, although its allies (including Sparta) were crucial to the ultimate victory. Plato's audience would have been fully familiar with the idea of heroic Athenian resistance to invasion by proud foreign powers.

The Peloponnesian War: The great local rival of Athens in Plato's time was of course Sparta, a city which Plato admired for its legendary discipline. Sparta was, nonetheless, an enemy (despite the earlier alliance against Persia), and the two cities fought the great Peloponnesian War from 431 B.C. to 404 B.C., with Sparta ultimately victorious. While this conflict bears little resemblance to the Atlantis story, it was yet another epic struggle during which Athens suffered natural disasters; an earthquake in 426 B.C., a terrible plague, and the loss of a fortress on a small island named Atalante, destroyed by a great wave.

Helice: Around 373 B.C., the town of Helice, in central Greece, was struck by a giant wave, apparently generated by an earthquake and landslide. According to later accounts, the city was a mile and a half from the sea, but it was swept away so thoroughly that when the citizens of neighboring areas ventured to the site to bury the dead, they found that everything, including the bodies, had been swept away into the Gulf of Corinth. This is clearly a spectacular image of natural disaster from Plato's own lifetime and part of the world. (Incidentally, there are also suggestions that Helice was the location of famous bull sacrifices.) Unfortunately, archaeologists have never been able to identify the ruins of Helice.

shoulders. (The image of him supporting the globe of the world is a later piece of artistic confusion.) This myth made Atlas a physical figure who had to be located in the mortal world, and the Greeks seem usually to have placed him somewhere off in the vague west, distant enough that no one in Greece could be expected to have seen him. However, as their geographical knowledge expanded, he was necessarily pushed further away, ending up in what became known as the Atlas Mountains, in modern Morocco. A generation before Plato, the Greek writer Herodotus called the ocean beyond the "Pillars of Hercules" the "Atlantic Sea," meaning the "Sea of Atlas"; he also wrote of a tribe in the western deserts called the "Atlantes," who supposedly took their name from a mountain called Atlas which they thought was one of the "pillars of the sky."

If Plato invented the name of Atlantis, he doubtless knew about all this. (And if it goes back to Solon, he knew of much the same body of legends.) What Plato's original Greek means is "the Island of Atlas"; "Atlantis" comes out different to "Atlantic" only because of a difference in the gender of the nouns with which they agree.

Rebirth of a Notion

But whatever their literal truth, Plato's writings remained part of every Western philosopher's education through the Middle Ages and the Renaissance, so the name of Atlantis remained in circulation at least in academic quarters. However, for centuries after the decline of Rome, it seems to have been mostly disregarded. It returned to public attention in the Renaissance "Age of Exploration." In 1553, a Spanish historian suggested that the Americas might be Atlantis, or at least that Plato might have heard rumors of an early discovery of a continent far to the west, and some cartographers even attached the old name to the New World.

However, it remained little more than a name and a topic of occasional scholarly speculation. For example, in 1664, Athanasius Kircher, a Jesuit priest and polymath, wrote *Mundus Subterraneus* ("Subterranean World"), which includes perhaps the first modern attempt at a map of Atlantis. (The book is a wide-ranging, brilliant early exercise in geology and hydrology that also, unfortunately, turned out to be completely wrong.) And in the 18th century, an astronomer suggested that Atlantis might have been destroyed by the impact of a comet (a theme that recurs in modern fringe science). But few reputations were staked on the truth of Plato's story.

The Victorian Age

By the 19th century, Atlantis was seen by most educated Westerners as just another curious classical tale, one which might have some basis in truth but which probably didn't. The French science fiction writer Jules Verne used it in his *20,000 Leagues Under the Sea,* published in 1870, but merely as a curious mass of ruins for his underwater travelers to visit during one of their walks on the seabed:

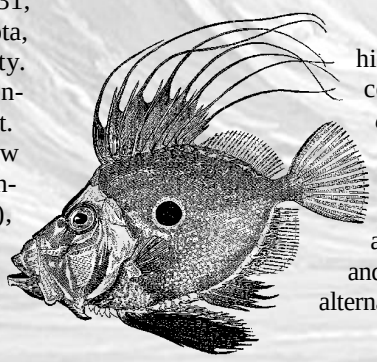
In fact, beneath my eyes, ruined and destroyed, appeared the remains of a town, its roofs open, its temples fallen, its architecture gone . . .

But this era also saw the rise of countless pseudosciences and fringe theories, and Plato's story found a new role. It appeared in the confused scholarship that generated the idea of Mu, another lost continent (see pp. 40-42), but its greatest champion was an American politician.

Donnelly's Atlantis

Ignatius Donnelly was born in Philadelphia in 1831, and trained as a lawyer. In 1856, he moved to Minnesota, where he and John Nininger founded Nininger City. Unfortunately, their ambitious scheme collapsed; Donnelly supposedly found himself the town's only resident.

Originally a Democrat, he joined and rose in the new Republican Party, becoming lieutenant governor of Minnesota (1861-1862) and a congressman (1863-1869), then working as a journalist, lobbyist, and lecturer. In the 1870s, he was active in minority parties representing the interests of small farmers and workmen.



Atlantis: The Antediluvian World, his first book, was a popular success. *Ragnarok: The Age of Fire and Gravel* (1883), which explained certain geological features as the result of an ancient near-collision between the Earth and a comet, was less successful, and for the rest of his life, Donnelly alternated between politics and writing.

Atlantis, Aztlán, Aztecs?

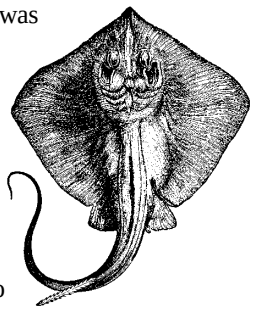
One coincidence of names that has excited some fringe theorists links the Old World and the New. According to their own traditions, the Aztecs of pre-Columbian Mexico came from a place named Aztlán (meaning "White Land"), which was described as an island in a lake. They took to wandering during the downfall of the old Toltec Empire, becoming just one of numerous barbarian "Chichimec" tribes looking for a place to settle, before founding their own city of Tenochtitlán and eventually rising to imperial power. (See ***GURPS Aztecs,*** pp. AZ99-101, for details of this story.)

Modern archaeologists and historians believe that the period when the ancestors of the Aztecs were migratory wanderers ran from the beginning of the 12th century to the beginning of the 13th – far too late to tie in with the legend of Atlantis. (However, the legend of a homeland named Aztlán *could* of course have been attached to this later episode after being passed down from ancient times.) Aztlán itself has never been identified; it may well be just a name for the general area of northwest Mexico from which this barbarian tribe emerged during the period of social upheaval, but attempts have been made to identify it with locations anywhere from within the Valley of Mexico to California (and the "island in a lake" *could* be a strangely shrunken memory of a great oceanic island-continent). What the Theosophists did with this, not least with the dating of the Toltecs as well as the Aztecs, hardly bears thinking about – but see p. 15 anyway.

Mostly, though, the fringe theorists have to quietly admit that the Aztecs frankly appeared too late to fit in with the Atlantis story, and focus instead on the older Mayans, who also have the virtues of a slightly lower rate of human sacrifice and much more sophisticated writing and mathematics. (The Mayan fondness for precise calendars covering eons of time also helps make them prime fringe theory fodder.) Donnelly, it may be noted, also relates the Incas of Peru to his ideas; he thought that the religion of Atlantis was sun-worship, which was passed down to the Incas and Ancient Egyptians.

In *The Great Cryptogram* (1888) and *The Cipher in the Plays and on the Tombstone* (1899), he attempted to prove that Sir Francis Bacon was the real author of the works of Shakespeare, by deciphering a code supposedly embedded therein. (Donnelly thus has important roles in two different fringe theories.) He eventually decided that Bacon also wrote Marlowe's plays and Montaigne's essays.

Donnelly wrote three novels. *Caesar's Column* (1890), set in 1988, predicts radio, television, and poison gas, but its main purpose is to show the future U.S. working class, oppressed by ruthless financiers, rising in disastrous revolt. *Doctor Huguet* (1891) is a fantasy in which a cultured white man finds his mind miraculously switched with that of a poor black. And *The Golden Bottle* (1892) shows a Kansas farm boy, given the power to turn iron into gold, bringing down the old system. Meanwhile, Donnelly was helping found the Populist Party, representing discontented Western farmers. At the time of his death on January 1, 1901, he was the vice-presidential candidate of the splinter Middle Road Populists.



Donnelly's politics were quirkish, but his campaigns (including abolitionism and monetary reform) were all intended to help the oppressed. He could have a role in weird campaigns; well-read and partly self-taught, he liked to explain multiple facts by reference to single causes, he was full of crackpot theories (which might turn out to be true) and politically well-connected, and his interests in ancient wisdom, secret messages, and radical politics make him a candidate for Illuminati status, or at least a wannabe.

Some writers suggest that Donnelly may have read Verne, and acquired the spark of his idea about Atlantis there. But Donnelly was one of the world's determinedly original thinkers, and was probably fully capable of coming up with his own odd ideas. His *Atlantis: The Antediluvian World*, published in 1882, certainly took Atlantis a little way from the realms of picturesque fiction.

In some ways, Donnelly's is a very unfantastic view. His Atlantis has no magic or strange mental powers, and is supported by a huge weight of dry (if not always very solid) evidence. Furthermore, Donnelly's central point was extremely reductionist. He believed that virtually every single achievement of early human civilizations, from iron-working through writing to pyramids, had a single source: Atlantis. Nothing was ever invented twice, and indeed anything done by two widely separated cultures proves that they were both once in contact with Atlantis. Furthermore, the gods of the Greeks, Norse, Phoenicians, and Hindus were simply confused recollections of the Atlantean royal family, which was the original model for Olympus, Asgard, and the Garden of Eden. (On the other hand, the actual religion of Atlantis was sun-worship, which was transmitted to Egypt and Peru.) The then-recent discovery of slightly less deep areas of the Atlantic – what is now known as the Mid-Atlantic Ridge, generated by volcanic activity as two great geological plates move apart – gave Donnelly more "evidence" for Atlantis, and he decided that the Azores were its last remnant.

Renaissance Utopias

Plato's symmetrical, hierarchical, orderly, coldly inhuman city is the sort of thing that appeals to a certain type of thinker. Not surprisingly, in the classically obsessed Renaissance, the name and other elements of the tale would be borrowed by other philosophers with their own visions.

More's Utopia

The original *Utopia* appeared in a book by the churchman, statesman, and eventual martyr Sir Thomas More, in 1516. He presents his description as a story told him by a Portuguese seaman who traveled to the New World with Amerigo Vespucci, and discovered the island on his travels. (The name is a Greek pun; it could mean "No Place" or "Good Place.") Actually, More's Utopia probably includes a large dose of satire; it is doubtful that a Catholic like More would really have approved of this pagan, communistic land, but he contrasts it interestingly to the corruptions of European society. In this rational republic, property is held in common, weapons are for self-defense only, women have rights and education equal to those of men, and there is religious tolerance except for atheists. (However, there is also slavery, which makes it a questionable Utopia to most modern eyes, and euthanasia and divorce, which would offend More's Catholic sensibilities.)

The City of the Sun

The circles of Atlantis's capital reappeared in 1602, when Tommaso Campanella, imprisoned by the Spanish Inquisition, wrote *The City of the Sun.* Campanella was a Dominican monk and philosopher of science whose thinking had sometimes led him to heresy, and who had dabbled in revolutionary politics. His eponymous metropolis has seven concentric walls, on which are inscribed the principles of science, for educational purposes. The city is ruled by a philosopher-king, but is generally communistic, with property held in common, and has flying machines and self-propelled ships.

The New Atlantis

In 1629, another English politician, Francis Bacon, wrote *The New Atlantis.* Bacon was dedicated to the emerging idea of experimental science, and his utopia includes a fair amount of science fiction; in fact, it is mostly a catalogue of hypothetical scientific wonders. However, the framework story tells of the accidental discovery of this land in the Pacific; it turns out that it was settled from Atlantis, which was in fact in the Americas. (Its downfall was a catastrophic but strictly temporary flood.) In addition to submarines, aircraft, and air conditioning, Bacon's New Atlantis has a democratic constitutional monarchy.

Atlantis, the Original Civilization

Donnelly's version of Atlantis adds a detail to the myth that is either absent or, at most, hidden in earlier accounts; the idea that it was the Original Civilization, from which all later cultures derive. This looks rather ironic when compared with Plato's version, the whole point of which was that Atlantis was just one ancient nation, set in opposition to the idealized Athens. However, it appeals to people who like to look back to a "Golden Age," or who demand explanations for what are probably plain coincidences (such as the presence of Pyramid-building cultures on both sides of the Atlantic). It also provides less savory groups with an ideological crutch; racists can assume that the ancestors of their own race were, in fact, the Atlanteans, and everyone else borrowed everything important from them, being too stupid to invent things for themselves.

One thing to be said for this theory from the game point of view, however, is that it can be a useful excuse for stylistic crossovers. GMs can take ideas from any ***GURPS*** historical sourcebook for use in an Atlantean setting, without apology. If any culture can be the heirs of Atlantis, Atlantis can resemble any culture.

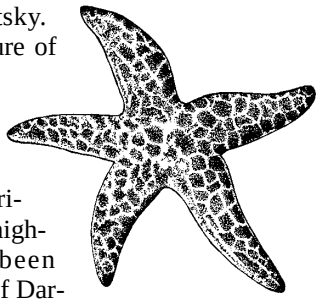
For example, if the Egyptians who supposedly told Solon that they remembered more details of the truly ancient world than anyone else were right, perhaps they actually inherited much from earlier cultures, too; game details for Atlantis could be taken from ***GURPS Egypt,*** complete with pharaohs, scribes, and belief in the seven-part soul. Alternatively, consider the real-world culture with perhaps the greatest capacity for continuity; an "oriental-style" Atlantis, with ***GURPS China*** as a reference, would make an interesting change. Then again, perhaps Atlantis was the original "Otherworld" of Celtic legend, as seen in ***GURPS Celtic Myth;*** an exaggerated Celtic land of heroic kings, witty charioteers, and pensive druids.

Basing a game Atlantis on later-period sourcebooks, such as ***GURPS Imperial Rome*** or ***GURPS Arabian Nights,*** requires a little more doubletalk, but perhaps cultural patterns can be embedded in the human subconscious, to reemerge later when new, rising nations are looking for a model. An Atlantis of senators and disciplined legions, or of minarets and merchants, could be fun. Or, of course, one can mix things up a little, seeing how far one can combine, say, Celtic heroism, Egyptian metaphysics, and Arabian architecture, before someone's suspension of disbelief gives way.

Donnelly's work was massive enough to look respectable, with a huge quantity of supporting evidence (of highly variable quality), and it deserves a large amount of credit for the popularization of the Atlantis myth. It remained in print long after its author's death, despite geological discoveries that made the idea of a lost continent in the Atlantic look increasingly implausible, anthropological studies that shredded his ideas about cultural history, and a growing willingness among most people to believe that primitive tribes might not be too stupid to invent things for themselves. Meanwhile, however, a rather weirder movement was formulating its own ideas about (very) ancient history, and making the scenery of Atlantis look a lot stranger.

Theosophy

The Theosophist movement emerged in the last quarter of the 19th century (although the word "theosophy" was much older), under the domination of the extraordinary Helena Blavatsky. Its beliefs were based on a mixture of spiritualism, assorted (mostly eastern) religions, and descriptions of the nature and history of the universe acquired by its leaders through (supposedly) spiritual insight and the guidance of higher powers. The century had been shaken by the scientific theories of Darwinian Evolution and the vast time scales and spaces revealed by geology and astronomy, and Theosophy reacted with its own concept of evolution.



The key text in this respect is Blavatsky's *The Secret Doctrine*, published in 1888. This depicts the history of the universe and of humanity, moving in great sweeping eras of millions of years. Humanity is shown as descending from a series of "root races." Blavatsky accepts that humanity's ancestors were not human, and that the first of them were indeed little more than multiplying cells, but adds a spiritual aspect to this, as these races represent the manifestations of spirit-beings from other planets, who attempt to advance through a series of rebirths across the universe. Indeed, Blavatsky describes those earliest ancestors as intangible, spiritual beings; only with the "Second Race" did humanity's ancestors spend even part of their time in material form. Theosophist evolution is not a process of random mutation and selective environmental pressures, but is guided by mysterious spiritual beings and forces.

Theosophist history is also driven by an intermittent series of catastrophes, which may be provoked by the sins and spiritual errors of each Root Race in turn. Entire continents, on which these races evolved and lived, suffered annihilation. Often, only a single subrace of protohumans survived to become the ancestors of the next Race. The "Fourth Race" lived on Atlantis (just as the "Third Race" had lived on the lost continent of Lemuria; see pp. 37-40).

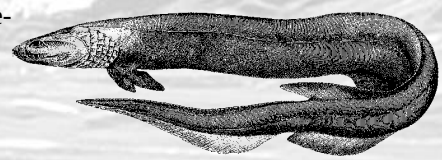
Theosophy's Atlanteans

Different Theosophist writers give slightly different accounts of Atlantis, and most agree that it changed quite extensively over time, complicating things further. For example, all versions seem to agree that the first Atlanteans were much larger than modern humans. However, whereas one says that the first Atlanteans, the "Rmoahals," were 10' to 12' tall, and the later, intermediate "Toltecs" were around 8', another insists that the Toltecs were 27' tall (with rock-hard flesh). Incidentally, according to Blavatsky, the "sacerdotal language" of the Atlantean adepts was called "Senzar."

Rudolf Steiner, a leading Theosophist who left the movement after a dispute and founded his own group, the Anthroposophical Society, declared that Atlanteans lacked the ability to reason or calculate, but they had excellent and well-trained memories. In fact, some could pass their store of memories on to their descendants psychically. They solved problems by comparing them to precedents from memory, which obviously worked well enough for routine issues, but would fail completely when confronted with novel problems. (Given that Steiner was very interested in practical methods of education, it would be tempting to read much of this as satire, but he seems to have been entirely straight-faced.) They had complete control over the "life force" of living things, which apparently took the form of telekinetic power which they could tap from plants. The later Atlanteans lost much of this power (and grew more selfishly individualistic); they developed logical reasoning in compensation. Their better kings were spiritually enlightened, receiving advice from incorporeal beings and adopting vegetarianism, whereas their subjects were meat-eaters, with, allegedly, a taste for offal, blood, and rotten fish.

Theosophists credited the Atlanteans with significant technological advances, including the domestication of several animals and crop plants, and also with flying ships. However, the last may have been powered by advanced psychic abilities; Steiner says that they used their telekinetic powers for this. Conversely, one account mentions "Vril," a "force" actually invented by a Victorian science fiction novelist, which was also apparently used to propel seagoing ships. Atlantean armies fought with swords, spears, bows, and gas-bombs thrown from catapults; military flying ships fought rather crudely, using their drive jets to overturn each other, then ramming. Incidentally, accounts of the flying ships state that the atmosphere was less dense then than today, which somehow imposed a ceiling of 1,000' on their operations; their maximum speed was 100 mph.

Most of this suggests a TL2 or TL3 culture, but the light alloys also used in those ships, the fact that they can fly, and the mentions of alchemy generating many useful products, all suggest something more advanced.



Theosophy's Atlanteans in GURPS Terms

The following racial package is a compromise ***GURPS*** treatment, based on several Theosophist (and Anthroposophical) accounts of the Atlanteans, primarily of the "Toltec" sub-race (which has nothing to do with the Toltecs of real-world Mexican history).

Atlanteans have +7 ST with the "Natural" limitation (see p. CI8: 48 points), -1 IQ (-10 points), +2 HT (20 points), and +3 Hit Points (15 points). They also have Alertness +1 (5 points) and Eidetic Memory (30 points), and the disadvantages Hidebound (-5 points) and Indecisive (-10 points). In a modern-day setting, they might have Inconvenient Size, and would very probably be Confused. Mathematical and technologically related advantages are prohibited. To find the height and weight of an Atlantean character, calculate them for a modern human of ST 7 less, then add 2' to height and multiply weight by 2.4. It costs 93 points to play such an Atlantean in an Atlantis-based game.

Some Atlanteans may have Psionic powers, probably Psychokinesis or perhaps Telepathy, depending on the GM's detailed decisions about the campaign, and Racial Memory (p. CI42) might well also be a possibility. Good kings may have powerful immaterial spirits as Patrons (see ***GURPS Spirits*** for guidance on handling such), and vegetarianism as a minor Vow; their "better" subjects will tend to be Humble and Staid. For notes on Tech Levels relevant when determining skills, see p. 16.

Atlantis as a Mystic Symbol

One sign of the power of the Atlantis myth is the way that the name has actually become detached from the straightforward story, and has acquired a special power of its own. In short, "Atlantis" has become part of the vocabulary of magical thought.

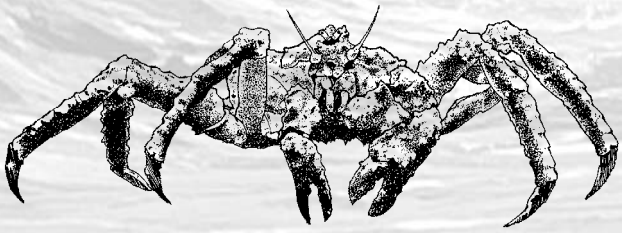
This process, perhaps, began in the first millennium A.D., when Plato's philosophy became the basis for an intricate and mystical school of thought known as Neoplatonism, which developed as an opponent to early Christianity (although the Christian Fathers also adopted much Platonic thought, and took the story of Atlantis quite seriously). The Neoplatonists preserved much of Plato's philosophy, but had little taste for mathematical physics, and their era had little use for Plato's political philosophy. Perhaps because they ignored the latter, they ascribed complex allegorical meanings to Plato's account (while simultaneously believing that it was literally true). For example, the Atlantean War was seen as symbolizing conflict between the spirits which animate the universe.

However, in the centuries when Atlantis was largely forgotten, it obviously had no place in theories of magic. It returned in the work of John Dee (see p. WWi68-69), the Elizabethan scholar, astrologer, and ideologist. Dee invented the term "the British Empire" as a label for the political-magical project he promoted; he seems to have seen the expansion of English power into the Americas, which he referred to as Atlantis, as a magical act. It can be difficult to decide where metaphor ends and literal meaning begins with Dee, but he does seem to have seen the idea of Atlantis, in some sense, as a mystical vision. His ideas naturally had some appeal at court; the suggestion that English expansion was matter of destiny (and that Britain had a prior claim to many of the western lands, because King Arthur discovered and conquered them first) could justify some profitable colonial schemes.

The magical image of Atlantis returns again with Helena Blavatsky's version of Theosophy, although most subsequent magical uses of the name have been quite literal-minded. For example, the notorious Aleister Crowley mentioned a society of Atlantean Adepts in his claims about magical traditions, and at least one supposedly Rosicrucian sect has claimed to preserve the original Atlantean fire-worship cult. Still, the mystical symbolism surely lurks behind many literal uses of the name.

The best idea is probably to treat Atlantis as TL3, but *advanced* in chemistry (and some psionic studies); see ***GURPS Low-Tech*** for more on such topics. In fact, Atlantean alchemical science has a large and effective mystical element, and the culture also uses astrology for effective weather forecasts; some descriptions make it seem the equal of any high fantasy magic-using culture, using "words of power" and spiritual energies. Atlantean flying and seagoing ships can be built under ***GURPS Vehicles*** as mostly TL3 designs, but with the options of TL6 metal armor (often expensive or advanced), TL11 Reactionless Thrusters, TL12 Contragrav Generators, and Herbivore Bioconvertors (nominally TL10, but in this case the product of weird psychic science, and supplying energy directly to the contragravity and thruster systems rather than producing electricity or mechanical power).

Atlantean reactionless thrusters can also double as crude force-beams; in combat, they are "fired" with a specialization of Beam Weapons skill, and have SS 20 and Acc 1. Any thrust diverted from moving the vehicle is applied to the target, with a 1% reduction for every yard of range (so such attacks are useless beyond 100 yards). Every 10 lbs. of force applied is equal to one point of ST, which can only be used to push or shake a target.



Atlantean History And After

There is some suggestion that the Atlanteans were wiped out because they turned to black magic, which adds an extra twist to this story. At times, the extended version of the Theosophist account, from writers such as W. Scott-Elliot, reads like a bad high-fantasy epic, full of dubious racial stereotyping. The "subraces" included the red-skinned Toltecs (who were ruled by hereditary kings who lasted while they remained wisely in touch with their supernatural mentors, but who eventually fell to a revolt of black magicians), the warlike, brutal Turanians (ancestors of the Aztecs and the Mongols), and the quarrelsome, energetic Semites (who originated in what is now Scotland and Ireland, and ruled the City of the Golden Gates in southern Atlantis). Most of Atlantis sank 800,000 years ago (while at the same time, various islands rose and became larger, eventually developing into the modern continents); another catastrophe, 200,000 years ago, reduced it to two islands, one of which sank 80,000 years ago, leaving just "Ruta," or Poseidonis, which Plato described, and which finally sank around 9500 B.C.

When Atlantis fell, the survivors became the ancestors of the Fifth Race – ourselves. But we are not going to be the last. This rather depressing cycle of psychic inspiration and physical catastrophe has a couple more spins to go yet. In fact, the Theosophists say that our descendants, the Sixth Race, will find themselves living on part of Lemuria, which will rise from the Pacific during the cataclysm which wipes us out.

The Crystal Domes

But Verne, Donnelly, and the Theosophists all kept Atlantis firmly in the past, its only possible remains today thus being ruins and lingering anthropological or spiritual traces. In the absence of gratuitous magic or miracles, the idea that Atlantis, still seen as a sunken land, might have survived as some kind of active society depended on science and technology offering some assistance. Coincidentally, this was coming.

Engineers had been experimenting with functional submarines for some time (see pp. 64-65), and Verne had extrapolated these possibilities; in fact, real-world engineering was not so very far behind him. Furthermore, Victorian architects had mastered the art of enclosing increasingly large spaces in spacious, robust frameworks, not least giant glasshouses such as the Crystal Palace exhibition hall in London. The image of underwater cities, with breathable air contained within some kind of dome or shell, was probably a product of all this. The idea that Atlantis could somehow have been transformed to this form followed close behind.

(Incidentally, the idea of *biologically* adapting humans to life underwater was too extreme for anyone at this time; the earliest known story with any such idea dates to 1929.)

What If Atlantis Hadn't Sunk?

Imagine an alternate history uncannily like our own, but with one great difference; Plato's Atlantis was real, but it never sank. Rather, its armies were beaten back from the Mediterranean, and it remained as just one element in the historical scene.

For plausibility, Plato's dating would need to be adjusted, perhaps placing the height of Atlantean power around, say, 1000 B.C. The land could not be quite as large as Plato described; perhaps it could be around the size of Britain, and lie a few score miles west of Gibraltar, or take the place of the Canary Islands. The GM would then have to decide on some other features:

History: Atlantis could hardly be a major player in events without changing history beyond recognition, so it is probably best to assume that, after the war with Greece, it lapsed into millennia-long decay. It may have suffered conquest by Rome (although the Romans were never great sailors), Islam, or one or more colonial-era powers. However, it would probably be interesting to have the Atlanteans preserve large fragments of their ancient culture, in which case any conquests would have to have been short-lived at best.

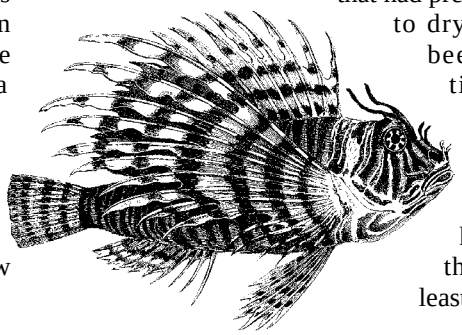
Religion: Atlantis would likely have converted to Christianity or Islam at some point, especially if it was conquered. However, it might be more interesting if it could somehow preserve its ancient cult of Poseidon. Perhaps fragments of the old religion have been incorporated into a syncretistic heresy?

Technology: Rather than make it a bustling modern power, it would probably be most interesting to keep Atlantis slightly impoverished, though not Third-World poor. The Atlanteans could have some access to modern technology, and a tourist trade based on their ancient, crumbling ruins. Think of modern-day Egypt, or Greece if you want a little more prosperity, Central America for a little less.

Now imagine branches of McDonald's among the buildings of the Outer City, Coca-Cola cans floating in the Circular Harbors, scholars coming to study the ancient architecture and the unique language, and backpackers wandering the streets. (Permits to visit the rural areas are strangely hard to acquire, though.) The government reminds the people of ancient glories to distract them from modern troubles, and tolerates too much pollution and poor safety standards. Meanwhile, earthquakes are frequent; the population shrug them off, but seismologists comment that much of Atlantis's geology is strikingly unstable.

The first "Domed Atlantis" story was written by André Laurie, an associate of Jules Verne, in 1895, and more followed in subsequent years. For example, *The Scarlet Empire,* by David M. Parry, published in 1906, was a blunt satire of socialism, with a domed Atlantis where everyone has to eat the same meals and speak only a fixed number of words per day. (The hero ends up accidentally breaking the dome and destroying Atlantis.) In 1928, Sir Arthur Conan Doyle (the creator of Sherlock Holmes) added to the list with *The Maracot Deep,* whose heroes set out to explore the Atlantic in a bathysphere. Unfortunately, a giant lobster breaks their support cable, but they are rescued by Atlanteans, who turn out to be descended from a virtuous group who built a sealed community which survived when the catastrophe drowned their sinful compatriots. (The novel is not one of Doyle's best, with little plot until a supernatural being shows up to cause trouble and inspire a spiritualist moral at the very end, a considerable quantity of *very* bad science, and convenient shortcuts such as the bottom of the sea being covered by luminous organic deposits.) There are many other novels in this vein, though the idea is probably too dated for much use now (except in superhero comics – see p. 111).

There is also a small subgenre of stories which placed Atlantis, or perhaps an Atlantean colony, in some area that is still dry land, using it as the subject of "lost city" plots in the tradition that passed from Rider Haggard to the pulp magazines (and hence making it a natural subject for ***GURPS Cliffhangers*** exploration scenarios). One of the most successful was, again, by a Frenchman; *L'Atlantide,* by Pierre Benoit, which appeared in 1919 and placed Atlantis in the Sahara. The idea, based on a fringe archaeological theory, is that Plato got the story slightly wrong, and Atlantis was cut off from the rest of the world, not by sinking, but by a *rise* in terrain levels which caused a sea that had previously surrounded it to dry up. The book has been filmed several times. A variant of this theme places a modern Atlantean community in the Antarctic, perhaps hiding under the ice; this has been used at least twice.



In the Modern Age

The ideas and images pioneered around the turn of the century soon became popular, and soon after that, they became clichés. Atlantis has assumed a multiplicity of roles in fiction and fringe theories, both as a great power in the distant past and a secret in modern times.

Atlantis in Genre Fantasy

Theosophy and other fringe theories were of interest to all sorts of fantasy writers (for example, Edgar Rice Burroughs' Martian stories are saturated with images drawn from Theosophy), and the idea of a great civilization that sank below the sea in the course of a catastrophe had an obvious fantasy appeal. Furthermore, an ancient civilization lying before the beginning of recorded history was a useful setting for stories; as early as 1900, C.J. Cutcliffe Hyne wrote *The Lost Continent,* a tale of warrior-priests, mammoth-riding usurper queens, dinosaurs, and magic. Thus, Atlantis became a staple of genre fantasy, either by name or thinly disguised.

Even J.R.R. Tolkien made reference to the myth, as his history of "Middle Earth" includes references to a wondrous island in the west named *Númenor.* The Númenóreans were a proud people who eventually over-reached themselves under the influence of evil, sending a fleet to yet further lands which were prohibited to mortals, and Númenor was sunk beneath the waves as punishment. Thereafter, it was known as *Atalante,* "The Downfallen." Robert E. Howard used Atlantis by its own name; his "Conan" stories (the basis, of course, for ***GURPS Conan***) are set in a mythical "Hyborean Age" in which the sinking of Atlantis is fairly recent history, and cultural and material remnants of the lost civilization are still around for heroes to encounter occasionally.

These two (very different) treatments kept Atlantis ancient and lost, but Howard and other writers also made use of it as a place that still existed in the time-frames of some of their stories. (Howard's less well-known hero King Kull is an Atlantean.) Jane Gaskell and Marion Zimmer Bradley are just two writers who have followed this lead. For that matter, others have, like Tolkien, shifted Atlantis or its like into other fantasy worlds that may or may not be some sort of version of our own. For example, in Fritz Leiber's "Fafhrd and the Gray Mouser" stories, the island of Simorgya is explicitly described as the "Atlantis of Nehwon" (though the story involving it perhaps owes most to H.P. Lovecraft).

SF Versions

In addition to fantasy and straightforward (if melodramatic) adventure stories, some fairly rigorous 20th-century science fiction found uses for Atlantis. It could be depicted as a scientifically advanced civilization, or perhaps as the ancient outpost of an alien race. The catastrophe that destroyed it could be natural or man-made, and the plot could involve the discovery of remnants or relics of the Atlantean civilization, or time travel to the Atlantean past, or it could simply be set in Atlantis with no direct link to the modern world. Atlantis has been shown as fighting

wars (sometimes with Mars) using atomic weapons (leading to a man-made disaster), and remnants have shown up across the solar system and in other dimensions.

(Actually, pulp SF had its own symbol of civilization destroyed by overwhelming catastrophe, in the days when the asteroid belt was suspected of being a planet that exploded in the distant past. Stories about civilizations on such a planet often have an Atlantean flavor.)

A couple of time-travel and historical novels have also made good use of the Santorini Hypothesis (see below). While not as melodramatic as the full lost-continent imagery of traditional, mythic Atlantis, this vision of a Bronze Age culture lost in the mists of time has its own interest value.

Example: Atlantis and the Lens

One version of Atlantis shows up in E.E. "Doc" Smith's *Triplanetary.* In other words, Atlantis is part of the history of the Lensman universe. Exploiting this fact in a ***GURPS Lensman*** game might be tricky, but not necessarily impossible. Time travel is not known to the technology of the original novels, and may well be starkly impossible – if not, the Arisians and Eddorians would surely have exploited it – so an actual visit is unlikely. (Unless, perhaps, the old races were too well aware of time travel's deadly drawbacks; a too-clever scientist from Civilization's laboratories could blunder in where demons as well as angels fear to tread, opening such a campaign into a fourth dimension as Lensmen struggle to resolve this new threat to reality itself.) However, remnants of the Atlantean Age might show up to advanced scientific scans on Tellus, leading to archaeological research (under the watchful eyes of the Patrol) and much excitement. Could the forces of Boskone exploit what might be learned to develop continent-shattering technologies or new arts of social manipulation?

Atlantis in Dreams

Even if Atlantis isn't and was never *real,* that doesn't mean that it doesn't *exist.* Plato's story caught the imagination of its hearers with quite extraordinary effectiveness, and Atlantis is now part of the mental furniture of much of the human race.

In a game world where dreams and fantasies have power, or are given some kind of objective existence by the psychic power of the human mass unconscious, this may make Atlantis a place that characters can visit. Of course, it would have transformed over time from a shadow of Plato's tale to a gaudy modern Hollywood pseudo-classical city, forever saturated with decadence and pride while perpetually being overwhelmed by earthquake, lava, and flood. It would doubtless be dominated by a rumbling volcano, and might well display an odd mixture of technologies, being a place of swords and spears most of the time, but with the odd submarine or ray gun suddenly appearing and being taken for granted by the natives. For some sense of how to use such a locale in semirealistic games, see *What If Atlantis Hadn't Sunk?* (p. 17).

In Nomine: Atlantis in the Marches

In the setting of ***In Nomine,*** dreams are manifested in the "Marches," governed by the Archangel Blandine and the Demon Princess Beleth. Atlantis might even exist here as an independent Domain, an "escaped dream" in geographical rather than conscious form. (Not being worshipped, this originally pagan locale would not necessarily have suffered in Uriel's great crusade.) The popular legend involves few individual names, so its rulership would be uncertain, but bold mortal magicians who understand enough of how these things work might deliberately venture here in search of remnants of ancient secrets.

Archaeology Strikes Back: The Santorini Hypothesis

Atlantis might have slipped into the realm of dreams and trivial fictions, but it turned out that no one could trivialize a good story that easily. Just while novelists were first developing their ancient sagas, sunken ruins, and crystal domes, archaeologists and historians were literally digging up the basis for a new, serious view of Atlantis.

Minoan Crete

The modern science of archaeology was largely invented during the 19th century, and one of its first accomplishments was the discovery of the Greek Bronze Age. Working from hints in Homer and other sources (often taken to be pure myth by scholars of the time), excavators such as Heinrich Schliemann rediscovered cities such as Troy, on the shores of Asia Minor, and the Mycenaean culture of Greece itself.

Around this time, hints began emerging that there might be sites worth investigating on Crete, the largest of the Greek islands. Schliemann himself took an interest, and visited Crete, but when he negotiated to buy a possible research site, he discovered that, while the seller had told him that there were 2,000 olive trees on the land, there were only 600. He stormed away in a rage, and missed his opportunity.

In 1900, the British Arthur Evans did begin excavations, and rapidly discovered the remains of an entire culture, which he called "Minoan." This name came from Greek myth, which said that Crete had been ruled by a King Minos (who appears in the legends of Daedalus and Theseus, among others). What the culture called itself is unknown, as its language and script (known as "Linear A") remain unreadable. It seems to have slightly predated and perhaps dominated the Mycenaean culture of the mainland.

Minoan culture emerged from prehistory around 2500 B.C., and began building great "palaces" around 2000 B.C. These are substantial buildings for the period; the largest, at Knossos, covers 4.3 acres and is four stories high in places, in a city of 185 acres with an estimated population of 40,000. They are maze-like complexes (leading to suggestions that they inspired the legend of the Labyrinth), with rooms that appear to have been used for industry (stone carving, weaving, oil pressing and wine making, and pottery), storage, administration, and religious purposes. What they are not, is fortresses; if the rulers lived here, they had little fear of mass popular revolt. Likewise, there is no sign that the cities were fortified; this was seemingly a peaceful, perhaps unified land, not a cluster of squabbling city-states.

Its buildings were sometimes amazingly comfortable for the era, well-ventilated and with running water. Minoan art was rich and extensive, full of pictures of wild animals, "bull-dancing" in which acrobats somersaulted over the horns of bulls (probably a religious ritual), and men and women. Again, it has little in the way of warriors or bloodshed, though the main religious symbol seems to have been a type of double-bladed axe, the *labrys*; snakes also seem to have had some significance.

Minoan Crete appears to have begun to decline around 1450 B.C., and eventually to have fallen under the control of Mycenaean rulers from the mainland. Knossos outlasted the other palaces, but even under Mycenaean control, it suffered a final collapse around 1380 B.C. The collapse was not a peaceful process; there is evidence of major fires and other destruction in some of the palaces. The Minoans faded into dim myth, apparently giving their writing system to the Mycenaean lords; this hybrid script, "Linear B," was decoded during the 20th century, although that analysis remains somewhat controversial.

Revising the Minoans

Most archaeologists and historians have less complete information about their subjects than they would like, and hence end up making up plausible stories to explain what they do know. This is legitimate so long as everyone understands that there are gaps in the hard evidence, and arguing about and reorganizing these stories is a large part of the subject. However, some academics today would say that Evans was a little too enthusiastic about his storytelling. (He was also given to physically reconstructing and "restoring" his discoveries, which, while producing photogenic results, is completely against the more cautious ethos of modern archaeology.)

The Feminist Minoans?

Given the relative lack of detailed, specific evidence concerning Minoan civilization, it is not difficult for groups with pet theories to relate them to this ancient nation. That said, the idea of Minoan Crete as a feminist matriarchy does have a certain amount of evidence behind it.

Certainly, Minoan art shows a lot more female figures, apparently in active, "strong" roles rather than subservient places, than that of many ancient cultures. The firm evidence is thin – plenty of severely male-dominated societies have produced beautiful sculptures and pictures of women who were actually goddesses, whose role was unconnected with that of real mortal females – but it does seem that, at the very least, Minoan women had a major place in public worship, and in ceremonies such as the bull-dancing. Given the apparent importance of religion in Minoan society, with signs that this was a nation ruled from its temples, that suggests that women may have been unusually powerful here. Admittedly, Greek legend speaks firmly of *King* Minos, but the Greeks who told those tales were overwhelmingly patriarchal; the very idea of a society genuinely dominated by women would have been unthinkable to them. Even once the Minoan and Mycenaean Greek cultures had merged, Cretan sculptors may have depicted war-chariots, but some of those chariots were entirely crewed by women.

All of which has made Minoan Crete something of a favorite topic for feminists. Unfortunately, some of them have, perhaps, raced ahead of the rather skimpy evidence, claiming this as an idyllic matriarchal society eventually brought down by brutal Mycenaean males, and insisting that the lack of fortifications and relative shortage of military scenes in its art amounts to proof that it was pacifistic and egalitarian. (Some even insist that the double-bladed axe, a major Minoan symbol, was not a weapon but a tool.) Mainstream archaeologists are more cautious, pointing to evidence of male gods, as well as military activities and human sacrifice (admittedly perhaps mostly from the late, Mycenaean-influenced period of decline) – but as a setting for stories of Bronze Age feminism, Crete has, at the least, possibilities.

Starting with the legend of King Minos, Evans assumed that Crete was a male-run monarchy. (That said, he and those who followed him noted the presence of numerous female figures in Minoan art, which inspired subsequent feminist interpretations.) It was evidently wealthy, and excavations throughout the region began to turn up Minoan outposts, so the idea quickly emerged that the Minoans were master merchants. Greek legend said that Minos was the first king to organize a navy, and overseas commercial

expeditions would have needed protection, so the next obvious assumption was that Crete was a great sea power, channeling its military energies into a navy rather than an army. The label used was "thalassocracy," meaning a power based on rule of the seas.

An island empire, peaceful at home, assertive overseas, ruling the waves, and commercially successful, with a small army but a strong navy; it was an image that must have come easily to Victorian Englishmen like Evans. Some of it may be true. However, modern archaeologists, familiar with other Bronze Age powers that may have been related to the Minoans, read the signs slightly differently.

The Minoan "palaces" were clearly, at least in part, temples, with plenty of storage space. No one ever denied that Minoan culture was hierarchical, and if the lower orders didn't rebel, they must have been convinced that this would be a bad idea; the society probably had a strong central ideology. Rather than a wealthy trading empire ruled by a priest-king (with the emphasis on "king"), perhaps Crete was a theocracy, its temples taking a large part of its produce as tribute (stored in the palaces) and controlling much manufacturing directly, then redistributing the wealth down through the hierarchy to pay for all that wonderful art. The trade, the fleet (if any), the outposts; all may have been useful tools for the priesthood to further extend their power, and the glory of whatever deities they worshipped. These certainly included a powerful goddess, but contrary to some claims, there are also signs of male gods.

Incidentally, either a peaceful monarchy or an authoritarian theocracy can fit with various images of Atlantis; Plato gave it 10 kings, who came together for regular law-giving ceremonies. The importance of bulls in Minoan ceremonies hints at a precursor to Poseidon, to whom the bull was sacred. All this may just possibly be more than a coincidence.

What If Minoan Crete Had Survived?

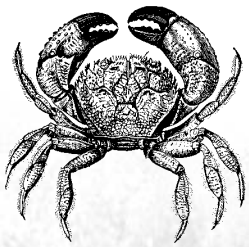
In an alternate-histories game such as the "Infinity Unlimited" setting described in ***GURPS Time Travel,*** it would be tempting to investigate the idea of a world in which Minoan Crete didn't fall. After all, at least one author (with a taste for the Santorini Hypothesis) has suggested that it was all a question of wind direction on the day that Santorini exploded. If the prevailing winds had carried the ash north, over Mycenaean Greece, instead of east, over eastern Crete and Anatolia, things might have been very different.

The snag is that changing the course of history that early rapidly generates too many incalculable possibilities – especially when, as here, we are focusing on a culture about which we know very little. It would also be a mistake to assume that Minoan Crete would have survived forever, or even for many more centuries; empires *do* fall, sooner or later. Even China, the archetype of imperial stability, has worked through numerous dynasties over the millennia, and suffered several dark ages; and China is bigger, with far more resources and fewer dangerous civilized neighbors, than Minoan Crete.

That said, Crete had fair resources, the protection of the sea, and an impressive culture. If the Mycenaeans *had* suffered from that ash-fall, it might have strengthened its thalassocracy, and then extended its power toward southern Italy and the Anatolian coast. Meanwhile, things might have been a little quieter on the coast of the Middle East; at the least a few crops might have been better, but also, there is some suggestion that the biblical Philistines were descended from Minoan refugees. It may be fair to guess that things might have been more straightforward on Egypt's northern borders, enabling Egypt to grow a little stronger but also more complacent. Akhenaten's monotheism might never have arisen, or it might have done a little better.

The birth of the Iron Age might then have seen three great empires facing each other across the eastern Mediterranean; the Minoans, the Egyptians, and the Hittites. Whichever of the two land-powers could ally with the sea-lords of Crete would have had a deadly advantage, but clever Minoan leaders could have played the two off against each other. Meanwhile, Greece would never become the cradle of European civilization, but would be the hinterland of the southward-facing Minoan power. From then on is anyone's guess.

The Egyptians and Keftiu



Meanwhile, research in Egypt has turned up interesting references to "Keftiu," an island "in the middle of the great green sea," which was first mentioned as early as the third millennium B.C., and which seems to disappear from the record by the end of the 15th century B.C. This, it seems fair to guess, was Minoan Crete. There is even evidence that at one point, the Egyptians over-painted some wall illustrations of ambassadors from Keftiu to replace Minoan costumes with a more Mycenaean style, politely recognizing that there had been a change of government in this foreign state. (Incidentally, the Egyptians tended to write about Keftiu as a vassal state, but this would have been routine national pride; they never actually exerted power that far over the seas.)

The Atlantis Issue

As early as 1909, one scholar suggested that the new discoveries on Crete raised an interesting possibility. This was an ancient land, a rival to powers on the Greek mainland, which collapsed quite suddenly, seemingly almost at its height. Could Plato have heard dim legends of all this, via Egypt or directly, and woven them into his account of Atlantis? It was, at the least, an amusing possibility, and less far-fetched than some quite respectable Atlantis theories. However, it remained just a curious idea.

Then, however, archaeologists began investigating a possible explanation for the decline and fall of the Minoans.

Santorini/Thera

Santorini, sometimes referred to as Thera, lies 70 miles north of Crete. Today, it consists of several islands, in a roughly circular shape: Thera itself (the largest), Therasia, and the small Aspronisi form a ring, within which Palea Kameini and Nea Kameini are still being built by the underlying volcano. For this is just a remnant; some time in the second millennium B.C., a single volcanic island here blew itself apart in an eruption comparable to the famous Krakatoa.

As was realized from the time of the first discovery of Minoan Crete, there was a Minoan outpost-community on this island at the time, which was of course wiped out. Logic and evidence say that the destruction could not stop there, however. Eruptions on this scale in areas of sea generate devastating *tsunamis* (giant waves), vast clouds of ash and acidic gas, and probably shockwaves and earthquakes. Anyone on Crete would rapidly have become aware of the event, and historians are only surprised that they find so little trace of it in the records of the civilizations of the time. So they go looking for more. (Various passages in the Bible, including the incidents around the Exodus from Egypt, are sometimes discussed.) All this suggests a possibility. If the eruption occurred around 1450 B.C., it may have destroyed the Minoan civilization.

The images are obvious. A tsunami smashing into the north coast of Crete would have annihilated coastal communities (and reached several miles inland), while earthquakes and shockwaves could devastate even inland palaces. (Direct damage aside, Bronze Age buildings had few fire safety measures, and lots of lamps and such.)

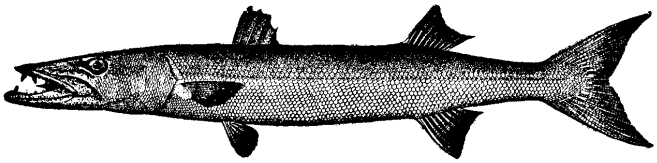
If enough of the fabled (if hypothetical) Minoan fleet was in harbor in the north at the time, or caught at sea in unlucky spots, it would have been reduced to splinters. Meanwhile, pumice and dust thrown up by the volcano will have settled over vast areas; research ships have found clear evidence of this on the bed of the Mediterranean. On land, such deposits would blanket fields, killing the year's crops, so immediate destruction would be followed by famine and social chaos. There is even specific evidence of this, along with more general signs of Minoan palaces suffering fire and collapse, with volcanic glass shards turning up in some ruins.

A simple reading says that this was the end of the Minoans, reduced to an island of starving refugees within a year. A slightly more complex version, based on interpretations of the archaeological evidence, says that their society may have survived, but been fatally wounded. If the eruption took place in, say, 1450 B.C., it might have effectively destroyed most of the palaces. Knossos, the greatest, partly survived and was eventually rebuilt, but with the fleet gone, it fell under Mycenaean control, probably by military conquest. There is evidence that the wind mostly blew the cloud of dust and ash from the volcano eastward, perhaps wrecking agriculture in eastern Crete while leaving the western part habitable; the result would be refugees and administrative problems to last a generation. However, even new rulers could not salvage the society in the end, and something – an earthquake, a second wave of conquerors, whatever – finally destroyed Knossos around 1380 B.C.

Crete as Atlantis

The first Santorini Hypothesis was thus that Crete itself was the original model for Atlantis. The Santorini eruption provided an explanation of the natural disaster mentioned by Plato, and the "Keftiu" references brought the Egyptian element back into play. (This is useful because there does not seem to be much other evidence of the Greeks preserving reliable accounts of the era of Minoan Crete, and especially of this specific subject; hence, it makes sense for Plato to have received the story from an area with written records stretching back that far.) The great palace at Knossos becomes the capital of Atlantis, and its control of the seas and eventual conquest by the Mycenaeans becomes the great invasion and war with Athens.

This actually fits together remarkably well. To the Egyptians, Crete would have been a great island power off to the northwest (while Atlantis was said to be to the west). The "great continent" beyond Atlantis, from the Egyptian point of view, would be Anatolia or Greece itself. The reference to the Pillars of Hercules may have been added by Plato, but in any case, many ancient peoples had ideas about great pillars holding up the sky, which were always sited somewhere vague and distant. The palace of Plato's Atlantis was on a low hill, some 3,000 feet across, midway along the island and a few miles inland – a fair description of Knossos. Other features of Plato's account make sense if, somewhere along the line of translations and transcriptions, numbers were exaggerated by a factor of 10, as could happen. Atlantis supposedly fell 9,000 years before Plato; Minoan Crete fell about 900 years before Solon. The central plain of Atlantis was about 350 by 230 miles, while the largest plain on Crete is about 35 by 25. Mountainous territory, multiple palace-cities sharing power, bull-rituals; all appear both in Minoan Crete and Plato's Atlantis.



Santorini as Atlantis

Subsequently, however, excavations on Thera showed that Santorini was not just the epicenter of the disaster; it was actually a significant Minoan colony. While not as large as the Cretan palace-cities, it probably supported well over 6,000 people, and archaeologists have found numerous richly decorated buildings. While the results of the eruption (and others since) make it hard to say for certain what the shape of the island was like in Minoan times, it may well have had a large, useful harbor. The Santorini colony was, perhaps, a highly prosperous mercantile town, and a "forward base" for Minoan commercial expeditions to the islands and mainland of Greece.

This lead to a new version of the Hypothesis; that Santorini itself was the model for Atlantis. After all, Crete was never completely destroyed and swallowed up by any disaster, and fell from power over generations, whereas this trading town was literally obliterated in one day, and its chief town, at Akrotiri, was substantial and wealthy enough for seafarers to report its destruction as a great catastrophe. This is not really a great change; it is unlikely that the Egyptians would have distinguished much between Crete itself and its island colonies, so references to a disaster at "Keftiu" could have meant either or both. It is perfectly possible to believe that Atlantis was a combination of Crete and Santorini.

The Problems

Every theory has problems, and the Santorini Hypothesis is just too much of a stretch for many people. Despite everything, it still depends on Plato acquiring an account full of accurate incidental details, and then deciding to work it into his philosophical parable. It depends on that account passing through a convoluted chain of records. It also has some serious logical holes.

To begin with the biggest: Minoan Crete was not wiped out by the Santorini eruption. Even the most dedicated believers can at most argue that the devastation caused by that event caused Minoan society an injury from which it never recovered, starting a decades-long decline. In fact, it turns out that the eruption did not even end the Minoan occupation of Thera. Archaeologists have now discovered unmistakable Minoan remains *on top of* the ash deposited by the eruption. In other words, Minoan power survived the disaster and came back.

Secondly, analysis of ash deposits and other evidence suggests that the worst results of the eruption were all carried much more eastward than south. There is, as mentioned before, evidence of heavy ash-falls (perhaps 8" deep) in eastern Crete, but not much around Knossos. Even the tsunamis may have been channeled by local conditions so as not to cause too much damage to Minoan communities. This would all have been bad for Crete, but probably survivable.

Meanwhile, the damage suffered by the Minoan palaces looks wrong. In short, most of them burned down. While earthquakes and shockwaves could trigger fires, it seems less likely with tidal waves. Human threats – raiders or conquerors – seem more likely.

But perhaps worst of all is the problem of dates. The decline of Minoan power seems to have started around 1450 B.C.; however, the great eruption has long been thought to have happened much earlier, maybe as early as 1520 B.C. Minoan pottery from the destroyed town is of a style dated not later then 1490 B.C., and the buildings, too, appear to date from a period well before the fall of the palaces. (Admittedly, Santorini seems to have had its own artistic styles.) Carbon dating is not terribly reliable for this particular period, but best estimates for organic remains from the Thera ruins again say 1500 B.C.

There is, clearly, a problem.

The Dating Game

At this point, though, it should be said that any discussion of Bronze Age Mediterranean history has a big problem; the dates are *always* controversial. Just to begin with, much of the standard system of relative dating depends on cross-references to an old list of Egyptian pharaohs and the length of their reigns, as quoted by later writers. This is skimpy enough, and scholars now suspect that it is seriously misleading. It has long been known that some listed pharaohs ruled at the same time as each other, either because Egypt was divided or because an heir was crowned and brought in to help run the country and learn the art of rulership while his father was still alive. Recently, it has been suggested that the 20th to 26th Dynasties of Egypt involved far more overlaps than previously thought, as civil wars split Egypt into fragments, and that the supposed chronology of the area has 250 spurious years. This would help in several areas. For one thing, the "Greek Dark Ages" supposedly consist of a period between 1200 B.C. and 950 B.C. in which very little seems to have happened; some historians would agree that they might not have happened at all. For another, this would resolve a puzzle about the biblical story of Joshua and the siege of Jericho, which seems, on the old dating scheme, to have taken place at a time when the city was more or less unoccupied (see p. PM65); the new scheme places Joshua's campaign at a time when Jericho was a busy town. Of course, it also makes life more complicated for other scholars, who tend to criticize it violently.

As already mentioned, carbon dating, the great advance in 20th-century scientific archaeology, is not at its best for dates around 1400 B.C.; the graphs of radioactive element levels, used for calibration, are mostly flat around this time, with odd peaks. However, these are not the only scientific dating tests causing trouble.

Two other tools that have recently been applied to this subject are Greenland ice-core tests and tree-ring measurement. Both are thought to be useful ways of dating major volcanic eruptions, which pump huge quantities of acidic chemicals and ash-clouds into the air. The former come down in Arctic snow, which is compressed into layers in the ice which can be counted and analyzed, while the latter cause extremely bad weather around the globe, reducing the growth-rates of trees, which can be detected in their rings. (Ancient bristlecone pines, and oaks preserved in Irish bogs, go back to the Bronze Age and can be examined.) Researchers who have investigated these two sources of information have produced confusion in Bronze Age studies.

Greenland ice-core tests show no significant acidity peaks between 1500 B.C. and 1400 B.C., but do suggest some kind of event in 1645 B.C. Meanwhile, statistical analysis of tree rings has detected an eruption – or rather, a couple of bad winters – in the period 1628 B.C. to 1626 B.C. This has led to attacks on the Santorini Hypothesis and the whole set of dates previously assigned (sometimes, admittedly, on limited evidence) to the eruption and to Minoan history in general.

However, the jump from acidity in Greenland and bad winters across the globe to an eruption in the Mediterranean is rather arbitrary. Not only can bad winters have multiple causes (even across an entire hemisphere), but there are plenty of volcanoes in the world. Indeed, it is questionable if Thera produced enough acid to explain the Greenland readings, whereas volcanoes in Alaska or Iceland are, all else aside, closer to Greenland. For that matter, these dating methods do not seem to show signs of other known major eruptions around this time, of Rabaul in Melanesia, Etna, or Vesuvius – or perhaps *they* explain the readings. Claims that these dates are highly precise also cast doubts, because, after all, 1645 B.C. is not the same as 1628 B.C. The next phase may be more-precise analysis of the chemical composition of that acidity . . .

An entire ***GURPS Time Travel*** campaign could probably be built around attempts simply to straighten out the question of Bronze Age dating. (The PCs would have to deal with unpredictable conditions and translation difficulties while on missions, and probably with hostile and angry scholars with pet theories while at home.) And until time travel does become available in the real world, the questions of the dates of and the reasons for events on Crete and Santorini remain wide open.

Other Theories

Interesting as the Santorini Hypothesis might be, it is not and has never been the only Atlantis explanation in circulation. Even leaving aside the raw supernatural stuff, and the relatively simple ideas involving areas of the Western Mediterranean, the list of theories that have been taken seriously by *someone* in relatively recent times is impressive. It seems that *everywhere* may have been Atlantis, and anywhere has probably been proposed by *somebody.*

Atlantis in Northern Europe

As far back as 1675, a Swedish scholar, Olof Rudbeck, spent several volumes combining references in Homer, Plutarch, and Norse poetry to prove that Atlantis was in Sweden. This sort of idea has been resurrected in recent years, in Jürgen Spanuth's *Atlantis of the North,* which declares that the 9,000 years of Plato's account was a mistranslation of the same number of lunar months, and places Atlantis in Heligoland, an island in the North Sea which has been subject to severe erosion, in around 1200 B.C. (Spanuth equates orichalcum to amber.)

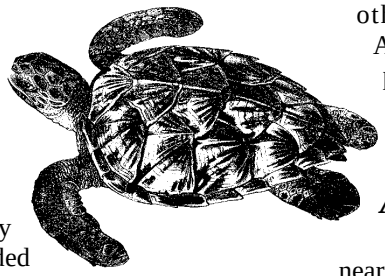
"Northern Atlantis" theories were sullied by association with the Nazis, who mingled them with stories about Thule (p. 32), but they make as much sense as most; after all, a power there would have lain "beyond the Pillars of Hercules," from the Greek point of view, and there is plenty of coastal territory vulnerable to natural disaster (and there was more in the distant past; see pp. 31-32). However, archaeology has not found much trace of imperial powers in the region in any appropriate period.

Atlantis in Britain

The theories of Francis Wilford (published in 1805) held that the continent of Atlantis was once the land-bridge between America and Britain, that the Old Testament actually occurred there, and that King Albion of the Druids led the survivors to Britain after the sinking (which may have been the Biblical Flood). He supported his thesis with a mass of ancient Sanskrit texts, which turned out to be forgeries created by natives eager to take his money.

These theories may have influenced the English mystical poet William Blake, who refers to the Atlantic Continent and King Albion in "The Marriage of Heaven and Hell," "Jerusalem," and "America."

But even Blake pales before William Comyns Beaumont, a staff writer on Britain's *Daily Mail* (and uncle of novelist Daphne du Maurier). After retiring, in 1949 he published a book, *The Riddle of Prehistoric Britain*, which identified Britain as Atlantis. And the Biblical Holy Land. And the Aryan Homeland Thule. And Egypt. And ancient Greece and Babylon. This British Atlantis "sank" when a comet hit the earth in 1322 B.C. and shifted the climate to turn Britain from a temperate subtropical paradise into, well, Britain. The jealous conquering Romans systematically robbed all of Britain's ancient monuments like the Parthenon and re-erected them elsewhere. This might form the basis for an *unusual* variant ***GURPS Imperial Rome*** campaign, featuring the PCs as Roman architectural pillagers or desperate British heritage-defenders.



Ancient Subsidence

There was some large-scale land subsidence in the English Channel and the North Sea at the end of the last Ice Age (see p. 32). Earlier than that, the Mediterranean Basin was apparently more or less dry, eventually being flooded when the barrier across the Straits of Gibraltar broke (doubtless spectacularly). Some theories link Atlantis to memories of these very ancient lands; a few suggest that they were actually the homes of major civilizations.

Atlantis in the Caucasus

Given that the "Pillars of Hercules" might be something other than the Straits of Gibraltar, and that place names are sometimes duplicated in Greek sources, some writers have turned the map around and placed Atlantis beyond the seas to the *east*, rather than the west, of Greece – on the far coast of the Black Sea, in the Caucasus. These theories sometimes turn into vast epics of ancient racial migrations, with at least one 18th-century version placing the *original* Atlantis in Spitsbergen before the Earth cooled and its inhabitants migrated south. With recent serious archaeological work on the ancient flooding of the Black Sea (see p. 31), another round of Black Sea Atlantises may be due.

Atlantis of the Eastern Seas

It has been pointed out that, along with the vagueness of the "Pillars of Hercules" reference, to Greeks such as Plato, the "Atlantean Sea" could mean any of the open oceans beyond the regions they knew; after all, they were all assumed to form a great ring around the lands of the known world. Thus, the term was sometimes applied to *eastern* seas.

So it is perhaps not surprising that some theories have placed Atlantis in the Arabian Sea. At least one combined this with a westerly Atlantis, claiming that the legend was based on a lost land to the east *plus* a region of North Africa which was linked to Sicily by a land bridge. Other writers have located Atlantis in Sri Lanka. Others again have gone even further afield, suggesting that Atlantis lay in the South China Sea – another region of continental shelf that was above water at the end of the last Ice Age.

Atlantis in Nigeria

Between 1908 and 1926, an English and a German writer allied to place Atlantis in Nigeria, on the West African coast. (This is more remote than most previous African Atlantises, which tended to be on the northern coast – though one 17th-century writer placed it in South Africa.) The evidence for this included profuse vegetation, blue-clad natives, copper ore, and elephants (which are, in truth, present in Plato but missing from most other candidates). However, having placed Atlantis in the real world, they proceeded to proclaim that its culture (indeed, all civilization) derived from a lost continent in the Pacific.

Atlantis in Anatolia

Two recent theories have placed Atlantis on or near the coast of Anatolia, in modern Turkey. The first says that Atlantis was actually Troy, the city of Homeric legend that Schliemann rediscovered in Victorian times (see pp. PM83-84). Swiss archaeologist Eberhard Zangger suggests that stories of the Mycenaean-Trojan conflict reached Egypt and were transmitted down the centuries, returning to Greece with Solon. (Ironically, of course, Solon and Plato would have heard countless stories of the Trojan War, but had no reason to connect them with this Egyptian account.) Zangger adds evidence of a catastrophic landslide at the Greek city of Tiryns to provide the necessary disaster.

A second recent idea is that Atlantis was actually the city of Sipylus, also known as Tantalus, supposedly 30 miles inland from the Turkish port of Izmir. Ancient writers claimed that Sipylus fell into a chasm which then filled with water, becoming a lake; British archaeologist Peter James thinks that he has located the site, now dry again, but has not been able to dig there. He also believes that Solon picked up the same story in Anatolia, for Plato to hear and embellish, and that "Tantalus" and "Atlantis," which share a linguistic root, are effectively equivalent.

Atlantis in the Andes

More distant versions of Atlantis are not dead. J.M. Allen claims that it was a copper-mining city on a lake in South America, which sank in torrential rains in prehistoric times. Trade in metals between the Mediterranean and the Americas this far back would certainly change modern views of the ancient world.

Atlantis in the Antarctic

Last, there are writers who have Atlantis now hidden, not under the sea, but even more securely under the Antarctic ice. This is definitely fringe science, which usually brings in the idea of periodic "Pole Shifts" in which the Earth pivots wildly, or at least the suggestion that continents sometimes move around the globe vastly more swiftly then any respectable theory of continental drift would allow. At the very least, it requires vast differences in the Earth's climate in relatively recent times. It also tends to invoke a number of old maps, which are supposed to show the shape of the continents (including Antarctica) in far more detail than was known at the time they were drawn, claiming that they were based on ancient, Atlantean-era knowledge. Of course, an Atlantis hit by fast glaciers or a sliding ice-cap would be pulverized, but for game purposes, GMs can fudge things with ice caverns as Atlantean redoubts, or just set the whole campaign in a pseudoprehistory when the temperate Antarctic was a land fit for adventure.

Other Media

Atlantis in the Cinema

Filmmakers rarely miss a popular trick, and Atlantis offers them some interesting possibilities. The only drawback in the early days of the cinema was that the depiction of an entire fictional city (or continent) could be a little expensive and difficult for the special effects department. Benoit's *L'Atlantide* (see p. 17) became a silent movie (in French) in 1921, while a German production in 1932 was made with German, French, and English-speaking casts simultaneously. An unsuccessful Hollywood version, *Siren of Atlantis,* followed in 1948, and a French-Italian production completed the set in 1961. Meanwhile, the prewar Saturday serials used the name of Atlantis at least once. Also in 1961, the famous producer George Pal came up with *Atlantis, the Lost Continent,* which featured a Greek fisherman hero, a princess named "Antillea," quasi-Nazi Atlanteans, submarines, evil magicians, and ray guns. It is sometimes called Pal's worst film. The 1978 *Warlords of Atlantis,* with its re-use of the old "Victorian explorers discover aquatic Atlantis" plot, is now largely forgotten.

Atlantis has thus not fared well in the cinema up until now. It may be interesting to see if increasingly advanced special effects or animation will serve to improve matters. (At the time of writing, Disney is about to launch an animated Atlantis movie.)

Atlantis in Comics

Like every other theme that was popular in pulp fiction, fantasy, or SF, Atlantis found its way into the superhero comics, where it naturally assumed a flamboyant form. Both the major American publishers fielded superheroes (Marvel's Sub-Mariner and DC's Aquaman) who originated in a submerged version of Atlantis, and who could therefore breathe water and otherwise operate very effectively in the depths. (Both, for some reason, were declared to be Atlantean royalty.) Indeed, DC's writers found themselves having to explain the presence of multiple seemingly incompatible versions of Atlantis in their universe's shared backstory.

While the comic-book Atlantises are mostly just versions of the old pulp-SF sunken city image, the colorful and dramatic images involved have doubtless helped maintain Atlantis as a recurrent theme in popular culture.

The Bimini Road

To the excitement of Atlantis-believers, there have been reports of sightings of ancient buildings or roads beneath the waters of the Caribbean. These reports usually involve the Bahamas, although sometimes the coast of Mexico is mentioned. The ruins are said to include terraces, plazas, and stairways. There are even tales of great underwater pyramids, although these reports are widely reckoned to be misinterpretations of sonar images of natural undersea ridges.

The most likely basis of most of these tales is the "Bimini Road." This appears to be a large, smooth causeway 20 feet below the surface and hundreds of yards offshore from Bimini, westernmost of the Bahamas islands. It is over 600 yards long, and is made up of stone blocks about 15 feet square and 3 feet thick, in a single layer. The "road," clearly visible through the water from the air, bends through more than a right angle at one end, then fades away.

Actually, the Bimini Road resembles "beachrock" – calcium carbonate which precipitates out of warm water, then erodes and cracks in strikingly regular patterns. But this doesn't mean that humans couldn't use beachrock as a building material – and the "road" is much longer than other beachrock deposits in this area. And at least one piece of what appears to be worked stone has been recovered from the site by divers.

One other oddity has shown up on the seabed a couple of miles from the "road." This is a collection of pieces of worked marble, not native to the area. At a guess, this could be ballast, dumped by a modern ship – but marble would be an odd and expensive choice of ballast.

At the very least, the Bimini Road is a curious freak of geology. If it is man-made, it needs some explanation. That area of seabed was last above the surface over 4,000 years ago. There were no known stoneworking cultures in the Caribbean at that time. The words "Atlantean outpost" would be sure to come up.

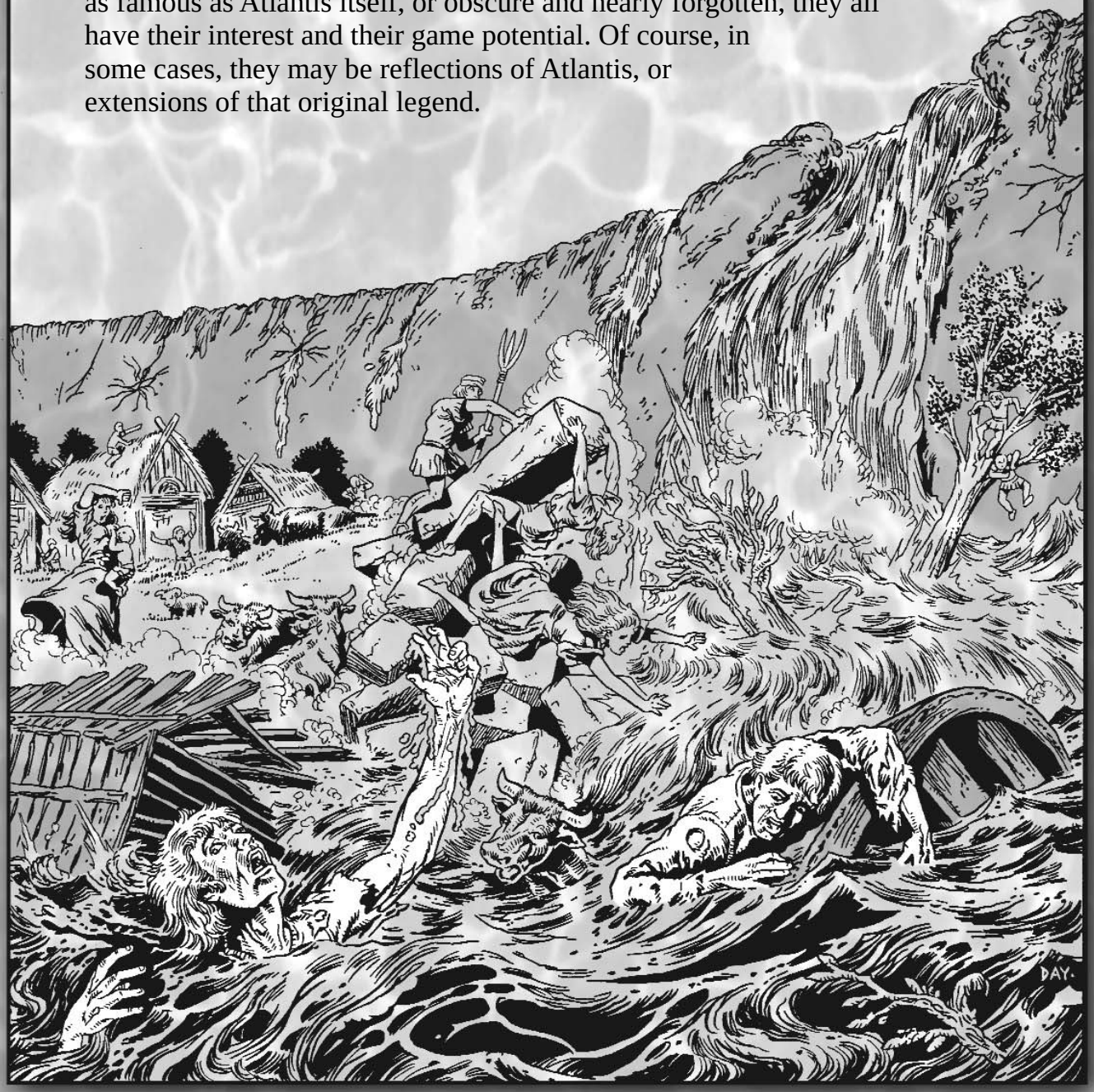
This may also be the place to mention that undersea formations that *might* be ruins have shown up in other seas too. Notable examples include the "undersea pyramids" possibly detected off Japan.

CHAPTER TWO

THESE WE HAVE LOST

In fact all that is needed to make the assortment complete is a lost-continent story based on the premise that no lost continents ever existed.
– L. Sprague de Camp, ***Lost Continents***

Atlantis is not unique. The "Lost Land" motif recurs elsewhere. So this chapter ventures further out, into other myths and stories. Whether almost as famous as Atlantis itself, or obscure and nearly forgotten, they all have their interest and their game potential. Of course, in some cases, they may be reflections of Atlantis, or extensions of that original legend.



The Dream of What is Lost

There are three ways to explain the recurrence of the myth of the lost and sunken land. The first is simple coincidence; given a large and often mystifying world, and especially its vast and inhospitable oceans, with their tides and storms, the idea of a lost land or two was bound to occur to more than one person. However, it does seem to have a particular appeal.

The second is literal-minded. Perhaps all these legends exist because there *was* once a great empire, or island, or city, which suffered some great catastrophe. In its wildest form, this explanation can shade into the whole ancient-astronaut school of pseudoscience. (Rational scientists would agree that the sudden loss of an entire continent-sized island is a little implausible.) Or it can arise from biblical literalism; fundamentalists can point to the Old Testament story of Noah's Flood as evidence that the whole world was once drowned as a punishment for sin. At its calmest, however, this sort of explanation can be almost dull. Floods *do* happen, and there is plenty of archaeological evidence of local but nonetheless spectacular catastrophes in various areas. Accounts of such events could easily move through the realm of folk tales into myth. (The Santorini Hypothesis, pp. 19-23, obviously fits in this category.) Anyone who wants to keep this sort of explanation on the extreme side can talk about very ancient stories, or even racial memories, of vast prehistoric catastrophes such as the flooding of the entire Mediterranean Basin at the end of an Ice Age.

The third explanation is psychological. It makes Atlantis and the like into symbols, of one sort or another. The world is full of secrets and questions, and the human mind buries countless images in the depths of memory, sometimes permitting them to surface at unexpected moments. Similarly, most theories of magic claim that it is a body of ancient secrets, now hidden by time and misinformation. Thus, the idea of something rich and splendid, lost beneath unstable and treacherous waves, has a certain power. The tale of the destruction of Atlantis is appealing as an image of pride subject to divine punishment, or human glory proving feeble before the destructive power of nature, especially if the Lost Land was full of sinful or arrogant individuals.

Thus, the Lost Land can have multiple uses in games, from background feature, through interesting place to visit, to symbol of mystery. This chapter can be taken as a catalog of variants.

Celtic Legends

Otherworld Islands

As ***GURPS Celtic Myth*** explains (pp. CM67-69), the ancient Celts, natives of lands facing the wild Atlantic Ocean, incorporated numerous islands into their legends. There is often an essential feeling of the uncanny about these places – a sense that they are not entirely part of the real world. Time may pass differently there, and confusing mists may rise from the sea with no warning. It is perilous to approach such islands closer than the ninth wave from the shore, as this means entering the "Otherworld." The supernatural Sidhe sometimes aided folk whom they wanted to visit these islands by providing them with enchanted boats (sometimes of crystal or amber), or horses that could gallop across the waves. Such transport *might* make visits safer, at least in some ways.

Perhaps the best-known supernatural island in early Celtic myth is Tir Na n'Og (also written "Tir-Nan-Og" and in several other ways), whose name means "The Land of Youth." This was described as a delightful land of plenty, but with the traditional drawback of faerie regions; a mortal spending a few days or weeks there might return home to discover that years or centuries had passed. Indeed, one hero returned home, dismounted from the horse that had carried him (despite his faerie lover's warning), and instantly aged 300 years. Other such islands included Tir Bo Thuinn, the "Land Beyond the Wave," and Annwn, which may be related to the Arthurian Avalon (p. 30).

The Christian Era

Even after the fall of Rome and their conversion to Christianity, the Celts continued to tell strange tales of lands beyond or beneath the sea. Doubtless, some of the old legends survived in Christianized form, and in any case the Celts were still living on the edge of the wild ocean.

Ys

The legends of Brittany (the Celtic region of north-west France) tell of the city of Ys ("Caer Ys" or "Ker Is"). It is associated with the fifth-century King Gradlon, about whom various tales are told; that he was a traveler who came to Brittany from Cornwall in England, that he had a love affair with a faerie in his younger days, but later offended her (perhaps by his conversion to Christianity under the influence of various missionary saints), and so on.

The legend also says that he built Ys to please his daughter Dahut (or Ahes). It was a beautiful city, located in the Bay of Douarnenez, on a site that actually lay below sea level, or at least below the highest spring tides; thus, it had to be protected by a great sea wall. There was one great sluice gate in this barrier, for which Gradlon kept the only key on a chain around his neck.

The legends vary in their descriptions of Dahut, but most agree that she was immoral and lecherous, and many claim that she was a sorceress, perhaps under the influence of her father's vengeful faerie lover. In one version, she conjured a dragon to capture passing ships on behalf of the city, bolstering its wealth. Another story claims that Dahut would call a new lover to her private tower or castle every night, obliging each to wear a mask so that he could not see her face; however, the mask was enchanted, and would strangle the unfortunate victim at dawn. Presumably, however, Gradlon was kept blissfully ignorant of the worst of his daughter's hobbies.

One day, however, a traveler came to Ys, a handsome knight or prince dressed all in red. Dahut became passionately enamored of him, which was unfortunate, as he had deeply malicious intentions; one version says that he was in fact the Devil, sent by God to punish the city for falling into wickedness. (Another says that Dahut deliberately conjured up a demon lover.) One night, at the height of the Spring tide, he persuaded Dahut to steal the key from around her sleeping father's neck; then, he (or Dahut) slipped out and opened the sluice gate, flooding the city.

One of the few people to escape the catastrophe was Gradlon himself, who naturally had use of a good horse. At first, he carried Dahut with him, but as the waves bore down on the pair, his confessor, Saint Guenole, appeared at his side to tell him that he could only be saved if he cast aside the cause of the trouble: Dahut. Eventually Gradlon was persuaded, or Guenole pushed Dahut off the horse himself, and the king survived while his daughter vanished into the sea.

Gradlon set up his new capital in the town of Quimper, where his statue still stands in front of the cathedral. The legends add that fishermen on the Bay of Douarnenez still sometimes hear the bells of lost Ys ringing beneath the waves, and the highest tides are called Saint Guenole's Tide. Some also say that Dahut was transformed into a mermaid or sea-spirit, and that she still haunts the bay, perhaps guarding her city, perhaps luring sailors to their doom. Legends also claim that Paris itself was named because it was a mere imitation of the lost beauty of Ys ("Par-Ys" would mean "Like Ys"), and that Ys will one day rise again; one Breton saying suggests that, on that day, Paris will be engulfed.

Perhaps not surprisingly, some modern pagans claim that this rather misogynistic tale is largely Christian propaganda that slanders Dahut. They see her as a last champion of the old religion in the face of puritanical Christian persecution, and the destruction of the city as a curse called down by her enemies. She may even represent an aspect of a pagan goddess, now dwelling in the sea as she awaits the prophesied restoration of her city.

The Arthurian Legends

The extensive legends of King Arthur and his knights (see ***GURPS Camelot***) clearly owe a great deal to the older Celtic mythic tradition. One sign of this is the recurrent appearance of supernatural or vanishing islands.

Lyonesse

Among the noted knights at Arthur's court was Sir Tristram, who was, according to some versions of the stories, the son of the king of Lyonesse. This, it seems, was a land that once existed between Cornwall (the far south-western peninsula of the British mainland) and the Scilly Isles, which today lie about 25 miles off-shore. Cornish tradition declares that Lyonesse supported several towns and 140 churches.

The legends also suggest that the drowning of Lyonesse was a sudden, catastrophic event; some versions relate it to the end of Arthur's reign, claiming that the region, or at least the land route leading to it, sank when the forces of the treacherous Mordred attempted to invade it. As in the case of Ys, one survivor managed to outrun the flood on horseback; in this case, it was a man named Trevilian, whose descendants, the Cornish Trevelyan family, have a coat of arms showing a horse emerging from the water.

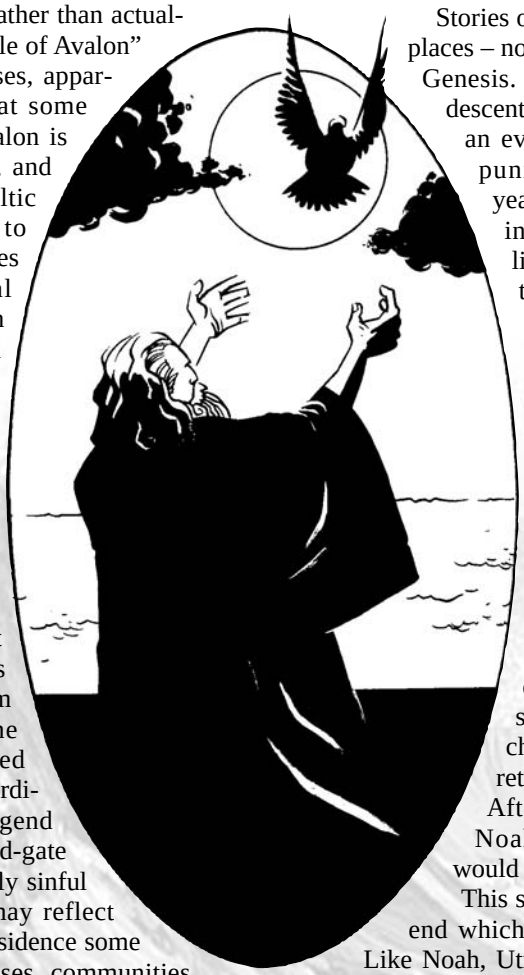
Traditionally, this legend has been supported with material evidence. The Scilly Isles are referred to in some Roman-era texts as a single island, or at least as much fewer in number than the present group. There are also some signs that they were indeed once linked by dry ground in early historical times, including what seem to be stone walls beneath the sea. (However, these may be ancient fish-weirs.) On the Cornish coast, St. Michael's Mount (see p. 36) may have been a part of the mainland as late as the 11th century, and old records claim that it was once several *miles* from the sea, and surrounded by forests. Realistically, all this probably suggests, at most, local subsidence and erosion, combined with folk memories of long-term shifts in the coastline, rather than the loss of a county-sized region, but it does imply that legends such as Lyonesse need not be *purely* fantasy.

Avalon

At the end of the Arthurian cycle, Arthur himself is mortally wounded in battle. However, rather than actually dying, he is taken away to the "Isle of Avalon" by a group of benevolent sorceresses, apparently to be healed and to return at some future date when he is needed. Avalon is thus depicted as a place of magic, and also an earthly paradise in the Celtic tradition; it may well be related to Annwn (p. 28), although some stories associate it with the entirely real Glastonbury Tor, a hilltop town in the southwest of England which had ancient religious associations and which was surrounded by marshes, and hence rated as an island, in medieval times.

Lost Towns

Celtic mythology incorporates a whole tangle of further tales regarding individual cities or towns that were lost beneath the sea. One was Cantre'r Gwaelod, "the Bottom Cantred," a substantial area (some say a city, or a region of 16 walled towns) supposedly sunk beneath Cardigan Bay, to the west of Wales; legend blames this loss on a drunken flood-gate supervisor, as opposed to the actively sinful princess of Ys. This story again may reflect genuine experiences of flood or subsidence some time in the Dark Ages. In other cases, communities were supposedly lost beneath Welsh lakes, such as Lake Llangorse, which allegedly drowned a great noble's hall in an act of supernatural vengeance for a murder generations earlier. One common story is that the church bells of a lost town can sometimes be heard, perhaps rung by ghosts, perhaps simply moved by storms; the supernatural versions of this legend may suggest that the sound foretells disaster.



Two other points perhaps should be mentioned here. Firstly, stories of fairy islands around the coast of Britain survived well into the Middle Ages; there were stories of invisible inhabitants coming from one of them to trade in Milford Haven, in Wales, a mere couple of centuries or so ago. And secondly, parts of the coast of Britain, like many other coasts, *are* subject to natural erosion, which *has* swept away entire towns over time; Dunwich, on the coast of East Anglia (not actually a "Celtic" region), was a major port in the Middle Ages, and is now entirely lost. The name was later borrowed by the American writer H.P. Lovecraft for a far more sinister, albeit inland, community. (Ironically, the town Lovecraft very likely based *his* Dunwich on is now under the smooth waters of the Quabbin Reservoir in upstate Massachusetts.) Conversely, some areas suffer sedimentation rather than erosion, and some other major medieval ports are now several miles inland.

Noah's Flood (and Others)

Stories of catastrophic floods turn up in many places – not least, of course, the biblical book of Genesis. Noah, the son of Lamech, ninth in descent from Adam, was a righteous man in an evil age, which God had resolved to punish. (Incidentally, Noah was 600 years old at the time; like many figures in Genesis, he was immensely long-lived. Soon after Noah, God decreed that life-spans should be shorter.) So God instructed Noah to build an ark, on which he, his wife, their three sons (Shem, Ham, and Japheth), and their wives survived the ensuing deluge. To repopulate the Earth, Noah brought seven pairs of every "clean" beast and bird, and two pairs of every "unclean" beast. The rains lasted for 40 days and nights, after which the Earth remained flooded for 150 days. The waters then abated, leaving the ark resting on Mount Ararat. However, they took some time to drain completely; Noah checked by sending out a dove, which returned with a newly grown olive leaf. Afterward, God made a covenant with Noah, promising that the catastrophe would never be repeated.

This story seems to echo a Babylonian legend which appears in the Epic of Gilgamesh. Like Noah, Utnapishtim was instructed to build an ark to survive a divinely sent flood. However, there are significant differences; the Babylonian flood resulted from a disagreement between several gods, whereas Genesis makes it clear that there is just one. Further, Utnapishtim ends his story admitted to the ranks of the immortals, while Noah has the job of restoring the Earth. In Sumeria, Utnapishtim was called Ziusudra.

There are other echoes elsewhere. Greek legend has Zeus sending a flood to destroy the new, upstart human race. However, the titan Prometheus warns his human son, Deucalion, who builds an ark on which he and his wife float for nine days and nights. When the flood recedes, Deucalion renews the human race with the aid of the gods. (The details of this story vary, and later versions were probably influenced by Middle Eastern tales.) In a Zoroastrian myth, now partly lost, Yama, the first herdsman and leader of mankind, is told by the good god Ahura Mazda that a great winter is coming to purge an overcrowded world; thus, Yama builds, not an ark, but a three-story barn to hold the animals that he will need to restore the Earth.

The Black Sea Inundation (and Others)

In the 1920s, archaeologists working at Ur, on the Euphrates, discovered traces of massive flooding in the area around 3000 B.C. This led to suggestions that this (either a single vast flood or a pattern of repeated lesser catastrophes over a few centuries) may have been the source of the biblical and Babylonian flood legends. This explanation has never been universally accepted; even for those who want a single root event, there are too many alternatives, from storm surges in the Persian Gulf to giant waves following the Santorini eruption (pp. 19-23). However, it has been quite popular.

Recent research has produced a different explanation, reaching yet further back. It appears that, after the end of the last Ice Age, the Black Sea basin was cut off from the oceans, and contained only a body of fresh water (the "Euxine Lake"). Then, around 5550 B.C., rising pressure from the Mediterranean side caused the natural dam across the Bosphorus (the only link between the Black Sea and the rest of the world's oceans) to burst. This would have created a phenomenal inflow, perhaps 10 cubic miles of water per day, 200 times the flow of Niagara Falls, raising the Black Sea's surface by six inches per day, flooding some 60,000 square miles within a few years, and converting a fertile fresh-water lake into a deader sea.

There is considerable evidence for this theory, with strikingly sharp divisions in the sediments on the Black Sea bed, freshwater shells at some points and salt species above them, and what seem to be coastline formations 300 feet beneath the water. What are more controversial are theories about the human consequences. The flooded territory would surely have been occupied, and the Stone Age inhabitants would have been forced to flee miles every day to survive. Bold theories link this to the Noah/Utnapishtim stories, which were probably first written down millennia later; they also suggest that the ensuing waves of refugees may have caused cultural upheavals across vast areas of Europe and Asia. (An Atlantis idea will doubtless follow when the fringe theorists get up to speed.) At present, research is continuing, with automated submersible searching for traces of human occupancy on the old lakeshores – and, in September 2000, reportedly finding some.

Sodom and Gomorrah

For another tale of a culture fallen into evil and destroyed as a divine punishment, we may return to the Bible, and the tale of Sodom and Gomorrah. These were two of the "cities of the plain" (along with Admah, Zeboiim, and Zoar or Bela), situated near the Dead Sea.

In the Book of Genesis, Lot, the nephew of the Hebrew patriarch Abraham, comes to this area to graze his flocks. (Archaeology confirms that the area was probably quite fertile in the Middle Bronze Age.) However, the people of Sodom and Gomorrah are so sinful that God informs Abraham of his intention to destroy those cities. In an extraordinary passage, Abraham suggests to God that he should not destroy the righteous along with the wicked, and when God responds that he will not destroy the cities if there are 50 righteous men to be found there, Abraham *bargains God down* to 10 righteous men. However, when two angels visit Lot's house in Sodom, a crowd of citizens threaten them with homosexual rape; Lot's response, apparently elevating the sacred status of hospitality above all else, is to offer the crowd his two virgin daughters instead. The crowd refuse, and the angels resolve the problem by striking them blind.

Chivvied by the angels, who declare that the city *will* be destroyed, Lot flees with his wife and daughters. (His intended sons-in-law laugh at his warnings.) The angels tell the refugees not to look back, but Lot's wife ignores the warning, and is turned into a pillar of salt. The cities themselves are destroyed by brimstone and fire from Heaven, smothering the plain.

Modern explanations for this story suggest that the area may have been devastated by an earthquake, and that the "brimstone and fire" imagery may have come from the release of petroleum and gases from the local geology in the course of this event. The story of Sodom and Gomorrah became a favorite parable of the divine response to evil, and stands with that of Atlantis as a mythic symbol.

Irem of the Pillars

As Sodom and Gomorrah (p. 31) show, lost cities do not only sink beneath the sea. The Muslim world has a bundle of similar legends, in which cities are lost to the desert sands.

The Koran makes a specific reference to "the many-columned city" of Irem, "whose like has never been built in the whole land," along with Aad and Thamoud, which were evidently thought of as related or comparable; all their people "led sinful lives," and hence were punished by Allah. The *Arabian Nights* has a story in which the proud King Shadad builds Irem over 70 years at fabulous expense as a paradise on Earth, only to be struck dead by Allah before he even sets foot in it; his city is then lost and apparently cursed to remain so, though stray travelers may sometimes glimpse it. In the 20th century, H.P. Lovecraft picked up this legend for a passing reference in his story "The Call of Cthulhu," hinting that Irem's evil lives on. Irem is generally assumed to be equivalent to Ubar, which appears in Bedouin legends, and which T.E. Lawrence called "the Atlantis of the Sands."

Modern explanations of *this* story begin with the frankincense trade. (Frankincense is a strongly scented resinous gum derived from certain trees; it is expensive and used in religious ceremonies.) In ancient times, Frankincense caravans traveled up the southwest coast of Arabia, and towns along the route naturally prospered. One, known to the Greeks as Omanum Emporium, was especially powerful, but disappeared as the trade shifted to sea-based transport.

In the 1980s, researchers persuaded NASA to scan the Arabian coast with earth-penetrating radar, and identified the course of the old frankincense roads. This led them to an oasis named Shis'r, in Oman, where excavations and earth-penetrating radar found an ancient fort with eight 30-foot towers and walls six feet thick. This community apparently suffered severe ground subsidence around 400-500 A.D., thanks to a fall in the local water table. If it was indeed the original Irem, it was indeed swallowed by the sands, in a relatively small but disastrous way.

Northern Variations

North Sea Disaster Archaeology

Stories of terrible floods and lost communities may well have a basis in fact; disasters do happen. If such stories can survive thousands of years (which is an interesting question), then as with the Black Sea (p. 31), recent research may suggest an ancient origin for some British legends.

According to recent calculations, the rise in sea levels after the last Ice Age must have caused a rise of 65 feet in the level of the North Sea over a period of 2,000 years, causing the submergence of an area the size of modern Britain. But this process cannot have been entirely gradual; sometimes, the general rise would combine with tidal surges to trigger short-term, catastrophic flooding. Current estimates are that, between 7600 B.C. and 5900 B.C., around 1,000 square miles of North Sea coastland were subject to 15-foot tidal/storm surges about four times a century. The effects on human communities of the period, hunter-gatherers living on fertile coastal plains, must have been devastating; archaeologists believe that the low-density population must have lost up to 2,000 people with each flood.

Britain, previously linked to mainland Europe, was an island by the end of this process, and some archaeologists believe that communication with the continent was effectively cut off for an extended period, delaying the introduction of technologies such as new types of arrowheads for centuries. The possibility of a TL0 post-catastrophe campaign, or of time-traveling rescue/recruitment missions, may interest some GMs.

Hyperborea and Thule

The ancient Greeks were understandably vague about what lay much beyond their Mediterranean world, and in addition to Atlantis, they talked of strange lands far to the north.

Hyperborea was the mythical "Land Beyond the North Wind," supposedly an island near the pole where (because the north wind did not blow) the climate was always mild, and the human inhabitants therefore lived in idyllic comfort. *Thule* (or Ultima Thule – "Furthest Thule") was less fantastical; it was an island described by the geographer Polybius, who placed it six days' sail north of Britain. It has been variously identified as a confused reference to the Shetland Islands, Norway, Denmark, or even Iceland. The name has since been attached to other northern areas, and has become a byword for remoteness.

Cartographic Phantoms and Seafarers' Myths

A cartographic phantom is a feature, often an island, which appears repeatedly on maps, but which has no detectable existence in reality. There are numerous reasons why such phantoms develop. Explorers may make honest mistakes, especially given the approximate nature of much low-tech navigation, and so may report what are actually known lands in incorrect places, or they may report fog, ice, or mirages as sightings of land. Equally, legends may be taken as truth by gullible or traditionalistic cartographers. Once an island has appeared on a map, the mistake is likely to be copied and repeated by others, and once several generally reliable maps have shown the same feature, people naturally tend to believe it exists. The onus of proof then shifts to those who claim that the maps are wrong.

Almost surprisingly, Atlantis has never become a cartographic phantom, probably because the original legend says quite clearly that it sank. However, the Atlantic has had plenty of others. For example, *Frisland* was apparently a name given to the Faroes in an early, fanciful account; conflated with descriptions of Iceland, this story added an additional large occupied island to Renaissance maps of the North Atlantic. A little further on and even less real, *Buss Island* seems to have started out as a misinterpreted sighting of the southern tip of Greenland by the crew of a 16th-century ship that had been driven off-course by confusing currents. Later, a rather shady sea captain claimed to have charted it while angling for a job with the Hudson's Bay Company. It became such an established story that some navigators decided, when it could not be found, that it must have sunk, despite the fact that the sea is never much less than a mile deep in that area. (Some even suggested that Buss Island had been the last remnant of a sinking Frisland.)

Huy Breasil

Huy Breasil (also known as Hy-Brazil or O'Brasil) was supposed to be an island some way off the west coast of Ireland. (Confusingly, the name has nothing to do with Brazil in South America; the legendary name seems to come from an ancient Gaelic word, whereas the name of the modern country comes from maps showing Atlantic islands where brazilwood, used in making red dyes, might be found.) This looks very much like a Celtic otherworld-island, updated to fit with Christian ideas; the legend says that it lay quite close to the west coast of Ireland, but was perpetually shrouded in magical mists that only lifted once every seven years. (One story suggested that, if fire was brought to Huy Breasil, it would remain fixed in reality.) It was shown on medieval maps as more or less perfectly circular, sometimes with a river flowing though it; it has been suggested that the circle was symbolic of divine perfection, and the river started out, in symbolism, as the water of life itself.

Whatever its mythical roots, Huy Breasil was a persistent phantom, with expeditions in search of it being mounted in the 15th century, even before Columbus, reports continuing until the late 17th century, and "Brazil Rock" surviving on maps until 1865.

Antillia

The legend of Antillia has its roots in the Moorish invasion of Spain in the 8th century A.D. According to the story, as the Muslim forces pushed forward, a Spanish archbishop gathered together six other bishops and a number of followers, and fled the country by sea. They found sanctuary on an island far out in the Atlantic, where they founded seven cities (one for each bishop).

This medieval legend developed little until, early in the 15th century, Antillia, the Island of the Seven Cities, suddenly began appearing on maps. There seem to have been rumors that sailors had rediscovered it after being blown off course or while exploring the ocean, and that yes, it still held seven Christian cities. Further expeditions went looking for it, and when Christopher Columbus sought a westward route to Asia at the end of that century, he seems to have thought that Antillia might serve as a stopping place.

It took some time for Antillia to disappear from maps; at the height of the belief, it was depicted as a large, rectangular island, with the seven cities explicitly named (Aira, Anhuib, Ansalli, Ansesseli, Ansodi, Ansolli, and Con). One theory is that some unknown seafarer had in fact reached the West Indies some time before Columbus, and the rumor grew from there, merging with the old legend. Today, Antillia survives in the name of an island chain in the Caribbean – the Greater and Lesser Antilles.

The Sargasso Sea

To begin with dull reality; the Sargasso Sea is a region of the North Atlantic Ocean, roughly elliptical in shape, lying between 20° and 35° north of the equator and 30° and 70° west. It encompasses Bermuda, and lies inside a clockwise ocean-current system, with the Gulf Stream as its western edge.

The key point about the Sargasso is that it tends to be very calm, with no strong, persistent currents. It is also warm, with low rainfall, high evaporation rates, and light winds. The result is an especially salty region of sea, and something of a biological desert, short of plankton and fish. However, a type of free-floating brown seaweed ("gulfweed") has adapted to this environment, and is often found on the surface, supported by small bladders. This in turn sustains small, specialized creatures otherwise mostly found only in coastal areas.

The Sargasso was (probably) first mentioned by Columbus, who crossed it in 1492. The mass of seaweed (usually associated with coastal waters) bolstered his confidence that there might be land close by, encouraging him to continue. However, since then, the Sargasso has gained a sinister reputation, with stories that the seaweed grows so thick that it can entangle ships, and even tales of lurking monsters that will drag these vessels to their doom. The legend of the Bermuda Triangle has, of course, added to all this.

Realistically, the idea is nonsense; gulfweed never grows thick enough to hinder any ocean-going ship (although the weak winds of the region may inconvenience sailing vessels). The Sargasso of myth, however, is a marvelously sinister place, cluttered with unknown islands (perhaps supernaturally concealed) and full of the hulks of weed-covered, time-lost vessels, perhaps including Roman galleys, Viking longships, and Spanish galleons, as well, maybe, as modern craft from Bermuda Triangle mythology. For a bonus, the crews and passengers of these lost vessels may have founded weird communities, or can still be around as undead horrors. Of course, if Lost Atlantis lies beneath the Sargasso, something in the ruins, or its surviving denizens, may be to blame for this situation.

The Legend of St. Brendan

St. Brendan of Clonfert (about 484-578) was an Irish monk who was noted for his taste for travel. In fact, Celtic monks of the Dark Ages were great voyagers, not only seeking to spread the gospel but also valuing remoteness for its own sake, placing monasteries and hermitages on the most distant islands. (They appear to have reached Iceland in 770, before the Vikings.) Brendan visited Brittany, the Hebrides (where he met St. Columba), and the Orkneys. He founded monasteries in Ireland and Wales, and possibly elsewhere. Suggestions that he ventured further, to the Faroes, continental Europe, and perhaps even the Canary Islands, are not entirely implausible.

However, the problem is that Brendan became a legendary figure, with at least two accounts of his activities, the *Life of St. Brendan* and the *Voyage of St. Brendan*, becoming popular in the Middle Ages, centuries after his death. (Eventually, the two distinct accounts became entangled.) Brendan was credited with many of the miraculous attributes of the saints, while his voyage was depicted not only as involving encounters with sea monsters and many wonders, but as taking the form of a Christian pilgrimage in search of God.

In fact, the legend of St. Brendan may have one great feature in common with that of Atlantis. Both may well have started out as blatant parables, later taken all too literally by readers who were captivated by their rich and colorful details. Brendan and his companions are shown as guided by God, who provides them with food and water when such are needed, and the voyage takes exactly seven years, with many returns to specific places to mark Christian festivals. Its imagery draws from the Book of Revelation, and its images are based on Christian symbolism.

Nonetheless, the "Island of St. Brendan" became a cartographic phantom, sometimes identified with the Hesperides or Fortunate Islands of classical myth. In Columbus' time, it was said to have been sighted by inhabitants of the Azores; later maps pushed it further west, until it finally faded away.

Brendan's Islands

But in fact, the *Voyage* tells of *several* islands, many of them with miraculous features. These include one with a seemingly uninhabited town where the travelers are reprovisioned by a divine emissary, one with flocks of sheep bigger than cattle, the "Paradise of the Birds" (the birds are numerous, white, and given to delivering messages from Heaven), a pillar of bright crystal, perfectly square in cross-section and about 700 yards along each side, the color of silver but harder than marble, rising directly from the sea and surrounded by a wide-meshed net, the "Island of Smiths" (where the travelers hear the sound of hammers on anvils and see clouds of smoke, and flee), a demon-infested island with a volcanic mountain, and various inhabited islands. (Most of these last are occupied by monks or hermits, but one holds Judas himself, being tormented by demons.) The travelers also land on an "island"

The Brendan

The replica early-medieval curragh built by Tim Severin had an ash frame covered in ox-hides, lashed on with flax. Apart from some modern safety equipment and a radio, it was entirely constructed with resources available to a late TL2/early TL3 culture. In ***GURPS Vehicles*** terms, it would have the following attributes:

Subassemblies (numbers are targeting bonus to hit): Body +4, Foremast (Mast1) -3, Mainmast (Mast2) -2.
Power & Propulsion: 10 oars; 205 square feet of sail in a square rig (62 square feet on the foremast, the rest on the mainmast).
Occupancy: 10 XCCS, 1 XCS *Cargo:* 270 cf open

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	3/12	3/12	3/12	3/12	3/12

Masts are unarmored. All armor is non-rigid.

Statistics
Dim: 8' × 4' × 36' (masts are 13' and 19' tall; draft is 1.6')
Internal Payload: 7,600 lbs. *Lwt:* 10,609 lbs.
Volume: 385.9 cf *SizeMod:* +4 *Price:* $4,979

HT: 10 *HP:* 240 [Body] 4 [Mast1] 10 [Mast2]

Sailing Performance: wSpeed: 10 *wAccel:* 0.8
wDecel: 2 *wMR:* 0.1 *wSR:* 2
Rowing Performance: wSpeed: 5 *wAccel:* 0.1
wDecel: 2 *wMR:* 0.1 *wSR:* 2

The ship's frame is classed as light and expensive. All accommodations, cargo space, and so forth are of course in the hull. When sailed across the Atlantic, this vessel carried less than its full complement of oarsmen, giving extra space for extended occupancy in just-tolerable conditions. As a modern reproduction, it also carried TL7 communications, safety, and navigational equipment in its cargo space, to meet legal requirements.

Note that the nonrigid armor gives the vessel an effective DR 3 against collision damage. This is definitely *not* a warship.

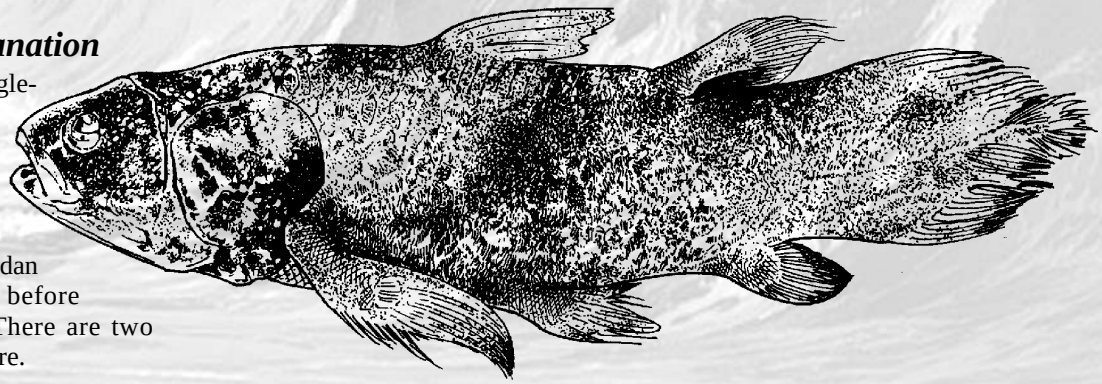
The highest sailing speed measured for this vessel in reality was about 14 mph, but that was doubtless less than fully laden, and 6 to 8 mph was more usual, so the calculated figure is valid for game purposes. It covered 115 miles on its best day. Under oars, with a fit, fresh, and complete crew, it did indeed manage the listed 5 mph; with just six rowers, it managed 3.2 mph.

which turns out to be a whale which swims away when they light a fire (an incident which also occurs in other stories, including the *Arabian Nights*), spend time becalmed in a "coagulated" sea, and are attacked by various monsters which are driven off or killed by other, Heaven-sent creatures. After seven years, they reach their goal, the "Promised Land of the Saints" (perhaps equivalent to Huy Breasil?), where they gather ripe fruit and precious stones, before visiting one more "Island of Delights" and then returning home.

One assumes that Brendan traveled *south*, to the Canary Islands and the Azores. There are enough volcanoes in that area to explain the fiery mountain and the Island of the Smiths, while the "coagulated" sea could represent a description of the seaweed-clogged Sargasso. There are also plenty of lush islands to explain Brendan's more hospitable stops, and some theories have suggested that he could even have reached the Caribbean.

Attempts at Explanation

Thanks to the entanglement of fact and parable in this legend, modern readers have tried to find a real basis for the *Voyage*, even wondering if Brendan reached the Americas before any other European. There are two basic sets of theories here.



The alternative view is that Brendan went *northward*, taking in the Faroes and Iceland along the way. In this explanation, the pillar of crystal would be a fanciful description of an iceberg, and the "net" around it and the "coagulated sea" would be areas of pack ice. This route would certainly take in plenty of islands with populations of sheep or birds, and also plenty of possibly active volcanoes, including Mount Hekla on Iceland. This theory inspired writer Tim Severin; in 1976, he built a replica of the type of Irish curragh that Brendan would have used, and he and his crew sailed it from Ireland, via the Hebrides, the Faroes, Iceland, and Greenland, to Newfoundland. Of course, this breathtaking feat proves very little about what St. Brendan actually *did.* Even if the legend has a strong basis in fact, it may well combine features from multiple voyages made by several different monks. Phantoms continue to haunt the Atlantic.

St. Michael's Islands

In Christian tradition, the archangel Michael, captain of the heavenly host, is associated with mountains and high places. One theory is that respect for Michael replaced the cult of Wotan after the conversion of the Germans, and that chapels to Michael replaced Wotan's altars in the German mountains, but other sources claim that the association goes back to an earlier date in the Eastern Church, where no one had even heard of Wotan. The Roman Catholic feast of the Apparition of St. Michael, on May 8, marks a legendary appearance by the archangel on Mt. Gargano, in Italy, around 492 A.D.; that mountain was an important medieval pilgrimage site. This association seems to have been extended to some islands, especially high, rocky islets near to coasts.

Mont-Saint-Michel is such an islet off northern France, linked to the coast by a causeway; it holds both a small town and, on its peak, a famous abbey. The first church was supposedly built there in the eighth century after the bishop of Avranches had a vision of Michael. It soon became a center of pilgrimage, and a Benedictine abbey was built there in 966. This was besieged and partly burned in 1203 by King Philip II of France, who, in restitution, paid for the construction of the spectacular abbey that tourists visit today. The community experienced both further sieges and immense popularity as a pilgrimage center over subsequent centuries, but the abbey ultimately declined, and was dissolved during the French Revolution, becoming a prison for some years before being restored as a historic monument in the late 19th century.

There is also a "Saint Michael's Mount" in England; another islet linked to the mainland at low tide, lying off the coast of Cornwall. Legend says that King Arthur fought a giant there, and it was associated with the tale of Lyonesse (pp. 29-30). In the 11th century, King Edward the Confessor gave it to the abbey of Mont-Saint-Michel, and a monastery was located there for some time. Today, it holds a small village.

Players of ***In Nomine*** may be interested in the association between Michael and mountains and coastal islands; many of these places might serve as his Tethers. Incidentally, the motto of the Knights of Saint Michael, a medieval French noble order associated with Mont-Saint-Michel, was *Immensi Terror Oceani:* "The Terror of the Immense Ocean."

Davy Jones and Fiddler's Green

While sensible sailors seriously believed in Buss Island or Antillia, other "places" that seafarers may mention are more openly fanciful. The open sea, sometimes hostile, sometimes strange, encourages tall tales.

"Davy Jones' Locker," for example, is no set place at all, but is simply the bottom of the sea – perhaps the legendary place where the drowned go. There are various explanations for the origin of the phrase. Some link "Davy Jones" to Caribbean terms for the devil, while others rather dubiously claim that a notorious dock-front innkeeper of that name used to press-gang sailors and imprison them in a locker until the ships that wanted extra hands came to collect them.

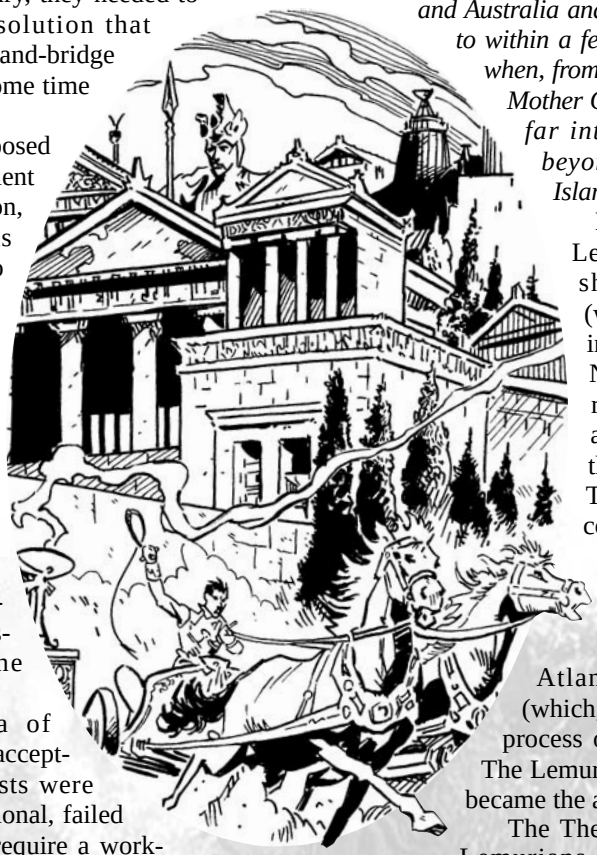
By contrast, "Fiddler's Green" is seen as a paradise of sorts, not exclusive to sailors. The story seems to go back to the wandering sailors, mercenary soldiers, and other masterless men of the 18th century, who would say that they were unlikely to be let into Heaven, but not bad enough to deserve to go to Hell. So they might expect to go to Fiddler's Green (the name evokes the village greens where informal celebrations and dances would take place), where the company was good and the drink was free. One suggestion is that burial at sea was "going to Davy Jones' Locker," while burial on land was "going to Fiddler's Green."

Lemuria

Lemuria is, in a way, the Atlantis of the Indian Ocean. (Or perhaps the Pacific.) But while the Atlantis legend goes back at least as far as Plato, the story of Lemuria is rather more modern in its origins, and hence in its flavor.

The Original Theory

It all began as a fairly straightforward scientific theory. The category of animals known as lemurs is common in Madagascar, and also appears in Africa, India, and the Malay Archipelago. Once Darwinian evolution was accepted by scientists in the 19th century, they needed to explain such facts, and one solution that emerged was the existence of a land-bridge continent between these areas, some time in prehistory.



In 1864, Philip L. Sclater proposed the name "Lemuria" for this ancient land of lemurs. The idea caught on, with leading biologists such as Alfred Russel Wallace (who developed the theory of evolution independently of Darwin) supporting it. Ernst Haeckel, a German biologist, went on to suggest that it might also have been the home of the species intermediate between apes and humans; the study of human evolution had some problems with gaps in the fossil record at this time, and it seemed convenient to think of the "missing" fossils as being lost beneath the ocean.

However, the whole idea of Lemuria was never universally accepted, and by 1880, some scientists were already dismissing it as a provisional, failed hypothesis. However, it would require a working theory of continental drift, which in turn required the late-20th-century discovery of plate tectonics, to resolve all of the problems to which the idea of Lemuria had been a response. In any case, 1880 was too late; by then, Lemuria had fallen into other hands.

The Theosophists

The doctrines given to the Theosophists (pp. 14-17) by Helena Blavatsky included some dramatic ideas about history of life on Earth, which attempted to combine evolution, religion, and spiritualism. Although the First and Second "Root Races" in this account were more or less immaterial beings (making it hard to understand how they were vulnerable to the catastrophes which wiped them out), the third were fully material beings, who therefore required a homeland. Lemuria, already identified by scientists as a possible ancestral home for humanity, took this role, eventually being identified as the source of the legend of the Garden of Eden. (Blavatsky also drew on another writer who claimed that the Hindu classics told of a land named Rutas, which sank beneath the Indian Ocean.) According to Blavatsky's *The Secret Doctrine*, it was rather more than a land-bridge between India and Africa:

It covered the whole area of space from the foot of the Himalayas . . . from Chittagong, westward to Hardvar, and eastward to Assam. From thence, it stretched South . . . embracing on its way . . . Madagascar on its right hand and Australia and Tasmania on its left, it ran down to within a few degrees of the Antarctic Circle; when, from Australia, an inland region on the Mother Continent in those ages, it extended far into the Pacific Ocean, not only beyond Rapa-nui (Teapy, or Easter Island) . . .

Blavatsky went on to say that Lemuria extended in a horseshoe shape round the tip of Africa (which was smaller in those ages) into the Atlantic and up as far as Norway. Various ruins and remains, including some in India and various Pacific islands, mark the extent of Lemurian habitation. This huge and bizarrely shaped continent eventually (mostly) sank beneath the waves over a period of millions of years. However, the western segment more or less survived, and became Atlantis, home of the Fourth Race (which, she said, actually completed the process of vanishing 850,000 years ago). The Lemurians had produced a subrace who became the ancestors of the Atlanteans.

The Theosophists also declared that the Lemurians had built great cities on their homeland, some ruins of which could still be found. The structures credited to these ancient beings consisted of a handful of great stone buildings scattered round India and the Pacific; as the Lemurians were physically large, their cities had to be built on a similar scale. In fact, few extant ruins of any age are anything like big enough to credit to the Lemurians, so the Theosophists ended up more hinting at lost remains and obscure underground complexes. (Of course, having the home continent sink beneath the sea saved a lot of explanation.) The Lemurians seem to have lived peaceful, largely uncomplicated lives, at least until they became morally corrupt and invented sexual reproduction; their history mostly seems to have consisted of a series of interventions by enigmatic spiritual beings, who were seeking to guide their development. (This unfortunately rather rules out using the Lemurian era itself as a setting for RPGs, as it was a little short on conflict.)

A Nazi Atlantis?

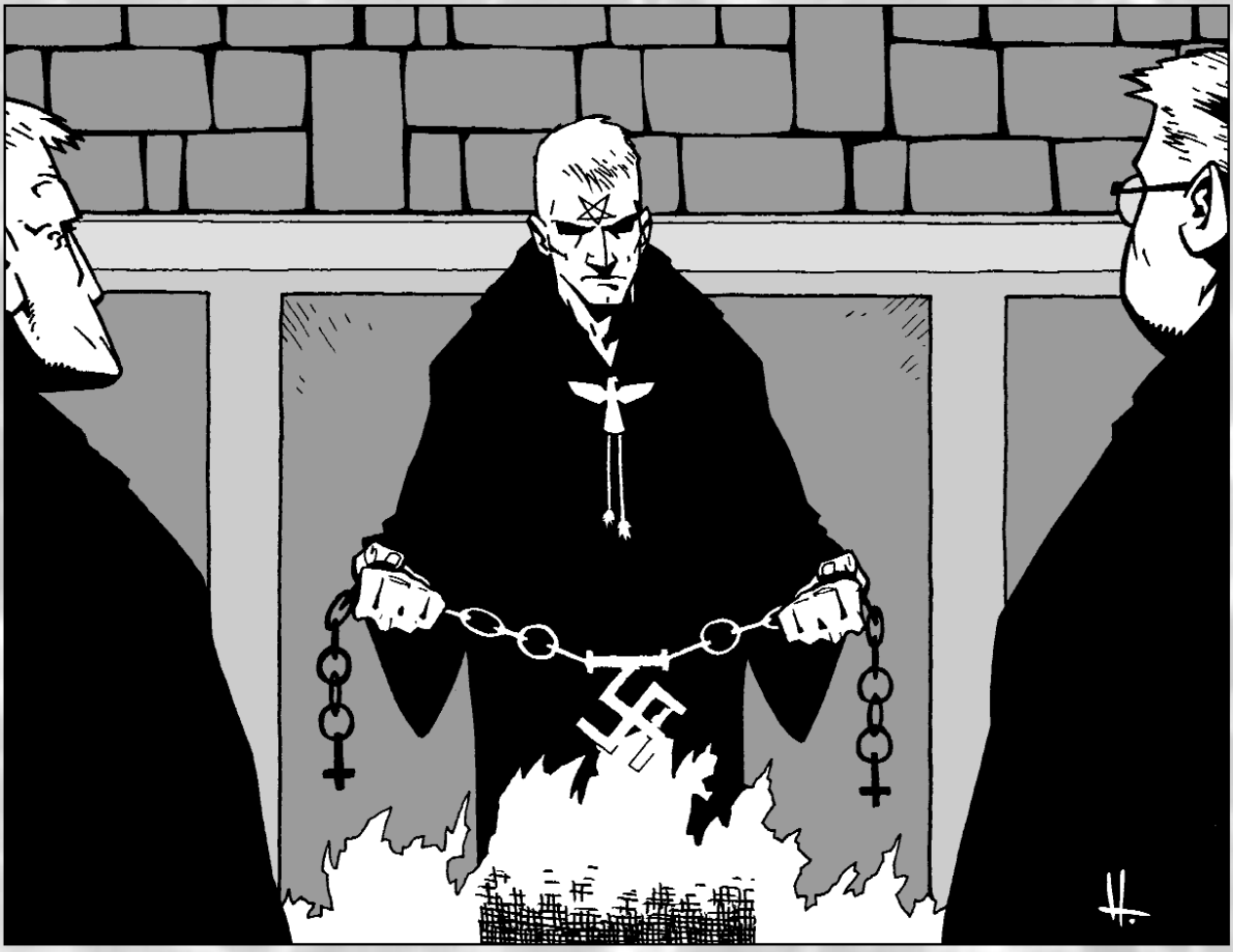
The mixture of occultism and fringe theories that produced Theosophy was as powerful in Germany as anywhere, but amid the chaos of the early 20th century, it gave rise to some peculiar local manifestations. Among these, some racist groups picked up the suggestion of a 19th-century French occultist that Thule (p. 32) was the "Aryan homeland."

The professional anti-Semite Theodor Fritsch co-founded a group named the *Germanenorden* in 1912 with a minor government official, Hermann Pohl. It was a secret arm of the open *Reichshammerbund*, a reading society centered around Fritsch's publication, *The Hammer*, and an extension of the quasi-Masonic Wotan Lodge co-founded by Fritsch and Pohl in 1910 or 1911 (dates vary). It combined mystical and fringe-scientific ideas with radical, racist politics.

In 1916, Adam Glauer, a drifter who called himself the Baron von Sebottendorff, joined the Germanenorden, and soon became its Bavarian head. It spawned further spin-off bodies; in 1918, an intellectual study group, the "Thule Society" (*Thule Gesellschaft*) began serving as a cover for the Germanenorden's political activities in Bavaria. The Germanenorden also decided to add manpower and muscle to its aristocratic, intellectual style, and created the National Socialist German Workers' Union for this purpose. It recruited an ex-soldier named Adolf Hitler, who eventually swept aside the old leadership – and the rest, of course, is history.

This background has enabled conspiracy theorists to claim that the Nazis were a magical group from the first, and even that Hitler was the pawn of supernatural powers, but even though some of his followers were fond of weird theories, Hitler himself took little interest. He certainly despised Theosophy for its dedication to pacifism, and the Nazis closed German Theosophist institutions and schools. Still, the Thule Society had used the swastika symbol before the Nazis, and with the Society's ideas lurking in their background, the Nazis were certainly not averse to the idea of an island in the Atlantic as the birthplace of civilization.

For a final irony, the sidelined Sebottendorff drowned himself in the Bosphorus on V-E Day.

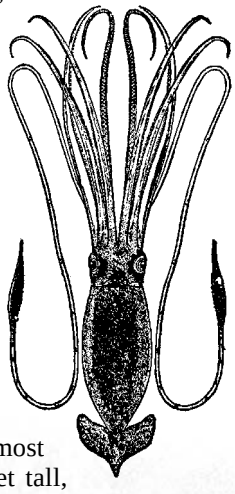


The Nature of the "Third Race"

The Theosophists' descriptions of the Lemurians are often vague and sometimes contradictory, but a general picture emerges. Their most significant feature is their evolving method of reproduction. The earliest members of the race were "Sweat-Born" – they produced exudations which coalesced to form "eggs" from which new Lemurians emerged. However, in time, some of the species developed hermaphroditic features, enabling them to produce young by a different means – albeit still without sex.

Then, some Lemurians started showing more male than female characteristics in their anatomy, and some the converse; thus, they evolved sexual reproduction. There is some suggestion that this development was the cause of their eventual annihilation; presumably, their spiritual guiding powers saw it as moral corruption, and triggered the destruction of Lemuria as a punishment. It seems that hermaphroditic Lemurians may have been oviparous ("Egg-Born"); how long this feature persisted is unclear.

The second oddity about the Lemurians, at least in their early days, was that they were not fully intelligent, conscious beings; they seem rather to have been like clever animals. This may seem strange, given that they built cities whose ruins survive to this day, but the explanation is that the guiding spiritual powers were working to raise them to full consciousness, and may have "inspired" exceptional individuals of the race, granting them full sentience and enabling them to act as leaders and thinkers to the rest. It is sometimes said that Lemurians used "instinct rather than reason"; this could reflect the spiritual powers working hard to guide them. (The Theosophists evidently believed that conscious intelligence was overrated; according to some Theosophist sources, even the aircraft-flying, magic-wielding Atlanteans were not fully self-aware.)



The Lemurians were also telepathic, although until they attained something like full sentience, they didn't necessarily have much to talk about. (As one Theosophist text said, "Language could not be well developed before the full acquisition and development of their reasoning faculties.") Of course, this power may have made it easier for "inspired" Lemurians to organize and control the building of cities and the like, as the race was guided to civilization. A rather crude spoken language developed with intelligence, while telepathy atrophied.

Physically, Lemurians were large; most sources say they were at least 15 feet tall, and some suggest that the biggest reached 25 feet or more. Thus, they were doubtless physically strong, although Theosophist texts don't dwell on this. They also possessed a third eye – an organ which subsequently moved, with evolution, inside the skull, becoming the pineal gland. Some texts suggest that this was the only eye they had, at least at one stage (leading to Greek legends of the Cyclopes), but others imply that it was actually sited at the back of their heads, giving them all-round vision. It had probably disappeared by the time of Lemuria's downfall. In the hermaphroditic era at least, Lemurians also had four arms; quite why these extra limbs later vanished is unclear. Lemurians were rather ape-like, with dark or yellowish skins, and were seriously unattractive to modern human eyes.

Theosophist texts have all sorts of confused notes about the reduction in size of human and other species over time, explaining how the Third and Fourth Races could come to be the ancestors of modern humanity. In fact, some Theosophist sources have an unpleasant racist edge; the subhuman Lemurians are described as direct ancestors of tribal peoples such as the Lapps, Australian Aborigines, and Andaman Islanders, while (as mentioned in Chapter 1) the early Atlanteans were the ancestors of the Native Americans and some Asian races, and the last (and of course most advanced) Atlantean sub-race gave rise to modern Europeans.

Alternate Lemurians

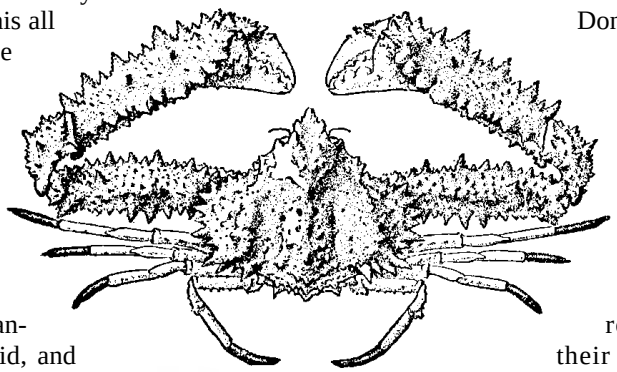
Theosophist ideas became popular enough for a while that Lemurians started cropping up all across fringe theory and pseudoscience. Aside from, perhaps, mutating into the inhabitants of Mu (see below), they seemed strangely attracted to Mount Shasta, in northern California, an impressive but well-explored mountain which was nonetheless claimed in the 1920s and '30s to be the home of a Lemurian colony. These Lemurians, however, were fully human-looking (if exceptionally tall).

Lemuria has also served as a setting for the odd fantasy novel. While less well-established than Atlantis, it perhaps has the virtue of relative novelty.

Mu

If Atlantis began as a parable, and Lemuria as a scientific theory, Mu, the lost continent of the Pacific, began as a translation error.

When the Spanish *conquistadores* ruled Central America, one of their acts of religious fanaticism was to burn as many of the countless Mayan books that they could find. This all but obliterated all knowledge of that literary culture; only three Mayan books survived, and the complex Mayan pictographic script was left completely incomprehensible. In 1864, some confused notes on Mayan writing made by an intolerant 16th-century Spanish monk turned up in Madrid, and an over-enthusiastic scholar, the Abbé Charles-Étienne Brasseur, immediately tried to use them to interpret one of the three books, the *Troano Codex.* Modern scholars have decoded enough of the Mayan script to determine that this is in fact a work on astrology, but Brasseur decided that it was an account of the destruction of an ancient land called Mu, which he hinted might have been Atlantis.



This material was picked up by Ignatius Donnelly (p. 12), who incorporated it into his theories, but Mu developed further in the hands of a French doctor and archaeologist, Augustus Le Plongeon. Combining Brasseur's work with some Mayan wall-carvings, Le Plongeon produced a tale of rival princes of Mu who became locked in romantic rivalry for the hand of their sister, Queen Móo. Eventually, Móo fled from the winner to Egypt, where she built the Sphinx and, under the name of Isis, founded the Egyptian civilization.

Oannes

Ancient Greek scholars preserved fragments of the writings of Berosus, a Chaldean priest of Bel, in Babylon, who produced a history of Babylonia around 290 B.C. Among other things, Berosus told how the primitive peoples who occupied that land in the earliest times were visited by a creature named Oannes, who emerged from the Arabian Sea. Oannes is described as having the entire body of a fish, but *also* the head of man beneath his fish's head, and human feet adjacent to his fish-tail. He spent the day on land, though he never ate while ashore, and his nights in the sea. Although the account oddly says that he was "destitute of reason," he could speak, and in fact he taught the primitive humans the arts of civilization; agriculture, the building of cities and temples, the formulation of written laws, and the principles of geometry, along with other crafts and sciences.

To the Babylonians, Oannes was probably the messenger of Ea, a god of fresh waters beneath the Earth, of ritual purification and of magic. Needless to say, this myth has caught the attention of later generations; Madame Blavatsky (p. 14) said that "Oannes is the emblem of priestly, esoteric wisdom; he comes out from the sea, because the 'great deep,' the water, typifies . . . the secret doctrine." Modern fringe theorists have suggested that Oannes was actually an alien being, linking the story to other myths from across a wide region and to "alien astronaut" theories of human history.

Of course, for game purposes, Oannes could have all sorts of explanations. If Lemuria sank beneath the Indian Ocean, perhaps some of its inhabitants survived and somehow adapted to an aquatic life, as is so often imagined for Atlanteans. In that case, Oannes would be an agent (or perhaps a renegade) trying to assist the tragically regressed surface-dwellers. Lovecraft fans might associate him with Dagon and other undersea horrors; really dubious etymology might then bring in the Dogon tribe of Africa, with their "advanced knowledge" of the specifics of the faraway star-system from which, they say, their Gods came, Gods who are "fishmen."

Theosophy's Lemurians in *GURPS*

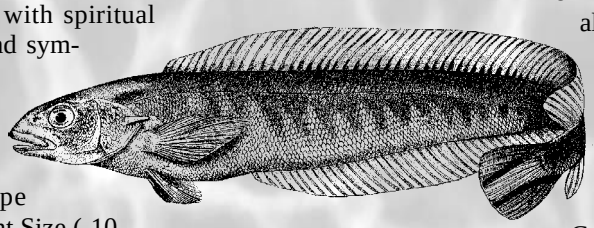
When converting the Theosophist's Lemurians into ***GURPS*** terms, it is easiest to divide them into three categories; the early *Sweat-Born*, driven almost entirely by instinct; the hermaphroditic *Egg-Born*, who retain many early features, and still rely on telepathy for communication, but who have been spiritually guided to something approaching sentience; and the *Late Lemurians*, at the peak of the race's city-building civilization, with sexual reproduction and spoken language, but atrophying telepathic talents. However, these are arbitrary categories; GMs are welcome to develop variants, such as "Cyclopean" Lemurians with just one eye, or very large, strong "workers."

Racial Packages

Advantages: All Lemurians have +10 ST (110 points), +6 "Natural" ST (see p. CI8: 27 points), extra HT and reduced IQ by species, 4 Extra Hit Points (20 points), Enhanced Move (10 points), Extra Reach: 1 Hex (20 or 40 points, depending on number of arms; very large Lemurians might buy extra hexes of reach), Intuition (15 points), and Telepathic powers.

Disadvantages: standard Lemurian problems are Absent-Mindedness (-15 points), Non-Iconographic (-10 points), Presentient (-20 points), and Short Attention Span (-10 points).

Lemurians might also be treated as having Very Thin Fur (0 points). Illiteracy is worth no points to Lemurians, because most are Presentient and writing has not yet been invented. Non-Iconographic is permitted because the race has frequent dealings with spiritual beings, who often work through signs and symbols; these doubtless adorn the walls of many a Lemurian city, to the bemusement of the mass of the population.



If they are going to operate in a setting or area dominated by modern-type humans, Lemurians also have Inconvenient Size (-10 points), and may be permitted to take Unattractive or Ugly Appearance, Illiteracy, and Uneducated, at the GM's option. They might well also be given extra "Racial" Disadvantages such as Clueless, Confused, or Primitive, due to their low innate intelligence and reliance on spiritual guidance.

The two earlier types of Lemurian are effectively Mute, but receive no points for this because they can use Telepathy instead of speech. They are assumed here to have Telesend only, as their guiding spirits caused them to abandon telepathy in favor of speech, which suggests that their psychic powers were not actually very useful. However, because it is their standard mode of communication, they receive a -50% discount when buying Telesend power, and can buy the skill up to IQ+5, despite being Presentient.

Sweat-Born have +6 HT (80 points), -3 IQ (-20 points), two Extra Arms (20 points), 360-Degree Vision (25 points), Telesend Power 10 (15 points), Telesend Skill at IQ+2 (8 points), and the Disadvantage Bestial (-10 points). Playing a Sweat-Born costs 285 points.

Egg-Born have +5 HT (60 points), -3 IQ (-20 points), two Extra Arms (20 points), Common Sense ("low-level spiritual guidance": 10 points), 360-Degree Vision (25 points), Telesend Power 10 (15 points), and Telesend Skill at IQ+3 (10 points). Playing an Egg-Born costs 287 points.

Late Lemurians have +4 HT (45 points), -2 IQ (-15 points), Telesend Power 8 (24 points) and Telesend Skill at IQ-1 (2 points). They have a rather crude spoken language; treat it as a Mental/Easy skill, which cannot be learned above skill level 10 by anyone. Many have Common Sense, but some have drifted out of touch with the spirits who gently guided their ancestors. As the discovery of Sexual Reproduction apparently caused the race problems, Lecherousness may be widespread. Playing a Late Lemurian costs 203 points.

"Inspired" Lemurians: Any Lemurian community might – perhaps *must* – contain at least some "inspired" individuals, spiritual and cultural leaders and organizers in contact with higher powers; these make slightly more plausible PC types than ordinary, presentient members of the race. They can buy off Absent-Mindedness, Bestial, Non-Iconographic, Presentient, or Short Attention Span (and should almost always eliminate at least two of them); they may also have advantages such as Allies (other "inspired" Lemurians, or more ordinary but powerful followers), Charisma, Common Sense (if not part of their racial package), Danger Sense, or a spiritual being as a Patron (possibly Secret or in the form of Divine Favor) – and maybe Channeling, Clerical Investment, Destiny, Faith Healing, Illuminated (reduced in cost as the character will already have Intuition), Literacy (in a script created by the spirits), Luck (supernatural favor), or Strong Will. They may also have a wider range of Telepathic skills, including Empathy, and possibly other Psionic abilities. They will probably also have Disadvantages such as Duty to the spirits or their entire race, No Sense of Humor (their patron spirits never having given them the chance to learn to have fun), Pacifism (spirits are very high-minded), Staid, Stress Atavism, Sense of Duty (to the species and/or the spirits), or Telepathic Addiction.

Le Plongeon's *Queen Móo and the Egyptian Sphinx* was in turn the basis for the work of James Churchward, an Anglo-American writer who claimed the rank of colonel (on possibly doubtful grounds). Churchward flaunted the paraphernalia of period spiritualism; although his first book on Mu was published in 1926, he may have started work as early as 1870, at the height of the Victorian spiritualist boom. He claimed to have traveled widely in South America and also in Asia, where a friendly priest (his guru) supposedly showed him some ancient tablets which confirmed the existence of Mu, which Churchward placed in the Pacific. *Exactly* where this happened is unclear, especially as Churchward never actually produced these tablets, which he claimed were written in an ancient language, that of the priests of Mu, the "Nagas" or "Naacals," which he had studied. (He *also* confirmed the existence of Atlantis, as a completely distinct continent; his Mu is perhaps more like the Theosophists' Lemuria.)

According to Churchward, Mu had a population, at its height, of 64 million, divided into 10 tribes and ruled by a white tribe and a priest-emperor, the Ra. It sent out colonies both to Atlantis and to Central Asia, where they built a great "Uighur Empire" 20,000 years ago. The Uighurs became the ancestors of the "Aryan" races of Europe and Asia, whereas, when Mu and Atlantis sank (due to natural geological action) around 13,000 years ago, the few survivors on Polynesia reverted to savagery and cannibalism. (Casual assumptions of white supremacy were another recurrent theme of Victorian occultism.)

Although Churchward's four books on Mu sold well enough, and acquired a few followers, Mu never really caught on. It did become the home of the cartoon caveman Alley Oop, and at least one modern Japanese fringe theorist has used it, but it is hardly as famous as Atlantis or Lemuria. Presumably, the evidence was, for once, just a little too skimpy.

Further Images

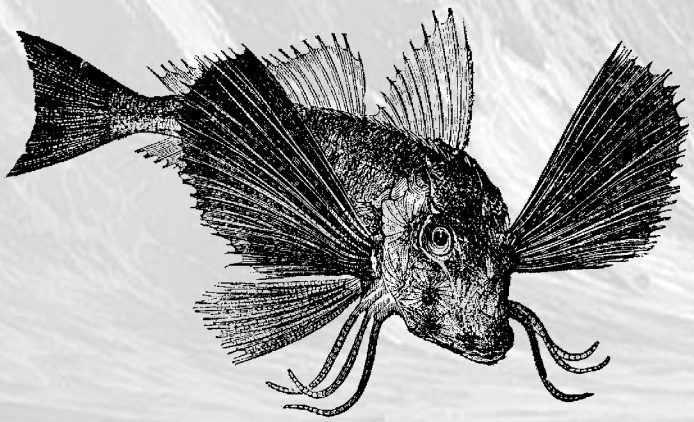
An Indian Atlantis?

In Indian myth, the Kingdom of Dwarka was Krishna's kingdom while he was allied with the Pandavas of the *Mahabharata* legend-cycle (see ***GURPS India***). This kingdom is supposedly sunken off the coast of modern-day Dwarka, the westernmost point of the Kathiawar peninsula, in Gujarat.

Perhaps more to the point, the Kingdom of Dwarka is located in the time of the *Mahabharata*, when India was heroically glorious. Like Plato's Atlantis, the *Mahabharata* is placed in a distant, mythic past, so GMs can probably feel free to make the two stories contemporaneous.

Pompeii and Herculaneum

The Victorian wave of interest in Atlantis and other lost continents, with its imagery of many-columned cities full of classically dressed folk suddenly being wiped out by catastrophes (often volcanic), may well have partly been inspired by a major concern of archaeologists of the period; a very real ancient city that was indeed destroyed.



Pompeii and Herculaneum were Roman towns (of 10,000 to 20,000 and 4,000 to 5,000 people respectively) on the Bay of Naples. In 79 A.D., they were obliterated by an eruption of Mount Vesuvius. Written accounts of this catastrophe survived in libraries, but locally, the locations of the cities were entirely forgotten.

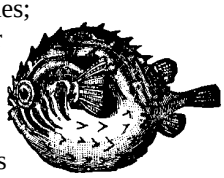
The ruins of Pompeii were rediscovered late in the 16th century, and those of Herculaneum in 1709. Early excavations were basically crude treasure-hunting, but research on the sites in the 18th century (from 1738 in Herculaneum, 1748 in Pompeii) is considered to mark the beginning of modern archaeology. Haphazard digging was finally stopped and replaced with systematic study from 1860, and has continued and expanded down to the present day. The vast quantities of material – private and public buildings, artworks, furniture, even human remains – are essential to modern studies of Roman culture, and the image of the city obliterated by a volcano has always had an obvious dramatic appeal.

Each phase of archaeological research inspired waves of interest in the ancient period across Europe; the fashionable neoclassical artistic style of around 1800 was probably inspired by images from Pompeii. In 1834, the popular novelist Edward Bulwer-Lytton published *The Last Days of Pompeii*; while his style and reputation have not survived well, the book's melodramatic depiction of a doomed society, and of moralizing Christians prophesying doom, foreshadows later treatments of Atlantis.

GURPS Traveller: Ancient Memories?

Although the ***Traveller*** setting is concerned with the far future rather than the mythic past, there are elements which can be tied into Earth's "Lost Continent" myths.

While the rise and fall of the Ancients occurred long before human recorded history, GMs, or fringe theorists within the setting, could produce vague suggestions involving "racial memory." Or a few Ancients might have slipped back to Earth later, or been left there by Grandfather for some inscrutable reason, only to be eventually destroyed by a technological disaster (or by Grandfather). This could also explain legends of monsters such as harpies; a meticulous clean-up by Grandfather would explain the shortage of evidence.



Ancients aside, while the Vilani could not have reached Earth in the time frame, minor races such as the Vegans might just have made the journey. Perhaps they made trouble for the natives, until a group of prisoners broke free and, by sheer chance, detonated their fusion reactor. (The tall, non-Human Vegans could also have inspired other monster legends such as the Cyclops.) Tying together evidence from very old records and archaeology, in the face of Solomani factions who hate *any* suggestion of extra-terrestrial influence on their ancestors, could be quite a task.

Researchers seeking Ancient remains on Terra (the apparent lack of which is surprising, given that the Ancients definitely visited), and scrabbling for clues as to where to start, might find stories of Atlantis, and wonder if Earth's oceans might be worth exploring. (Actually, they might. They have been studied intensively over the millennia, but they remain big, deep, and dark.) A more *eccentric* scholar might turn up Theosophical texts in an ancient database, and take them all too seriously. Obviously, they won't accord with accepted scientific ideas, but they could always be read metaphorically, and in any case, the Imperium and the Solomani Sphere doubtless have their share of cranks. PCs who find themselves bodyguarding a rich oddball who is determined to prove that the Vilani and Zhodani were transplanted and nurtured by breakaway immaterial spirit-guardians could have an interesting time of it.

Another way to use the Lost City image might disregard Earth altogether. First or Second Imperium remains on worlds which have since suffered major climatic shifts and ensuing floods might be of interest to someone. A sealed base with a population which has somehow survived seems *unlikely,* but not necessarily inconceivable . . .

Horror: It Is Not Lost . . .

Much that is associated with Lost Land myths is highly suitable for horror. To begin with, the sea itself can be quite frightening, being vast and essentially hostile to human life; its dark depths are all too literally chilling. Likewise, if the Lost Land was destroyed by divine powers for its decadence or corruption, garish dark fantasies can be set there before the catastrophe, with its denizens acting as the embodiments of cruelty and self-indulgent evil. As for the destruction itself; whether willed or entirely natural, it represents horror on a vast scale, with whole cities being wiped out in a few moments of overwhelming terror and chaos.

H.P. Lovecraft, in many ways the father of modern horror and horror roleplaying, was clearly aware of the horrific potential of the sea, to the point of thalassophobia. Many of his stories involve threats to life and sanity from beneath the waves. The least of these are perhaps the dangerous, ocean-dwelling, intelligent "Deep Ones" (the archetype for "evil fishmen" in modern RPGs; see pp. 45-46). The Deep Ones worship a sinister deity named Dagon (a name drawn from Middle Eastern myth), but the best-known dangerous sub-aquatic god in Lovecraft's stories is, of course, Cthulhu, an ancient entity imprisoned and dreaming in the sunken city of R'lyeh, which lies somewhere beneath the Pacific. One or two of Lovecraft's stories involve sites which might be Atlantis, but the image of R'lyeh probably owes more to Theosophist descriptions of Lemuria. For a detailed roleplaying game of all of this, see ***Call of Cthulhu,*** by Chaosium.

However, there had actually been horror stories of relevance to this topic some time before Lovecraft. In particular, the Edwardian British writer William Hope Hodgson, a former sailor, wrote effectively of the sea. Two of his novels, *The Boats of the "Glen Carrig"* and *The Ghost Pirates,* have nautical themes, and the former is set in a kind of horrific Sargasso (see p. 34). Also, Clark Ashton Smith, a member of Lovecraft's literary circle, wrote a few short stories set in Poseidonis, the final fragment of Atlantis, as well as a considerably larger amount of material set in Hyperborea, which he located roughly around Greenland.

CHAPTER THREE

BENEATH THE WAVES

"The earth does not want new continents, but new men."
– Captain Nemo, in Jules Verne's ***Twenty Thousand Leagues Under the Sea***

Originally, the whole point about Atlantis sinking beneath the ocean was that it was lost and gone forever. However, in time, this story gave rise to other ideas. One was the natural corollary of an ancient human dream, of travel and exploration beneath the seas. The ruins of Atlantis might, perhaps, be found and studied.

Another idea was more fantastic. Atlantis, lying beneath the water, could be more than dead ruins. Tales came to include enclosed communities in the depths, perhaps even Atlantis surviving its fall, with human beings somehow living their lives in this environment rather than merely visiting. More fantastic yet, intelligent aquatic races, created by supernatural power (or in later stories, by futuristic science) could live in such a place with no difficulty at all.

Fantasy Sea-Dwellers

In fact, myths and legends, and modern genre fantasy, have always been full of water-dwelling beings of all sorts. Virtually every reference book on the subject, including most ***GURPS*** historical-fantasy sourcebooks, has a few examples. Of course, the nature of these beings differs considerably from story to story.

Greek Myths

The Greeks had numerous legends concerning the sea, which they saw as the domain of Poseidon, one of the most powerful of the gods (and the founding father of Atlantis). Beneath such major deities were hierarchies of lesser gods and spirits; see ***GURPS Greece*** for more details.

Nymphs were minor goddesses, usually the spirits of specific wild places, sometimes the attendants of major divinities. They were magically powerful, at least in their specific sphere of influence, but also tended to be shy. They were not generally malicious, but could be fiercely protective of their home environment, or display a typically divine tendency to whimsy. Fresh-water nymphs were called *naiads*; sea-nymphs were *nereids*. The latter tended to live in shallow waters and sea-caves.

Triton was originally an individual god, a son of Poseidon. However, the name was eventually generalized to apply to a whole class of beings, half-men, half-fish, with scales, claws, and fishy tails. (A few "centaur-tritons" *also* had horses' forelegs.) Tritons were mostly depicted escorting the chariots of marine deities, blowing on conch-shell horns as they went, although at least one story told of one coming ashore and making trouble until tricked and slain; they may have been the marine equivalent of satyrs, with a taste for seducing human women.

Greek art also depicts the *hippocampus*, a creature with the head and forelegs of a horse and the tail of a great fish. This sort of thing would be employed to draw the chariot of Poseidon.

The *sirens* were a small group of monsters, who lived on an island and attracted passing sailors to their doom with supernatural singing. Some depictions make them fish-tailed sea-monsters, though others give them the bodies of birds.

Merfolk

Modern illustrations of "merfolk" depict them as human (and often female) from the waist up, but with scaly fish-tails instead of legs. This is certainly a genuine, long-established part of a general category of European myths (see ***GURPS Middle Ages 1***), which probably started with monsters along the lines of the Greek siren; alluring female temptresses at first glance, but actually scaly monstrosities. (Indeed, some writers use "mermaid" and "siren" interchangeably, and claim that the later European mermaid had the siren's power of song.) However, this is not the only version of the myth, or necessarily the oldest.

Some stories tell of mermaids and mermen coming ashore and evidently getting about comfortably enough, and even of romances between such beings and land-dwelling humans. These stories also tend to involve strange, faerie-like rules and prohibitions, suggesting that these sea-beings come from the pagan realm outside Christian law; some have the traditional faerie aversion to iron. Still, they are clearly close to human in form and manner.

The idea that merfolk could shapeshift between human legs and fishy tail seems to be a modern addition, although there were also tales of creatures such as *selkies*, which could shift between human and seal shapes.

Arabian Nights "Sea-Born"

While many people think of the Arabs as desert-dwellers, they have always been traders, and took to maritime travel happily enough. Thus, the stories of the *Arabian Nights* have their share of maritime incidents, including some underwater races.

These are in fact much like land-dwelling humans; while some sources suggest that they are minor djinn (see ***GURPS Arabian Nights***), this does not really fit the evidence. Rather, the Sea-Born are depicted as humans who, thanks to some ancient magic or blessing, happen to be able to live and breathe underwater. However, some do have tails (presumably fish-like), and refer to ordinary humans as "the tailless." In the usual wonder-saturated way of the *Arabian Nights*, the Sea-Born are shown as forming vast and prosperous nations, living in great and beautiful underwater cities, and wielding great magic.

The Samebito of Japan

In Japanese myth, the *samebito* ("shark men"; see p. J120) are depicted as having long horns, two rows of teeth, black skin, and green eyes. However, despite their monstrous appearance, they are also honorable and loyal; they are the proud samurai of the Dragon King who rules the ocean. They represent an interesting example of formidable fishmen who are much more than monsters.

Modern Fantasy Fishmen

While modern writers and game designers have sometimes adopted and extended images drawn from folklore and myth, they have also added their own twists. Probably the main source for images of modern fantasy "fishmen" is the work of horror writer H.P. Lovecraft (see p. 43). Lovecraft's "Deep Ones" worship dark and twisted undersea gods, and have scales, claws, strength, and bad attitudes. As an added twist, they are interfertile with humanity, and the stories in which they appear are full of dark family secrets and the threat of tainted bloodlines. (Some of Lovecraft's writing is arguably loaded with thinly disguised racism.)

Their main influence on later fantasy has been to provide a potent image of scaly deep-sea horrors (see ***GURPS Fantasy Folk*** for an example). Such "fishmen" combine the cold-blooded, sharp-toothed lethality of sharks with intelligence and organization.

Lake and River Monsters

Mythology is *full* of aquatic creatures, but most are what can freely be called "monsters." Any fantasy RPG's creature collection (including those published for ***GURPS***) will illustrate the point.

Some are "aquatic ogres"; humanoid, powerful, monstrous beings with, likely as not, a taste for human flesh. The addition of a few fish-scales and fins, slime, or green skin is completely appropriate, and helps the monstrous image. Such legends perhaps started as warnings to stop children playing near dangerous water, or as subconscious symbols of the fear of drowning, and then took on a life of their own. In some cases, these creatures have magical powers that help them catch human prey (perhaps symbolizing the fascination of water, or the deceptive peacefulness of dangerous depths). Most legendary trolls or ogres were water-dwellers; the sea trow (p. MAO106) and kappa (p. J118) are smaller versions. Other creatures have more of the magical fascination, with less of the cannibalistic malevolence – if their victims are lucky. (If not, these are just weaker monsters who have to be more cunning.) Examples include sirens and mermaids (p. 45) and the Russian rusalka (p. RU108).

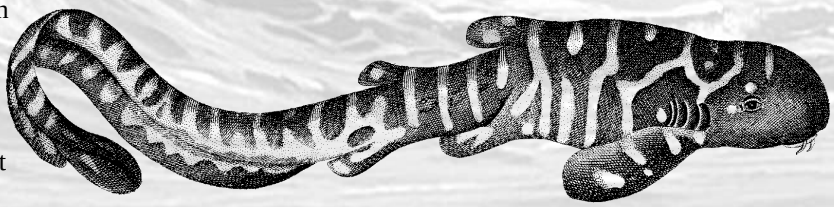
A curiously recurrent theme is the "sea horse," an aquatic being with some of a horse's features all of the time, or all of them some of the time. Some are tameable, or at least fairly harmless; others are yet another type of drowning-monster, who tempt people to ride them, then leap into the water. Examples include the hippocampus (p. 45), the Arabian sea-horse (pp. AN102-103), and the Celtic water-horse (p. MAO103).

Last, some sea monsters are just big. Many of these are based on the biggest real sea creatures, the whale and the giant squid, with the occasional oversized turtle for variety. Giant sea monsters have a tendency to impersonate islands, accidentally or deliberately, as St. Brendan discovered (see pp. 34-35). Another common type is the sea serpent, which has been reported often enough that some scientists seriously wonder if some kind of big, serpentine species (whether a huge eel-like fish, a survivor from the days of the dinosaurs or the earliest species of whale, or a giant seal) might actually be lurking in the depths. ***GURPS Dinosaurs*** has a few candidates for this role, while the purely mythical versions include the Fastitocalon (p. AN96), and various water-breathing dragons.

Science Fiction Underwater

Eccentric thinkers had been speculating about submarines for centuries, with the likes of Leonardo da Vinci doodling designs, and some craftsmen actually trying to build them (see pp. 64-65) – but it took the Industrial Revolution, with its advances in mechanics and materials technology, to make life underwater look at all practicable. As the science fiction genre emerged in the wake of 19th-century industrialization, underwater adventure stories developed as part of it. At first, the main theme was simply travel, and Jules Verne's *Twenty Thousand Leagues Under the Sea* was not the first story to feature such a vessel. Verne primarily depicted his *Nautilus* as an exploration and sightseeing craft, but also showed it as formidable in combat, and the military potential was clear from the first (although it took some work to realize it in practice; see pp. 65-66). The "future war" stories that appeared around 1900, the predecessors of today's technothrillers, sometimes involved submarines, which were shown as dangerous but not unbeatable.

The idea of long-term underwater colonization was slower to develop, although the odd enclosed community did appear, and usually turned out to be Atlantis (see pp. 17-18 for more on this). Few writers took much interest in the possibilities of colonization, industry, or long-term research until the world's land surface began to seem completely explored and increasingly crowded, in the middle of the 20th century.



Modern Ideas

Once SF writers did look to the oceans, though, they found they had a set of ready-made tools. After all, they were already writing about sealed bases in hostile environments, enclosed high-tech vessels, the thrill of scientific research in strange worlds and the commercial possibilities that could follow, and in some daring cases, the possibility of biologically modified humans as citizens of the new frontier. The sea was even sometimes called "Inner Space," in case anyone missed the analogy. Writers who explored these possibilities included Arthur C. Clarke, himself a keen hobbyist diver. Some stories were also set on ocean-covered "water worlds."

It also appeared that Earth's oceans might have their own intelligent aliens; while early claims about the intelligence of dolphins and whales were probably optimistic (see p. 59), they are certainly among the brightest nonhuman creatures on Earth, and even some invertebrates – squids and octopuses – turn out to be startlingly smart when tested (see pp. 59-60). Even if we cannot talk to such creatures now, they look like prime candidates for future genetic tinkering; see ***GURPS Uplift*** and the novels by David Brin on which it is based.

(All this also helped inspire a couple of TV series which perhaps also owed a lot to Jules Verne and the Walt Disney treatment of his novel. The idea of adventuring around the oceans in a big, high-tech submarine never quite loses its appeal, even if it is hard for TV creators to make it very plausible.)

Reasonably realistic SF treatments of ocean colonization recognize a rough but important division. Placing domed communities on the shallow continental shelf is fairly straightforward; small projects have been running for years in the real world, and either submarines or moderately trained divers can reach them quite easily. Expanding them would require only incremental advances in construction skills and environmental maintenance. Writers looking for reasons for such things can introduce fish-farming, mining, or even the need for living space.

Deep-ocean research – let alone colonization – is a far more formidable prospect. The medical problems created by very deep diving are immense (see pp. 49-50). Vehicles and sealed environments would have to withstand staggering pressures. The other conditions, such as temperature and visibility, are all difficult. This is an environment more hostile than some that exist on other planets. It would be an interesting place to visit, perhaps, given the technology, but one that would require extremely good reasons to justify a longer stay.

Undersea SF remains secondary to the space-exploration subgenre; after all, the oceans are finite, deceptively familiar-seeming, and close, whereas space is infinite. However, it can have a place in RPGs; see the forthcoming ***GURPS Transhuman Space*** supplements for a future in which the oceans have not been forgotten.

Venturing Beneath the Sea

The idea of spending time underwater may sound simple at first. After all, the only thing obviously missing that humans need from moment to moment is air, and there are numerous ways to provide that, from pump-and-tube arrangements through portable tanks to complete sealed environments. The reality, however, is more complicated.

Physically, the oceans cover 71% (197 million square miles) of the world's surface area, and contain 95% (285 million cubic miles) of its water. You can travel thousands of miles without ever seeing a trace of land, while there are trenches a mile deeper than Mount Everest is tall. Landlubbers who view the oceans as a homogeneous swimming pool couldn't be more wrong. Above all else, the oceans, being fluid, are in a constant state of flux. Observations and properties may be completely different from one hour to the next. See The Ocean's Divisions for more on this.

In even halfway realistic games, the key factors are the oceans' utter vastness and complexity. From these come perhaps the most important thing for humans: the danger. The oceans are an unforgiving environment, even at the surface, where unpredictable weather and accelerated deterioration of both men and material can lead to instant death. Diving below 150', into the cold dark abyss, requires high technology and entails even greater risk.

The Ocean's Divisions

Layers

In simple terms, the oceans are composed of distinct layers. The *surface layer,* down to about 200 yards, is subject to sunlight, waves, and weather, which heat and churn the water. At the top, the temperature follows seasonal air temperature, but at the bottom, temperatures remain nearly constant throughout the year. In temperate regions in the spring, the surface water will be coldest, gradually warming with depth; while in the fall, it will be warmest, gradually cooling with depth. Also, since sunlight can penetrate only as far as the bottom of this layer, it hosts huge quantities of marine life. Predators and scavengers may live deeper, but the bottom rung of the marine food chain, everything that uses photosynthesis, is found here. This is the only region of the ocean that has been extensively explored. Average worldwide surface temperature is 64°F.

Sonar and Oceanography

Sonar operators have to work in complex conditions, and often have real problems. Probably the single biggest concept they have to work with is *layer depth*, which is the transition point where seawater starts to become cooler with depth. The layer depth will be deeper if the surface temperature is colder (as in the spring), shallower, perhaps even at the surface, when surface temperature is warm (as in the fall). All sound is greatly reduced when passing through the layer; high-frequency sound can be blocked completely. Hence, there are significant sonar range penalties when one object is above the layer and the other is below. Faced with a surface ship using high-frequency sonar, a submarine may merely need to go below the layer to escape detection.

Layer depth has several other effects. When it is deep, a "surface duct" can form which can significantly magnify sounds that are above the layer; one ship or shallow-running submarine may be detected by another at many times normal range. When the layer depth is shallow and the water is deeper than 4,000 yards, "convergence zones" may occur. These are concentric rings, centered on a vessel and spaced at multiples of about 30 miles, wherein sound is greatly amplified. Operators may detect a ship at 60 miles but lose it when it closes to 50 miles, regain it at 30 miles and then lose it again until it closes within normal sonar range.

Sensor operators also have special problems in shallow coastal waters. Shallow areas within the surface layer (see p. 48) have very chaotic sound conditions; sound bounces repeatedly between the surface and bottom, reducing range and often confusing direction. Close to shore, temperature and salinity variations are common, causing sound to bend in strange ways. Also, huge quantities of noisy marine life is found wherever the sun illuminates the seabed, while in modern times, increased merchant traffic and industrial fishing add considerable noise pollution.

In game terms, these problems can justify all sorts of arbitrary modifiers and strange effects when PCs are trying to employ or evade sonar systems. Rules to cover every factor could fill a book, but the main point to note is that sonar operations are rarely an exact science.

The *intermediate layer* (200-300 yards) has water temperature decreasing gradually with depth but remaining mostly constant throughout the year, as it is shielded from the effects of the sun and the weather. The *deep sound channel* (300-400 yards) is a transition zone where sea water stops cooling with depth and maintains a constant 39°F. This region traps and concentrates sounds, especially low frequencies, which can sometimes be detected halfway around the world; special deep-sea arrays in this depth band can track things thousands of miles away. Last, in the *deep layer* (below 400 yards), sea water maintains a near-constant temperature (around 39°) and is at its densest. Warmer or colder water will rise to float above this layer. There is almost no temperature variation below this depth apart from that caused by volcanic activity. Next to nothing is known about this region.

Currents

Cold and warm currents and continental geography form horizontal boundaries, dividing the great expanses into distinct regions. The currents flow like rivers through larger bodies of more stagnant water. Some are nearly constant, while others are variable in speed and direction. All range in speed from about 1 to 6 knots. The temperature transition on the edge of these currents is called a *front*, and can be abrupt as one travels at the same depth across a few hundred yards. Sound bends in strange ways when passing through a front, reducing sonar ranges significantly.

Ocean Floor Geology

Mid-ocean volcanoes are constantly producing new sea floor. The newer material pushes older floor away from the center at several inches per year. Eventually, the oldest portions impact a continent or an oceanic trench, where the material is pulled back down into the Earth's molten mantle. This explains why the oldest parts of the ocean floor are only 200 million years old, compared to several billions for some rocks on land. The sea floor itself is volcanic rock, which, as it ages, collects more and more sediments from the ocean and continental run-off, forming thick layers of mud, sand, or, in tropical regions, ooze.

The *continental shelf* is geologically part of the continents. It slopes gently away from the shoreline to a depth of about 200 yards, before dropping more steeply to the abyssal plains. Depending on location, the continental shelf extends from a few miles to several hundreds of miles out into the ocean. Throughout geological history, the shoreline has risen and fallen with the melting and freezing of the polar ice caps, so that in an ice age the continental shelf will be shallower, and during a greenhouse period it will be deeper. Continental shelves currently make up about 13% of the Earth's surface.

The vast majority of the sea floor consists of *abyssal plain* (or "ocean basin"); huge, generally flat expanses that slope upward to meet the continental shelves and mid-oceanic ridges. The average depth is 4,000 yards, with a maximum depth of 6,000. Abyssal plains make up about 55% of the Earth's surface.

Mid-ocean ridges are submerged volcanic mountain ranges rising steeply above the abyssal plains. They stretch thousands of miles in the centers of the oceans, continuously spitting out magma to form new sea floor. Volcano-fueled thermal vents in such areas can and often do support a rich variety of life completely free of the need for sunlight.

Because of their great depth (2,000 yards on average), it wasn't until 1973 that these ridges were proved to be volcanic, and it took until 1977 to discover that life could not only exist but thrive here.

Last, *deep ocean trenches* are submerged canyons ranging from hundreds to thousands of miles long, usually about 50 miles wide and 9,000 to 12,000 yards deep, with near-vertical drop-offs. These are earthquake-prone subduction zones, where the old sea floor is pushed down to be reabsorbed by the mantle.

Deep-Sea Diving

The key problems with diving almost all involve pressure. The weight of water above means that external pressures increase quite rapidly as a diver descends. Any attempt to pump air down must overcome that pressure; hand-operated pumps capable of meeting this need were not developed until the early 19th century (mid TL5).

Meanwhile, the diver's body has to move air in and out against any pressure differential. If the air is at surface pressure, but the diver's torso is unprotected, the external pressure will effectively squeeze his chest, making breathing ever harder as he descends. Even at a mere 3 feet of depth, water exerts about 200 pounds of force on a human chest, making breathing through a simple tube almost impossible. (In ***GURPS,*** roll vs. ST *every round*, at -1 for every 1' over 3' of depth, to draw breath; on a failure, apply the suffocation rules on p. B122. Lost Fatigue can only be recovered, one point at a time, with a critical success on the ST roll.) Thus, an air supply must in practice be at the same pressure as the surrounding water.

Early Diving Equipment

The profession of diving appears to go back at least 5,000 years. In the 5th century B.C., a diver named Scylis was employed by King Xerxes of Persia to recover sunken treasure; two centuries later, Alexander the Great used divers in the siege of Tyre to clear the city's harbor of obstructions. Two centuries after that, the Mediterranean salvage industry was organized enough to have a published rate of pay for divers. (Working in 3 feet of water entitled the diver to 10% of the value of material salvaged; working in 12' was worth a third of the value; working in 24' rated a full 50% share.)

These divers, however, used minimal equipment, which means that their capabilities were limited. Storytellers and would-be inventors toyed with ways of making submarine exploration possible. Some remained firmly in the realms of fantasy; others were tried, and in some cases may even have been some use.

One myth concerns Alexander the Great, who became a truly legendary figure, supposedly encountering weird creatures and supernatural events in his campaigns across Asia, and seeking to venture yet further, into the heavens and the seas. To accomplish the latter, legend says he ordered the construction of a "crystal barrel," in which he descended into the depths.

In 1828, John and Charles Deane created a diving dress which consisted of a heavy heat-insulating suit, a helmet with viewing ports, and hose connections to a surface air-pump. The helmet was held in place by its own weight and by straps. Exhausted or surplus air passed out under the edge of the helmet. All this worked, but if the diver fell, the helmet could quickly fill with water. Thus, credit for developing the first *practical* diving dress goes to Augustus Siebe, who modified the Deane outfit, sealing the helmet to a short, waist-length waterproof suit at the collar, and adding an exhaust valve. Siebe's Improved Diving Dress was the direct ancestor of many later designs.

In ***GURPS*** terms, Open-Dress Diving skill (pp. CI152-153) becomes available historically at mid-TL5, and quite rapidly becomes obsolete, though Deane's design remained in use for a few years. Siebe's improvements bring in the Hard-Hat Diving skill (p. CI152).

However, as diving technology improved and operating depths increased, more problems became apparent.

"The Bends"

Divers in the 19th century reported persistent problems with "rheumatism." Around the same time, construction workers using caissons (see p. 51) complained that, when they returned to the surface, they would be struck by dizzy spells, breathing problems, and sharp pains in the joints or body. These problems were labeled "caisson disease," but workers on the Brooklyn Bridge project in New York had a shorter term for it: "the bends." Soon, it was causing fatalities.

The cause was established by a French physiologist, Paul Bert, in 1878. At high pressure, nitrogen is forced into solution in the blood and body tissues; when the pressure is removed, the nitrogen literally bubbles out of solution throughout the body, with damaging effects. The solution was to decompress *gradually,* either by ascending slowly or by using a pressure-controlled chamber. This approach was quickly adopted, greatly reducing fatalities and injuries, although accidents still happened.

For rules covering this, see p. CII132. ***GURPS High-Tech*** has more on the practicalities of diving. Decompression procedures involve references to a detailed table of depths and times, which increase markedly for long, deep dives; while a diver descending to 50' will not have to spend more than 12 minutes coming up, anyone venturing to 100' should never spend more than 55 minutes at work, then 32 minutes ascending, whereas a dive to 275' – about the limit established by scientific research in the early 20th century – should rarely involve more than 10 minutes of work, followed by 76 minutes coming up. At TL6, advanced diving bells with reliable pressure control become available; these can be used as comfortable stopping-places during an ascent.

Nitrogen Narcosis

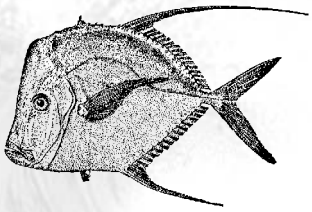
Meanwhile, divers encountered another problem: "rapture of the deep." Nitrogen becomes an anesthetic at high pressures, as more of it is forced into the body's cells; divers breathing oxygen-nitrogen mixtures (i.e., normal air, more or less) found themselves becoming euphoric and wildly forgetful. Given the other risks of deep diving, this could lead to fatal consequences.

The only solution, apart from avoiding such extreme pressures, was to change the gases in the mixture. In 1919, American inventor Elihu Thomson suggested using helium instead of nitrogen, which would also reduce the problem of the bends. This proved effective, despite problems such as cold (helium is a good heat conductor) and the well-known high-pitched "silly voice" effect (caused by helium's lower density), leading to successful dives to 550'. Some experiments went even deeper, but diving too deep, too fast, proved to involve other, secondary problems. Eventually most experts decided that any operation deeper than 300' was best carried out in a diving bell.

In ***GURPS*** terms, divers overreaching the limits of nitrogen-oxygen diving should make frequent HT rolls, and lose one or more points of IQ on any failure. As the effects become worse, they should have to make IQ rolls to carry out even simple tasks. Another viable quick-and-dirty rule is actually to use the intoxication rules (p. CII162-165); treat every 50' of depth as a drink with an alcohol rating of 10, and ignore all modifiers for body size and alcohol-related advantages and disadvantages. Most divers will venture no deeper than 200' on air, though experienced experts can manage 300'; the record (with zero time at the deepest point) is an incredibly dangerous 881'. (The holder later died trying to beat his own record.)

Helium-oxygen mixes are available at late TL6; they prevent these problems, although decompression times, while reduced, are still a problem, long rests may be required on the way down before venturing below 600' to 800', and helium is expensive. (Helium-nitrogen-oxygen mixes can provide a working cost compromise.) Vocal communication may require IQ rolls, especially from divers unused to the "squeaky voice" problem; electronic systems to negate this become available at TL7.

Scuba



The idea of a diver carrying his own air supply has always been around, but the practicalities took some work.

Self-contained underwater breathing apparatus – scuba – can take several forms. "Open circuit" equipment simply vents waste gas and unused air to the water, while "closed-circuit" gear filters and recycles the air. There is also an intermediate "semi-closed-circuit" type.

Serious work on such ideas began late in the 19th century, when it was realized that portable pressurized air tanks simply could not be built to hold enough air to make open-circuit scuba worthwhile; hence, work shifted to closed-circuit designs, which, as they recycle the air, need less of it. Working systems were available by 1880, and were used extensively for military purposes in World War II. (Closed-circuit scuba has a major advantage from the military point of view;

The First Diving Suits?

Various sketches and references in old manuscripts suggest that people were considering methods for supplying air to divers throughout history, although few would have been any use and some may well have killed experimenters. In 1240 A.D., Roger Bacon mentions "instruments whereby men can walk on sea or river beds without danger to themselves," and some crude drawings from 15th-century Europe look like plausible diving suits. Later still, Leonardo da Vinci sketched another impractical design. Nothing really useful appears until the 19th century, however.

In ***GURPS*** terms, the true diving suit is a late TL5 invention, although it could probably have been developed by a genius at early TL5. A character with the Gadgeteer advantage might have assembled something workable at TL4; earlier than that, it would only be possible to invent a diving suit in a highly cinematic campaign.

unlike open-circuit, it does not leave a trail of bubbles to give away the diver's position.) However, these early designs used pure oxygen (reducing the amount of gas that had to be carried, and hence tank sizes and pressures), and this exposed a new problem: oxygen toxicity.

In essence, even oxygen can become a poison under high pressure. This problem also arises below 170-200' with oxygen-nitrogen mixes, especially if the diver increases the oxygen pressure to avoid nitrogen narcosis. (In fact, as the symptoms may seem similar, some inexperienced divers have mistaken one for the other, and taken exactly the wrong, fatal action.)

Eventually, working depth limits of 25-40' were set by navies using these systems (although these have been relaxed somewhat in recent years). Modern semi-closed systems using oxygen-nitrogen mixes and bubble-dispersing valves allow deeper, longer dives (to as much as 180').

In ***GURPS*** games, using a closed-circuit system at 25' for more than an hour or two, or at 40' for more than 10 or 20 minutes, may cause both physical damage and temporarily (or permanently!) reduced HT (due to lung damage). Divers may need military or other specialist training as well as Scuba skill to use closed-circuit equipment safely; see ***GURPS Special Ops,*** pp. 88 and 91-92, for more on this.

By the mid-20th century, air tanks suitable for open-circuit scuba use were available, but the system also needed a regulator valve, or the diver had to spend most of his time adjusting his air supply. A regulator had been invented in 1866 – but had been largely forgotten.

During World War II, two Frenchmen, Jacques-Yves Cousteau and Emile Gagnan, finally brought everything together; after the war, their design became widely available. It is unsuitable for military purposes, and cannot be used below 130', but it grants civilian hobbyists the ability to dive freely for up to 3 hours at a time. Such hobbyists cannot dive deep – venturing even 100' down demands exceptional physical condition and training – but they can still achieve much.

In ***GURPS*** terms, civilian scuba is a TL7 technology, developed in experimental form at late TL6. Because the limits on scuba operations are primarily physiological, they are unlikely to change much at higher tech levels, barring biotech modifications to humanity.

Diving Bells and Caissons

Conceptually, between the personal diving suit and the full-scale, self-powered submarine is the diving bell or chamber. This is crude, inflexible, and limited in use, but it can provide a solution to some problems.

The diving bell is an air-filled chamber with its bottom open to the sea, designed to keep safely upright as it is lowered on a chain or cable. The first crude designs appeared around 1500 (TL4), and held enough air for a single occupant to work on tasks immediately below the bell for several hours. (However, illumination must have been a problem; any light available in 1500 would have used up oxygen while producing dangerous smoke.) In the 1680s, a Massachusetts-born inventor was sending weighted, inverted buckets of air down to a bell to extend the working period on a salvage project, and the English astronomer Edmund Halley used a similar approach with barrels of air in the 1690s. (This probably rates as a very early TL5 technology.) In the 19th century (late TL5), air pumps were developed that could provide a diving bell with an air supply for extended periods, leading to the development of the *caisson,* a large box with a pumped air supply, placed on the bed of a river or sea. Caissons could even have access to the surface, and many of the great bridges and other engineering projects of the era were built on foundations laid by workers in caissons. The diving bell and caisson remain part of the underwater engineer's toolkit to this day.

The Pressure Support Advantage

Pressure Support (p. CI63) is a racial/super advantage which is defined as granting immunity to various levels of pressure over and above the normal atmospheric conditions of the character's home world. (For aquatic beings, it can be assumed to grant tolerance of the pressure at much greater depths than their home environment; without it, they may be like shallow-water fish that cannot dive into the deep ocean trenches.) It grants no immunity to localized pressure changes, such as being punched or explosive shockwaves; at the GM's option, any *sudden* pressure changes (such as, say, result from a submarine's hull being breached) could be considered equal to explosive shocks, and hence still be harmful.

Not all aquatic races have to have this advantage, but without it, they may be limited to a fairly narrow "layer" of the seas. Those whose native environment is at very high pressure – say, races evolved in deep ocean trenches – may need the 15-point version, or Vacuum Adaptation (pp. CI69-70), if they want to operate freely in shallower waters; otherwise, they may suffer all manner of unpleasant consequences if dragged to the surface.

For more-or-less human beings, Pressure Support permits breathing at greater depths (if the character has to breathe) despite the pressure of water on the chest, and grants immunity to the bends (p. 50), nitrogen narcosis (p. 50), and in the more expensive versions, to the possibility of being physically pulped by pressure differences inside and outside the body. (Realistically, beings with the 10 or 15 point versions should probably have high ST and some natural DR.) Other species will be prone to these or analogous medical problems if they do not have this as a racial advantage.

Note that, if the character's natural environment is at Earth-normal pressure, the 5-point version of Pressure Support permits safe operation to about 300' depth of water, and the 10-point version permits dives to a little over 3,000'. The former is about equal to the practical limit for human divers with the best equipment but without vehicles or diving bells; the latter is impressive, but nowhere near the deepest parts of the Earth's oceans. For simplicity, kind GMs might choose to redefine the two levels as "adequate for the continental shelves" for 5 points, and "anywhere except deep ocean trenches" for 10.

Diving Barrels

For something slightly more mobile, before the development of true diving suits, a worker could be sent down in a rigid, enclosed personal contraption. In 1715 (***GURPS*** TL5), Englishman John Lethbridge developed a reinforced, leather-covered barrel of air, equipped with a glass porthole for viewing and two arm-holes with watertight sleeves. This was lowered from a ship and maneuvered much like a diving bell. It had no provision for any sort of continuous air supply, but held enough air to operate for over half an hour; Lethbridge worked on several successful salvage operations, and reported that he could operate successfully at a depth of 60' to 72'. Such rigid designs obviously have severe limitations, although arguably some modern armored suits for use in very deep water are little more than high-tech applications of the same concept.

Deep Operations

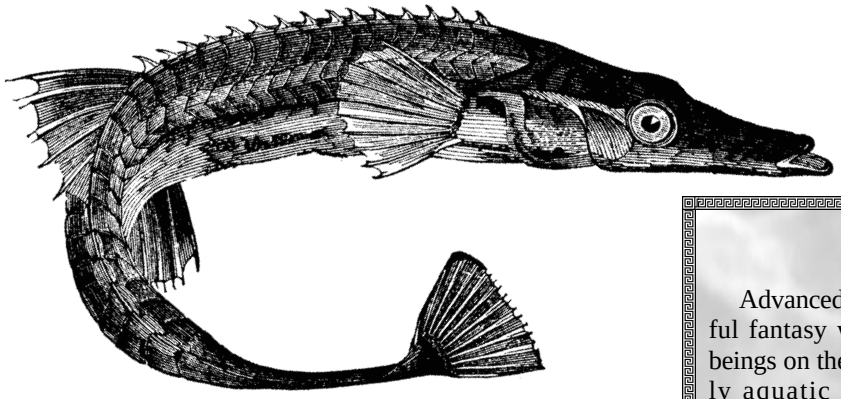
One technology used for deep, prolonged dives is based on the fact that, once a diver's tissues are saturated with gas at the working depth pressure, decompression times do not increase. Thus, rather than shuttling back and forth between the depths and the surface, with long stretches decompressing on the way up, "saturation divers" rest and sleep in submerged bases or pressure chambers, remaining at high pressure throughout a mission. This is a complex procedure, requiring massive technical support and scientific expertise, but bases have been established 600' deep, and experimental dives have reached 2,300'. In high-tech games, GMs may assume that procedures become standardized, and equipment may improve, but even so, such dives should always be treated as adventures in themselves.

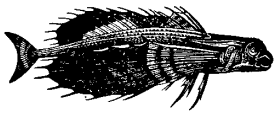
Even without full saturation techniques, modern professional diving, using helium-oxygen mixtures, advanced diving suits with air recycling, and decompression chambers, can achieve impressive results. Divers have reached 1,600' in the open sea, and a 1981 civilian operation recovered gold ingots from a wreck at 800'. In game terms, operations are probably relatively straightforward for highly skilled specialist teams down to 1,000', and feasible to 1,600'; at higher tech levels, these numbers may increase.

Ultra-Tech

One proposed technology, seen in the movie *The Abyss*, is "Fluid Breathing": filling the diver's lungs with a special oxygen-saturated liquid rather than air. This has been tested on laboratory animals, and there are rumors of classified ongoing military research, but there are practical problems, not the least of which is getting anyone to fill their lungs with liquid. (There are possibilities for comedy roleplaying here.) The research *has* produced medical applications. Games might introduce this as a TL8 technology, requiring equipment costing several thousand dollars and special training, but permitting *very* deep dives; if so, note that the diver is rendered effectively mute.

Other possibilities currently under discussion involve introducing selected bacteria into the diver's body, to metabolize waste gases and thus reduce decompression times. A futuristic version might use genetically engineered organisms.





Diving Equipment

Costs

Full diving dress weighs around 150 lbs., and a TL5/6 two-man air pump weighs 100 lbs.; modern electric pumps may be lighter. Lines and air-hose are 10' to the pound. A suit costs $500. PCs should also allow for the salary of a surface crew, including pumpers or pump attendants and a line-tender to prevent air-lines from fouling, or make sure that their fellow PCs are trained and trustworthy.

Scuba costs vary, but a reasonably full set is $500-$1,500. (Cheaper equipment is reliable enough, but more expensive gear makes some tasks more comfortable; PCs who skimp may be subject to extra Fatigue penalties during complex operations, at the GM's option.) A semi-closed system costs around $1,000, a closed system $2,000, but either might be harder to get hold of than civilian open-system gear. A wet suit costs from $150 upward; a dry suit starts at $600. A standard air tank weighs about 10 lbs. and costs about $250; how long it lasts underwater depends on depth (higher pressures reduce times), conditions, and diver skill, but 2-3 hours is around the norm. (Decompression limits may be the greatest concern.) More and less capacious tanks are available; the former are heavy and cumbersome, the latter are relatively expensive. Air refills are $5 per hour if you don't have your own compressor. Tanks take 10 seconds to hook up and 2 seconds to jettison.

These are TL7 values, although they are unlikely to change much over the next few tech levels; for more advanced ideas, see ***GURPS Ultra-Tech,*** pp. UT22-27.

Combat Issues

It may be a stereotype, but for a diver, losing air-hoses or masks *is* potentially fatal. Mostly, these are about as hard to target as the face (-5 to hit), but much depends on equipment design; an ultra-tech "gill mouthpiece" might be at -6 or -7, while grappling an open-dress diver's helmet might be at only -2 or -3 (and should be brutally effective). Attacks against a scuba diver's back would have to be aimed with a -4 penalty *not* to hit his air-tank, although they are more likely to strike metal tanks than vulnerable hoses. Damage to a wet suit or dry suit (usually meaning cutting or impaling attacks to a location it covers that do even a single point of damage, although some designs may have some DR) will leave the wearer suffering the ambient cold (see pp. CII139-140).

Homo Marinus

Advanced genetic engineering, an extremely powerful fantasy wizard, or a whimsical god might create beings on the human body-plan, but adapted for a purely aquatic life. In ***GURPS*** terms, the minimum requirements are the replacement of air-breathing lungs with gills or similar (a 0-point feature: see p. CI56), and a lot of modifications to physiology (realistically meaning everything from webbed feet, through subtle changes to gross limb articulation, to biochemical tweaks) to give the creature the Aquatic disadvantage (-40 points: see p. CI101). Ideally, *Homo marinus* would also have some level of Pressure Support (p. CI63) and Temperature Tolerance (p. CI30), to enable him to travel widely in the oceans, but neither is mandatory; a creature might be perfectly adapted to a particular depth and temperature, but no more happy than an air-breathing human if transported to greater or lesser depths or hotter or colder water. However, many interesting parts of the sea suffer significant temperature fluctuations, and a water-breather avoids certain problems with pressure suffered by an air-breather, so the advantages should usually be applied. Enhanced Move (Swimming) (p. CI54) would be another likely addition, probably linked to Reduced Move (Running) (p. CI103) as the creature gains flippers in place of feet; other plausible disadvantages include vulnerability to desiccants (a Weakness; see p. CI106), and perhaps the ability to operate only in salt *or* fresh water, but not both (a level of Increased Life Support; see p. CI102).

In ***GURPS Bio-Tech*** terms, most of these modifications become possible at TL9, but Pressure Support requires a higher TL, as do extreme levels of Temperature Tolerance.

The Cetacean Option

Genetic engineers and "scientific" gods or wizards might give modified humans deep-swimming capability by making them, not like fish, but like dolphins or whales – giving them the ability to *store* air. This might well be an *easier* task than giving them gills; after all, the cetaceans could be taken as a biological model, and they, like humans, are mammals.

This means Oxygen Storage (14 points: p. CI62) along with the Aquatic disadvantage. Some degree of Temperature Tolerance and especially Pressure Support become virtually mandatory, as the whole point of the design is that the being should be able to surface for air and then dive deep. ***GURPS Bio-Tech*** permits an adequate set of changes at TL9.

Homo Amphibius

A purely water-dwelling "human," as described on the previous page, abandons the land entirely. This is all very well, but what many magical or scientific projects and stories will need is a genuinely amphibious being, as comfortable on land as in water. This demands Gills (or the equivalent) as well as lungs (10 points: see p. CI56) and the Amphibious advantage (10 points: see p. CI49), and makes some level of Pressure Support and Temperature Tolerance virtually mandatory.

Realistically, this would be a complex project in biological engineering. There are few animals to use as models for any part of the process, and subtle "biological switches" would have to be designed to ensure that the amphibian could switch safely between two different forms of oxygen intake and two radically different levels of pressure and humidity impinging on exposed body tissues. Furthermore, the being would need a versatile sense of balance and body position and variable reflexes to handle both environments. In ***GURPS Bio-Tech*** terms, it should be treated as a TL10+ project. Gods and great wizards might be slightly more casual about the whole business, but the creation of an entire race is still a major task that would presumably need serious justification.

Options

Advanced genetic engineers or wizards should also look at other concerns for their aquatic creations. Very Thin Fur (p. CI56) or Very Light Scales (p. CI57) are essentially cosmetic changes in themselves, but might be natural side-effects of the most efficient way of granting the Amphibious advantage or Temperature Tolerance; heavier versions of either might also seem interesting. Speak Underwater (p. CI66) is obviously a good idea, if hard to justify realistically; genetic engineers might prefer to design additional, more exotic modes of communication. Given the problems of vision underwater, a Nictating Membrane (p. CI62) and all sorts of enhanced senses could also be useful; despite its appeal, Sonar Vision (p. CI66) might be very difficult to engineer (dolphins have it, but they need large body structures for the purpose). 3D Spatial Sense (p. CI31) might be useful to a swimmer. All of these modifications are discussed in ***GURPS Bio-Tech.***

Diving Technologies

However well swimmers can get around underwater, they have limited speed and endurance. A *diver propulsion unit,* essentially just a small motor and propeller, is one answer. A late TL7 design, worn on the back, uses a rechargeable battery to give 30 minutes running time and a speed of 2 to 4 mph. It weighs less than 30 lbs. and costs $1350. Hand-held designs are also possible. For higher-tech versions, see p. UT114.

For longer tasks, *miniature submarines* are available from late TL6 onward, from open "torpedoes" to enclosed long-range models. As a rule of thumb, late TL7 organizations might have use of a vehicle with a crew of eight and space for four passengers, moving at 15 mph above or below water, capable of diving to 500', and traveling up to 2,000 miles on the surface or 40 miles underwater on batteries. This would cost around $1,000,000 if it came on the open market. A military "Swimmer Delivery Vehicle" – a submersible, motorized rubber raft, open to the water when submerged – comes rather cheaper, and moves at 35 mph on the surface, 3 mph while diving.

One way around many of the problems of diving is a rigid *diving suit* that provides sealed protection, with its interior at surface pressure. The drawback is that the protection has to be very strong – phenomenally so for very deep operations – and is usually cumbersome. Obviously, accidents or attacks that penetrate the shell tend to be quickly deadly to the occupants; see p. CII144 for rules. TL6 armored suits had a nominal capability of 700'; specialist TL7 designs can reach 2,000'. GMs may extrapolate this progress for higher tech levels, or build suits using the ***GURPS Vehicles*** rules.

Temperature

To add to other difficulties, the deep oceans are *cold.* Deep-operating divers, or any divers working in cold weather, need excellent heat insulation. (See p. CII139 for basic rules.) The standard hobbyist wet suit holds a thin layer of water next to the diver's skin, where it reaches body heat and then acts as an insulator; in colder conditions, sealed *dry suits* surround the diver with air for the same purpose. Specialist deep-diving suits may be filled with air, or with water warmed by a heater within the suit. (A diver whose heater failed would have to repair it quickly or head for safety, worrying about decompression along the way.)

Amphibious Supers

As mentioned on p. 111, superhero comics have an extensive tradition of aquatic heroes and villains. Naturally, these characters tend to have the ability to breathe water, to withstand extreme pressures, and to swim swiftly (and sometimes incredibly fast). However, none of these powers are terribly useful against the majority of land-based problems, so most are also given other powers.

These tend to include superhuman strength and resilience, partly out of comic-book habit and partly on the grounds that a being capable of withstanding the pressure of the ocean depths should be pretty tough. Other "aquatic" powers can include control of fish and other sea-life. Beyond this, each such character tends to have his own special abilities, such as flight. Many are also associated with hidden sub-oceanic civilizations, giving them access to weird technology, groups of followers, and so on. An aquatic background also tends to imply certain weaknesses, such as a susceptibility to dehydration, heat, or flame, while high rank in an unusual culture can imply arrogance, or unfamiliarity with "surface world" customs. There is also a secondary category of "normal human" scientist-engineer characters who build and operate equipment that enables them to operate under the sea.

An aquatic character can be an interesting addition to a PC superhero group, but as comic writers have sometimes found, this can make for problems with plots. Either the GM runs normal land-based scenarios, in which case the aquatic character gets little use out of powers that may have cost quite a few points, or events take place at sea, and the aquatic hero steals all the glory from his land-dweller teammates. Still, in a game set, for example, in a coastal city, an aquatic super with some versatile powers as well as water breathing and pressure tolerance can make an entertaining PC.

Underwater Vehicles

Rather than trying to protect individual humans from the deep, it may well be simpler to put them in a sealed vehicle, which can also mount other equipment and generally serve as a useful base for adventuring. The submarine was a dream at TL4, experimental at TL5, a deadly weapon at TL6, and continued in that role and as a strategic weapons platform at TL7. It looks set to remain a component of every major navy at TL8 and some way beyond. Small civilian submarines have been used for research, engineering support, salvage, smuggling, and as rich men's toys. ***GURPS Vehicles*** has rules for game treatments; see pp.64-71 for a range of designs.

Submarines can be built to withstand high pressure, but it is a major engineering task making sure they are up to this. In fact, modern military submarines dive only to relatively limited depths, and are rather different from deep-sea submersibles. Problems of air supply and power systems capable of prolonged use underwater have also always been significant. Undersea adventures with military submarines flitting about like slowed-down combat aircraft are strictly cinematic, although the idea may become more plausible at futuristic tech levels. In realistic modern-day games, voyages to the bottom of the sea are likely to involve small research submersibles launched from support ships, not full-sized submarines. Cinematic games, of course, can do things differently.

Incidentally, it would logically be possible to pressurize submarines to match the pressure of the surrounding water, removing the need for a heavy and expensive pressure hull. However, this would then expose the crew to all the problems of decompression described above for divers.

Perhaps the best-known experiment was the U.S. Navy's "Sealab" program in the 1960s, which was linked to work on saturation diving techniques (see p. 52). Although this produced useful results, it was abandoned after problems with the increasingly complex technology. It would seem that *long-term* undersea colonization is impractical at TL7. Higher-TL societies might accomplish more.

On the other hand, for humans in imaginary but realistic worlds, small underwater bases might be possible at TL6 or even late TL5, at least in shallow water, and with limited operational timescales. (This would require serious effort and "steampunk" ingenuity, though.) Underwater colonies up to about TL8 will be an exception to the rule that colonies tend to have lower tech levels than their "parent" societies; they will need all the advanced technology that they can get.

Undersea Colonies

If submarines have problems, long-term underwater colonies have more; they have to have reliable air, to be provided with food and other supplies, and to provide enough space for the occupants to remain healthy and sane. Admittedly, they do not need power for propulsion, but they do need it for heat, light, and other purposes.

They also need a system of access that enables air-breathing visitors to come and go. The airlock is a simple enough concept, of course, but enabling submersibles to dock is yet another design headache. And they have to be built, or at least assembled, underwater. While modular construction helps, the larger and more serious the underwater community, the more complex the task.

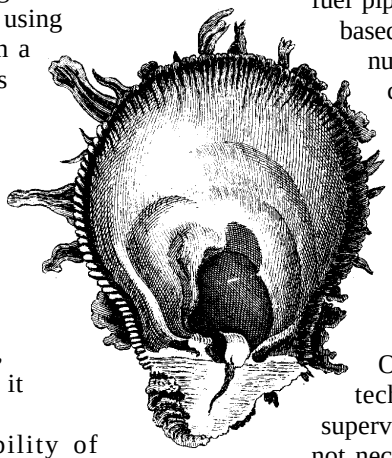
It is probably safe to assume that few undersea habitats will ever be built deeper than human divers can work outside of vehicles. Maintaining a safe internal atmosphere long-term is a problem which may see some ingenious solutions (and which is similar to that faced by space station designers, of course). Brute-force engineering would involve a system of monitors, chemical processors to extract oxygen from seawater, and so on, whereas a relatively low-tech solution in a large enough base (with enough power to run good lighting) might involve internal gardens.

Undersea Industries

Anyone living underwater, whether an Atlantean survivor or a high-tech colonist, would need some reason for being there, which suggests that they must be doing some kind of work. And interesting though exploration and research may be, large-scale underwater operations would depend on a more prosaic set of considerations. So what, in the way of living and working, is harder underwater, and what would be easy enough to encourage the effort of moving there?

To begin with, there are some severe constraints on basic technology underwater, to the extent that many people would question the possibility of an aquatic race developing any kind of technological civilization whatsoever. Fire is effectively impossible without specialized resources, and in fact, water is so good a thermal conductor that any kind of heat source would tend either to cool down rapidly or to make things uncomfortable for beings in the vicinity. This makes metal-working, ceramics production, and other processes difficult, to say the least. High-tech equipment can deal with such problems to some extent, but that *presumes* the existence of a high-technology culture. Explosions also are more dangerous; water is good at transmitting shockwaves.

Many metals would corrode rapidly, even if they could be produced or obtained. Normal cement or concrete would have problems; they may be waterproof once set, but they are made from water-soluble components. One approach currently being investigated is to deposit minerals out of seawater using electrolytic processes, resulting in a hard material, referred to as "seacrete," somewhat resembling shellfish shells. Alternatively, a high-tech or fantasy culture might select, cultivate, or genetically engineer species of coral to grow in a controlled manner, producing useful structures. (This would not necessarily be a very fast building method, but a patient society might find it acceptable.)



This introduces the possibility of "biotechnological" undersea civilization. A futuristic society with advanced genetic engineering might choose to make its undersea colonies self-supporting, not only by creating water-breathing humans and better undersea food species, but by providing them with plants or animals that can extract minerals from seawater, create useful compounds and materials, and perhaps even produce light or serve as transport. A low-tech fantasy aquatic culture might achieve the same results, given a *very* long history of selective breeding, powerful and subtle magic, or the assistance of helpful gods.

That aside, a realistic low-tech aquatic society will tend to have inferior weapons and tools compared to its land-based neighbors. Fantasy art notwithstanding, seashells and sharks' teeth make poor weapons compared to metal, and unless some giant sea creatures turn out to have hides that do not need heat-based treatment, the culture's armor will be unimpressive, too. See ***GURPS Low-Tech*** for rules on TL0 weapons in a TL1+ world. If its citizens have human-like priorities (rather than being fey supernatural beings) such a culture will have a large incentive to trade with metal-working land-dwellers, bartering edible delicacies and treasures of the deep for metal goods and ceramics. Of course, if the humans refuse to trade or get too greedy, they may find that their ships are terribly vulnerable to water-breathing pirates.

On the other hand, a high-tech society may find that some of its most useful metal supplies come *from* the deep sea, in raw form. By a quirk of oceanic chemistry, manganese (and some other minerals) precipitate out of seawater and form pebble-sized nodules that cover parts of the seabed. These might well prove a very valuable source of minerals. However, they are found on the deep ocean floors, below the level at which TL7 or 8 bases could easily be established, and are more likely to be exploited by dredging from surface ships. Other valuable mineral deposits might also be found underwater, though most would, again, probably be accessible to surface-based operations.

Power Supplies

An undersea community will need energy, especially if it employs power-hungry life support systems. A base supplied from the surface could have anything from power cables or fuel pipelines run from the coast (though any power plant based on combustion will consume precious oxygen), to a nuclear or geothermal power plant. A self-supporting community has more complex problems.

A relatively high-tech culture might find various sources of energy on or under the water. Wave or tidal power is sometimes exploited in the real world. Ocean-dwellers might come up with an undersea equivalent of the windmill. It is also possible to use the difference in temperature between different "layers" of the ocean to produce useful power, with a large-scale system called OTEC (Ocean Thermal Energy Conversion). A high-tech society might even establish ocean colonies to supervise and maintain OTEC systems; these bases would not necessarily have to be under the sea, but parts of the system would be.

Food Production

One industry that has long been conducted at sea is food production – mostly, of course, in the form of fishing. However, existing sea food production is not only surface-based; arguably, in certain crucial senses, it barely qualifies as an "industry."

In fact, most fishing is the last vestige of Stone-Age hunter-gatherer culture. The fish are wild animals, which are tracked, pursued, and caught and promptly killed for consumption. (Static shellfish represent the "gatherer" element.) Advanced technology – sonar, satellite navigation, nylon nets – merely makes the hunting more efficient. An aquatic society that resembled land-based civilization would presumably take a different approach, *farming* the seas as humans farm the land.

This is something that is being seriously discussed as an option in the real world. Not only is farming more efficient than the hunter-gatherer approach, which might mean that the oceans could become a major source of food for the world's growing population, but it may be crucially more sustainable.

When hunting is conducted on an industrial scale, using high technology, it runs the risk of overexploiting the prey species and wiping it out, and this is precisely what is happening at sea. There is a serious concern that overfishing (combined with pollution and perhaps climatic change) is driving certain species close to extinction (and certainly making catching them economically unviable). The modern fishing industry may have to change completely.

Of course, there is already a certain amount of "sea farming" going on, but only on a fairly small basis; shellfish are cultivated on prepared sites, and some fish are grown in cages. A true system of "aquaculture" (or "mariculture") would have to work on a larger scale. Apart from anything else, it might have to deal with a different balance of species.

The trouble is that most of the seafood currently eaten comes from high up the food chain; it consists of large predator fish, which eat smaller fish, which in turn eat plankton or vegetable matter. Many pounds of "primary" organic matter are needed to produce one pound of edible fish. On land, most agriculture concentrates on vegetable products; meat is ultimately an expensive luxury for most of the world's population.

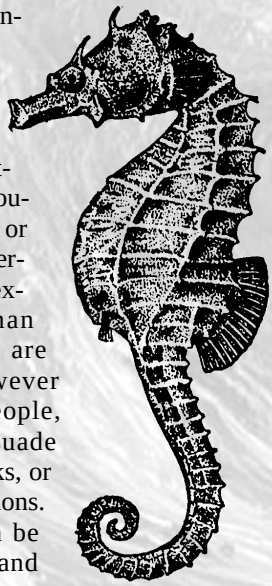
However, for aquaculture to go the same way, it would have to find "primary" foodstuffs that humans could and would eat. (A nonhuman undersea race might have fewer problems in this direction, of course.) Some algae and seaweed are already cultivated, and krill harvesting might have possibilities, but a more popular use for such species might be as industrial chemical feedstock. (Algae are already cultivated to provide ingredients for paints, construction materials, and cosmetics.)

Note that, like sea-based power generation, aquaculture used to supply products for land-dwellers might imply ocean colonies, but they might well be surface-based, not submerged. There is no reason to go to the extra expense of underwater development if small islands and floating bases will serve. However, an undersea society might use aquaculture to support itself.

Domesticated Sea-Life

One other realistic problem for underwater civilizations looking to farm the oceans might be a lack of useful animals.

This may sound strange, given the quantity and variety of fish regularly taken from the sea, and it is true that some of these could quite possibly be raised in cages for eating, along with shellfish and lobsters (which might be bred quite large). However, a complex society mirroring land-based civilizations would really need *tamed* or *domesticated* animals, if only for the look of the thing – and that comes harder.



These terms have specific meanings here. A *tamed* animal is one that has been taken from the wild and trained to tolerate human company, perhaps even performing specific tasks. Countless land animals and birds are routinely tamed, as pets, for hunting, or for show. However, they need a certain amount of intelligence and flexibility to learn to live in human society, and fish, for example, are probably just too limited. However accustomed they became to people, there would be no way to persuade them to do useful or amusing tricks, or *not* to swim off in random directions. Dolphins and small whales can be tamed, even by land-dwellers, and some more intelligent squid or octopuses *might* be managed, but the options are limited.

Authentically *domesticated* animal species are even rarer. These are fully integrated into human society, with their population replenished by captive breeding. This requires that the animal be willing to mate in captivity, and probably that it has instincts based on a pack/herd social system that human trainers can exploit. (Economically, it also requires that the animal grows fast enough to be worth exploiting, and that it should not be too expensive to feed.) In thousands of years, humans have only domesticated a handful of large mammal species. Among sea-creatures, dolphins and porpoises are probably the likeliest candidates. Seals and sea-lions are also trainable, and there have actually been suggestions that they might be domesticated, but they require access not only to the open air, but also to beaches for resting and breeding.

Of course, fantasy aquatic races may have a strange empathic link with some aquatic species, enabling them to turn up in company with formidable "friends." Evil fantasy fishmen may ride into battle on sharks, and merfolk traditionally get on well with dolphins. And likewise, genetic engineering might achieve almost anything.

Underwater Sensors

Human senses are of limited use in deep water, which absorbs light in visible wavelengths and makes normal hearing largely ineffective. (Fiction often underestimates these problems.) High-powered lights can help, but even they suffer severely limited range, and of course they negate most attempts at stealth by the user.

The precise effects of these problems vary. Sunlight never penetrates more than 200 yards below the surface at best. The amount of silt in suspension in the water is also a consideration; shallow, muddy areas with strong currents reduce visibility to a few feet. Hence, underwater vehicles are usually equipped with special sensors; man-portable versions are at the limits of TL7 capacities.

The primary current technology is *sonar,* a TL6 invention which uses sound to detect large objects. *Active* sonar scans an area with sound waves it generates itself, while *passive* relies on sensitive microphones to detect the characteristic noises made by vehicles or other objects. The *Magnetic Anomaly Detector* (MAD) is a TL7 invention which senses fluctuations in the Earth's magnetic field caused by the presence and movement of large ferrous objects. *Radar* is ineffective underwater, but *ladar,* a TL8 technology resembling radar but using laser light instead of radio waves, works in clear water at 5% of its normal ranges. (At higher Tech Levels, blue-green ladar may become available, with better range underwater but less in air.) The TL9 *multiscanner* works by analyzing a wide range of energies, making underwater searches far more effective. The invention of the *gravscanner* at TL11, using gravitic technology to analyze the mass and speed of any object, adds another option.

Details of all these systems, and rules for incorporating them into vehicles, are given in ***GURPS Vehicles.*** At TL8 or above, most available sensors might also be made small enough to be carried by individuals. Systems could use

microprocessors to analyze the information they acquire, and show it onto a hand-held screen or a "head-up display" on a diver's mask. A TL8 personal sonar system with a quarter-mile range might weigh 10 lbs. and cost $1,000; its drawback as military equipment, however, is that it would be automatically detected by passive sonar or hydrophones. At TL9+, systems using advanced passive sonar analysis, MAD, or multiscanner technology should enable a trained diver to operate freely in dark or murky water (at a cost of several thousand dollars per device).

Dolphins and Whales

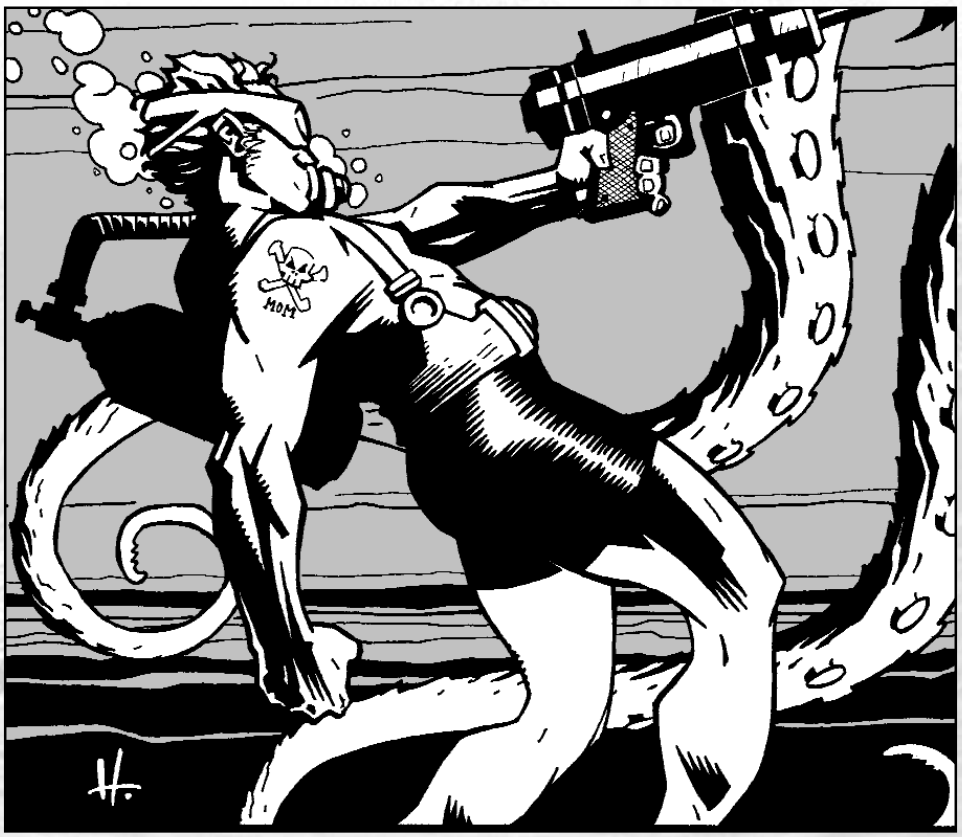
Many people think that the oceans already hold several near-sentient species; the dolphins and whales. Certainly, these aquatic mammals are highly intelligent, with complex behavior patterns and the ability to learn. They communicate, sometimes using the famous "whale songs," which are complex and highly varied. Their brains are large, even in proportion to their body size, and there are legends about their cleverness in many parts of the world.

All this *may* justify the widespread belief in cetacean sentience. It is possible that the crucial difference between cetaceans and humans is hands; however smart they are, cetaceans have never been able to manipulate their environment, and hence their brains have never developed the *type* of intelligence needed to support this. However, it is also possible that cetacean brainpower has been exaggerated. Continued research, while establishing that dolphins and many whales are certainly very smart animals, has not proved that they are sentient, or found enough complexity in their languages to hold what a human would consider a real conversation. (Observers have also found dolphins to be far less gentle than their old reputation; they have even been observed harassing smaller porpoises to death, apparently for fun.) One theory is that their large brains are required because water-breathing aquatic animals cannot afford the time to sleep as deeply or as long as land creatures, and a brain requires deep sleep to reorganize itself for efficient operation; a cetacean might thus not get as much good use from a given size of brain as a land animal.

The notes on dolphins in ***GURPS Bestiary*** (p. BE12) gives them IQ 8; the associated racial package (p. BE109) adds the Bestial, Dull, and Presentient disadvantages. This might be considered slightly generous; a more cynical version would give them the same IQ as a chimpanzee (6) or even a cat (5). On the other hand, a domesticated dolphin would probably shed the Bestial disadvantage quite easily, and a more cinematic version would not be Dull. Killer whales (actually closely related to dolphins; see p. BE23) are comparable, but larger, probably more aggressive, and perhaps downright vicious by nature. Toothed whales (p. BE37) might have comparable intelligence, and are *very* large. (Baleen whales, being filter-feeders rather than active hunters, are probably less quick-witted than their toothed cousins, or at least more staid.)

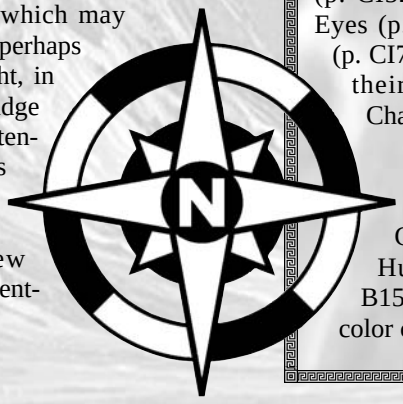
Sentient Cephalopods?

Science has come to a slightly startling conclusion about oceanic life; the vertebrates do not have all the brains. Indeed, most fish have negligible IQ, but some *cephalopods* – octopuses, squid, and cuttlefish – seem smarter. They are cunning hunters, can learn, and, in some cases, communicate. They also have good eyes (which some squid can focus separately). Given that their communication may be based on changing pigmentation patterns, while their life-cycles are radically unlike the human (many species give birth to large numbers of offspring, then die), their intelligence is hard to assess, but divers and laboratory workers have become convinced that it is comparable to that of mammals. The ***GURPS Bestiary*** rates most at IQ 4, while allowing that large squid might have anything up to IQ 8. (Actually, some octopuses have been compared to canine puppies, suggesting IQ 5.)



Squid, however, are very hard to research. The giant squid (p. BE33) has *never* been properly scientifically observed, and knowledge of it shades into legend; however, it must have space for a substantial brain. Perhaps the most impressive fairly well-studied species is the Humboldt Squid of the Pacific (p. BE33), which grows up to 10-13' long from crown to outstretched tentacle-tip, and weighs 100+ lbs. This highly aggressive predator has been known to attack human divers, allegedly lethally; it does have sharp-edged suckers on its tentacles as well as a powerful beak. (Fortunately, it is not venomous; some cephalopods are, with venoms among the deadliest on Earth.) Humboldt squid have been observed hunting singly and in small shoals, and there is speculation that they use visual communication to coordinate attacks. Nor are octopuses negligible; they can move through almost any aperture large enough for their beaks, and each of their eyes, with their cross-shaped pupils, has depth perception. If stranded on land, octopuses can survive for hours, and drag themselves around fairly effectively.

Studies also note some oddities about cephalopod perceptions. They appear to be color-blind, but can perceive the polarization of light, which may give them a navigational advantage (perhaps Absolute Direction, Only in Daylight, in ***GURPS*** terms). Also, they cannot judge the shape of an object by feel; their tentacles are *too* flexible, so their brains cannot read their positions with sufficient precision. (This would probably have to represent a new ***GURPS*** disadvantage, if it is sufficiently limiting to be worth points.)



Cephalopod Characters?

The idea of playing intelligent squid and octopuses, or using them as animal companions, is interesting but challenging. It may be a matter of irrational aversions, but their intelligence seems *alien*, and realistically, their life-cycles would make for difficulties; most are born very small, grow very fast, breed once, and die soon after. On the other hand, they have a weird curiosity value, and associating them with an underwater NPC race could both give players a sense of strangeness, and provide the NPCs with some very useful assistance. Sentient, tool-using cephalopods, with life-cycles that allow them to build a culture, could be formidable; the real species have several useful attributes.

Cephalopods defined as characters have Sharp Teeth (p. CI67), representing their beaks, Injury Tolerance (No Neck) (p. CI58), and Extra Arms (pp. CI54-55); octopuses have eight tentacles, while squid have eight tentacles and two longer arms which may have increased reach (they usually catch prey with the latter and then hold it with all ten limbs). These limbs have Extra Flexibility (p. CI55), and possibly Ambidexterity (p. B19) as all tentacles seem equally useful (unless the GM considers that Extra Flexibility effectively encompasses that), but also probably some Reduced Manual Dexterity (p. CI83) or Bad/Poor Grip (p. CI101); tentacles are not as good as hands for fine work. Cephalopods have the disadvantages Aquatic (p. CI101), Cold-Blooded (pp. CI101-102), Color Blindness (p. B28), and Invertebrate (p. CI102). Nonsentient wild animals have Alertness (p. B19) to raise their sense rolls to around 14, Bestial (p. CI101), and Presentient (p. CI103).

Squid and some octopuses also usually have Enhanced Move (Swimming) (p. CI54) with the Limited Use limitation (p. CI111), representing their "water jet," and Smoke (p. CI73), representing a defensive ink cloud, again with Limited Use. Many (perhaps all) species have Peripheral Vision (p. B22), Regrowth (p. CI64), and Decreased Life Support (p. CI52), and possibly Independently Focusable Eyes (p. CI58). Some also have Poisonous Venom (p. CI71), delivered by a bite, and some can control their skin color, giving them a few levels of Chameleon (7 points/level, p. CI51).

Realistically, most cephalopods combine Early Maturation (p. CI53) with Short Lifespan or even Self-Destruct (both p. CI104), the latter applying after breeding. Humans *may* find cephalopods Hideous (p. B15) or even Monstrous (p. CI80). "Speech" by color changes is a 0-point feature.

Underwater Combat

The ***GURPS Basic Set*** has rules for underwater combat on p. B91. Those are appropriate for normal humans in most circumstances, but there are a few additional points to note.

First, creatures which are fully adapted to underwater life, with the Amphibious advantage (p. CI49) or the Aquatic disadvantage (p. CI101), are efficient fighters in these circumstances. They still have to work against the resistance of the water, but they are used to this. Rather than periodically rolling against Swimming skill in a fight, they roll against HT+3 every ten seconds, losing 1 Fatigue if they fail. (Of course, any character in a long fight suffers Fatigue based on Encumbrance when it ends; see p. B134.)

Incidentally, Aquatic or Amphibious creatures do not usually buy Swimming skill at all; it represents training in water movement for creatures which are *not* native to this environment. If the GM wishes to allow them to achieve better underwater speeds, they should buy Enhanced Move (Swimming); they may optionally be permitted to do so after character creation, to reflect training and practice.

Such creatures also fight more effectively, just as they suffer no penalty to skills underwater. They use Close weapons (including fists) at no penalty, 1-hex weapons at -1, and longer weapons at an additional -2 per hex. (Thus, a merman uses a 3-hex halberd at -5 underwater, rather than the normal human's -12.) They also suffer only -1 to damage with Close weapons underwater, rather than halving it, though they halve damage from other weapons just like normal humans. (Hence they may well tend to favor good-sized knives over big, drag-prone blades.)

Hand-to-Hand

Thrusting impaling weapons, especially knives, spears, and the like, are actually more effective underwater than swung weapons; they meet relatively little water resistance, whereas a full arm-swing meets a lot. (This is why small spears are quite common; they are often barbed for fishing use.) To reflect this, at the GM's option, damage from such weapons may be reduced by only one-third rather than one-half, while damage from any highly drag-prone weapon requiring a roundhouse swing (such as a large, broad-bladed axe) may be reduced by *two*-thirds. GMs may have to rule which weapons and attacks fall into which category on a case-by-case basis. Incidentally, a dive knife is not always carried as a weapon; given the dangers of being entangled by old cables, abandoned fishing nets, and so on, it can be a basic survival tool for the most pacifistic of divers. Dive knives generally have one serrated edge and a notch for cutting lines.

GMs should apply common-sense rules to underwater melees. For example, some martial arts maneuvers are unlikely to work very well in this resistant environment; a Flèche (p. MA48) is likely to take an extra -2 in addition to other penalties, and a Flying Jump Kick (p. MA59) is probably useless. On the other hand, several close-combat techniques may be devastating; an Arm Lock (p. MA44) or Choke Hold (pp. MA45-46) is fully effective underwater (though aquatic races may have anatomical differences leading to complications), and cutting attacks, carefully targeted at diving equipment, can achieve lethal results without even touching the victim's skin.

Also, underwater combat is often "three-dimensional," with fighters able to pass over, under, and around each other; aquatic or amphibious creatures can usually handle this better. They should roll against DX, often with bonuses, to perform complex maneuvers in water, whereas normal humans roll against Swimming skill with penalties. (Optionally, GMs may let aquatic/amphibious creatures buy Swimming skill to use instead of DX in these circumstances, to reflect training in agility; in that case, treat it much as Flight skill is used in aerial combat.)

Ranged Attacks

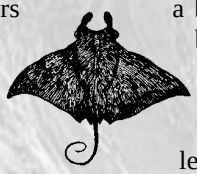
Ranged weapons tend to be badly affected by water. The following rules (based on those in ***GURPS Vehicles***) apply to weapons underwater:

Thrown Weapons have 1/10 their usual 1/2 Damage and Maximum ranges, and do half their normal damage at any given range. (So, between the reduced 1/2 Damage and Maximum ranges, they do 1/4 their listed damage.) If this reduces their maximum range to 1 hex or less, they simply cannot be thrown effectively.

Bows and Crossbows do not usually work at all; bowstrings stretch when damp, and wood may also have problems. High-tech or fantasy worlds may have waterproof bows (probably costing at least double standard prices); in that case, treat them like thrown weapons.

Black Powder Weapons have obvious problems; black powder won't burn. If game-world alchemists or weird chemists come up with a black powder analogue that includes its own oxidant, plus ways to handle and ignite it, treat these like other guns.

Guns and Missiles have 1/20 their usual 1/2 Damage and Maximum ranges (1/30 for soft-nosed bullets), but suffer no further damage reduction beyond that. Obviously, torpedoes specifically built for underwater use suffer no penalties. Firearms have additional problems; when fired, bullets meet the resistance of water in the barrel, which can lead to catastrophe, especially with overpowered rounds in flimsy guns. Even after emerging from the water, some guns retain dangerous amounts of water in the barrel, although others (especially larger calibers) can be drained simply by pointing them downward. Most modern mechanisms are otherwise fairly tolerant of dampness, although salt water can be corrosive in the long term, and standard silencers or suppressors (which are designed to contain expanding gases, not water) are lethally dangerous to use when wet. As an absolute minimum, reduce the Malf number of any normal gun by 3 when fired underwater or immediately after immersion. Special forces divers are often issued watertight weapon bags; they may also use guns with special water-shedding treatments on the metal, stainless steel flash suppressors, and so on, making them more reliable after immersion (but adding to costs).



Most *Liquid Projectors* (such as flamethrowers) are useless; water cannon have 1/100 normal ranges (minimum 1 hex).

Disintegrators, Stunners, and Screamers function normally.

Most *Lasers* have 1/10 their usual 1/2 Damage and Maximum ranges (in fairly clear water; silt and suchlike affect them like smoke). High-TL *Blue-Green Lasers* (and tunable "rainbow lasers" set to blue-green) have half the ranges of equivalent standard lasers in air, but perform equally well in water as out.

Other Beam Weapons have 1/100 their ranges.

Explosions are more dangerous; the distance increments for concussion damage are *tripled.*

Other weapon types may have their own rules for use; check descriptions, or apply common sense. Spells and superpower attacks should be adjudicated by the GM, based on the most similar weapon type; most are treated as "other beam weapons," and hence have severely reduced ranges, but Deafen or Sonic Blast are similar to stunners or screamers, and hence may well be unimpeded, or even have their ranges increased. Fire effects will probably not work, but might produce boiling water, doing some, reduced damage but potentially harming the caster if they originate too close to him.

Likewise, more-exotic powers may be modified in whatever ways seem appropriate. For example, weather control might, if the GM is generous, be used to create or command underwater currents, Body of Earth might create a body of mud or silt, and Body of Air might create a body of bubbles.

If attacks pass to or from water, apply range reductions in proportion; for example, a bullet fired into water treats each hex after it hits the surface as equivalent to 20 above. Given the deceptive refraction effects at the interface between water and air, GMs may apply additional penalties to attacks rolls in such circumstances.

The Smell of Blood

Last, cinematic games involving fights in tropical or temperate waters should also involve one other reliable stereotype. Any cutting or impaling injury means blood loss, and that will draw sharks or barracuda, as soon as the GM wants them. See the ***GURPS Bestiary*** for statistics for these creatures.

Underwater Combat Options

Because underwater combat involves numerous problems, the well-prepared fighter may be interested in some specialized skills or instruments of carnage:

Special Training

Some games might permit characters to learn *Fighting Underwater,* a maneuver first introduced in ***GURPS Japan*** for a specific Japanese martial art. This is a Hard maneuver with Swimming skill at 12+ (or Amphibious) as a prerequisite, learned for a specific combat/weapon skill; it negates underwater combat penalties on that skill, and cannot raise effective skill above the basic combat skill level. GMs should integrate it into campaign-specific styles (such as the fighting arts of the Atlantean palace guard). Alternatively or additionally, human expert combat divers in cinematic campaigns might be permitted to buy the Amphibious advantage; although this is normally a racial feature, it could represent extraordinary skill and training.

Bang Sticks

These are usually carried by divers for protection against sharks, although they may also be used by special forces or spies against human opponents. A bang stick consists of a chamber accommodating a pistol cartridge or a shotgun shell, attached to the end of a pole. It is used with spear skill, with Reach 1 and Min ST 8; when it is jabbed against a creature or opponent, the cartridge fires, doing the standard damage for the round type. The noise and surprise will deter many predators even if the damage done is minimal. A bang stick costs around $170.

Spearguns

These TL7 weapons are primarily intended for sport fishing. They fire small spears, which may be barbed, have a line attached to enable the target fish to be drawn in, or have other specialist features. Some use simple stretched elastic straps to propel the spear; others use compressed gas. GMs can use the details in ***GURPS High-Tech*** (p. HT100), or treat them as low-ST crossbows with reduced range. (Although they will throw the spear further in air, they are balanced and designed for underwater use.)

TL7 Sidearms

A very few guns, such as the Glock 17 automatic pistol (p. HT109), can be specifically outfitted for safe firing underwater, at added cost. Specialist military underwater weapons are even rarer; most forces consider that underwater battles are too unlikely to justify the development work. (Special forces divers tend to work at night, when any encounters are likely to be at knife-length.) Those that do exist tend to be expensive to buy and reload. Russian forces have made the most efforts in this area, creating weapons including the Tznitochmash SPP-1 4.5mm pistol (pp. SO99, 107), which has four barrels each loaded with a 115mm-long dart. This does 1d+1 damage, and has SS 10, Acc 1, RoF 2, ST 10, Rcl -1. It also has 1/2 Damage Range 50, Maximum Range 600 in air, reduced to 18 and 100 in water down to 50', and 6 and 40 below that. It is treated as an automatic pistol for game purposes. The Russians also have an underwater rifle believed to achieve slightly less than twice these ranges at any given depth, and Heckler & Koch, in Germany, produce a five-shot underwater pistol comparable to the Russian model.

TL8 Personal Micro-Torp

This is an example, designed using the ***GURPS Vehicles*** rules, of a weapon that a TL8 military force might issue to its divers. It is a 40mm unguided HESH (High Explosive Squash Head) warhead "micro-torpedo," fired from a six-shot revolver-style launcher with a shoulder stock. To avoid having the explosive shockwave injure the user, the fuse mechanism prevents the warhead from exploding if it hits a target in the first 20 yards of travel. (This distance may be reduced if the micro-torp is fired from a launcher mounted on an enclosed vehicle.) The micro-torp has a maximum range of 56 yards, so its usefulness is limited, but it can be effective in ambushes or planned assaults on structures. It also has a Move of just 25, so it takes just over 2 seconds to reach its maximum range, and high-tech vehicles or aquatic superheroes may be able to outrun it. The warhead does 6d explosive damage (with no fragmentation effect); the HESH design means that, if it hits a metal-armored target and the damage fails to penetrate its DR, 10% of the damage bypasses the DR and applies anyway. (Internal component DR, crew body armor, etc., still apply.) The launcher has SS 14, Acc 0, RoF 1, Rcl 0, and ST 7. The relevant skill is a mandatory specialization of Gunner/TL8; each micro-torp costs $32 and weighs 1.4 lbs., plus $420 and 3.4 lbs. for the launcher (so a fully loaded launcher weighs 11.8 lbs.).

Sample Underwater Vehicles

This section details some underwater craft that might appear in games. ***GURPS Vehicles*** may be needed for full information on some of the equipment, especially on the more complex designs.

Vehicle Details Format

The vehicle descriptions list systems and information of direct use to occupants. Many supportive systems detailed in ***GURPS Vehicles*** are omitted, though their effect on performance is not.

The code in brackets following many components indicates their location. For instance, [Tur] indicates the turret, [Tur1] the first of multiple turrets, [Sup] the superstructure, etc. Where not stated, systems are mounted in a vessel's main Body.

Subassemblies: The number following each subassembly is the targeting bonus to hit it.

Power & Propulsion: Describes the power plant and propulsion systems.

Fuel: Gives amount, type (with Fire number in parentheses), and type of fuel tank.

Occupancy: Each number is followed by an abbreviation. Cramped stations are CCS for a crew station, CS for a passenger seat, and CSR for passenger standing room. Similarly, normal stations are NCS, NS, and NSR, and roomy stations are RCS, RS, and RSR. Crew with no station are simply designated C. Any exposed position precedes the normal abbreviation with an X (for instance, XNCS for an exterior normal crew station).

Cargo: Each cubic foot generally holds about 20 lbs.

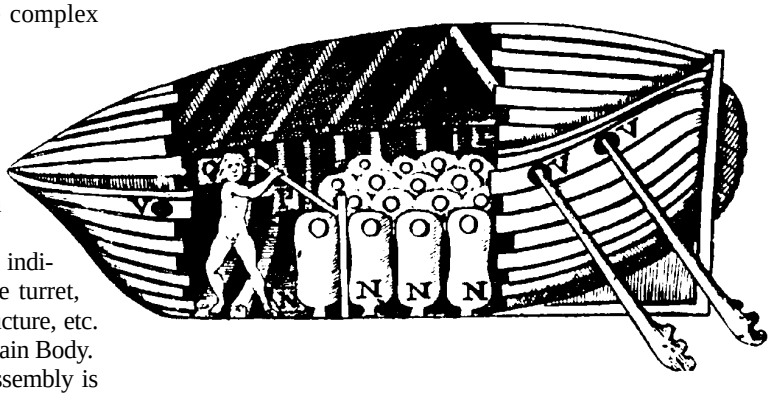
Armor: F indicates frontal armor, RL right and left, B back, T top, and U underbody. Any letters following PD/DR values indicate laminate (L), ablative (A), wood (W), nonrigid (N), or composite (C) armor. Special circumstances (layered armor, nonmatching right and left armor, etc.) will be detailed in the vehicle's descriptive text.

Weaponry: The location notation may also give the facing of the weapon, per *Armor.* All weapons are assumed to be in standard mounts, with no stabilization up to TL6 and full stabilization (cancels up to -3 in movement penalties) at TL7+. Special mounts, stabilization exceptions, etc. will be detailed in the descriptive text. For energy weapons, the value indicates shots stored in energy banks. For other weapon statistics, see the notes elsewhere.

Equipment: Grouped by location, these are *only* the game-essential accessories to the vehicle. For HPs and power usage of individual components, consult ***GURPS Vehicles.***

Statistics: *Size* is a rough indication of dimensions, height × width × length. *Lwt.* is loaded weight. *SizeMod* is the targeting modifier for the vessel as a whole. The lowercase initial before a performance rating indicates mode of travel; e.g., *wSpeed* is top water (surface) speed, and *uMR* is the underwater maneuver rating. To determine turning radius without ***GURPS Vehicles,*** square the vehicle's current speed, then divide by (40 × MR).

Price is given by the design system. In fact, none of these vessels came off a factory production line; most or all should probably be considered limited-production (p. VE199) and should have their listed price doubled.



Early Experiments

Early writers and artists such as Roger Bacon and Leonardo da Vinci tinkered with the idea of submarines, but they only really become feasible at TL5. Even then, they are essentially experimental, and often ineffective or dangerous as a result.

Drebbel Submarine (TL (4+1))

In 1620, a Dutch inventor named Cornelis Drebbel built "diving boats" which are said to have traveled for several miles along the Thames. Details of these craft are obscure; they may well have had slightly positive buoyancy, submerging (they supposedly traveled 12'-15' below the water) by use of an "inverted aerofoil" effect when moving at speed. However, some claim that they used flexible bladders as crude ballast tanks. They were apparently covered in leather, sealed with grease, and propelled by oars. Air was probably supplied by tubes with floats to hold them above the surface, perhaps with a pump, although Drebbel *claimed* to have invented a chemical method for purifying air.

The following is the kind of thing that an inventor such as Drebbel might build; it is designed at TL4 except for a submersible hull and mechanical controls, which are usually TL5. It could be used in semi-historical or "clockpunk" games, or perhaps as an advanced secret weapon for the version of Atlantis described in Chapter 4.

Design Notes: This design uses a medium frame. The crew consists of 12 rowers (six to a side), a steersman, and five mechanics who operate the ballast system, crude dive controls, and the bilge pumps. Performance figures are for surface and underwater operations, in that order. Oars are very inefficient underwater, so submerged performance could be much lower in a fully realistic game.

This vessel's nominal test depth (p. 73) is just over 8 yards, but the crude air supply system, the impossibility of accurate navigation underwater (requiring frequent surfacing to check position), the lack of any light source except for air-consuming candles or lanterns, and the sheer experimental unreliability of the design all ensure that it is highly unlikely to dive deeper than 10'-15', except in cinematic games with high levels of "weird science."

Strictly speaking, this vessel's armor is leather, and hence non-rigid. However, in order to give the vessel some crush resistance, 1 point of it is purchased as wood. The vessel has DR 3 vs. collisions.

Subassemblies: Body +4.
Power & Propulsion: 12 oars, giving 60 lbs. of thrust with ST 10 rowers.
Occupancy: 18 CCS, 2 CS *Cargo:* 5 cf

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	3/8N+1W	3/8N+1W	3/8N+1W	3/8N+1W	3/8N+1W

Statistics
Size: 6'×5'×20' *Payload:* 4,100 lbs. *Lwt.:* 23,360 lbs.
Volume: 722 cf *SizeMod:* +4 *Price:* $8,565

HT: 11 *HP:* 750

wSpeed: 4 *wAccel:* 0.05 *wDecel:* 2 *wMR:* 0.1 *wSR:* 3
uSpeed: 3 *uAccel:* 0.03 *uDecel:* 2 *uMR:* 0.1 *uSR:* 3
Surface draft 2'. Submerged draft 11.9'. Crush depth 16.5 yards. Submerged weight 45,117 lbs.

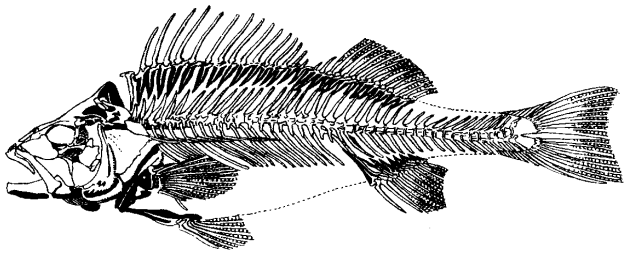
Mid-TL5 Designs

By the middle of TL5, submersible vehicles were technically possible, although propulsion and countless other issues remained ob stacles. Either air had to be drawn from the surface through cumbersome tubes, or crews had to subsist on whatever the hull held during short dives. Frames and armor gave crush resistance to a few dozen feet at best. A few inventors set to work within these limitations.

In 1776, a Yale student named David Bushnell built the first submarine ever used in war, an oval wooden shell (with a brass conning tower) that could operate just below the water. The *Turtle* was driven by a hand-cranked propeller. A volunteer, Sergeant Ezra Lee, attempted to attack British warships at anchor by attaching explosives to them with a hand-driven screw. The screw failed to penetrate the targets' copper hull-plating. However, when Lee was forced to surface, he was spotted by lookouts; the British ships then withdrew out of caution. A copy of the design was used in the War of 1812, again unsuccessfully.

In 1801, Robert Fulton offered a vessel named the *Nautilus* to Napoleon. With a crew of three and a displacement of around 30 tons, it used a sail on the surface and a hand-cranked propeller beneath; it was also intended to attach explosives to enemy vessels' hulls. It was designed as a secret weapon to blockade the Thames; had the French agreed, Fulton would have been paid for each British ship he sank. However, it proved too slow underwater (probably managing around 3-5 mph) to catch its intended victims.

During the American Civil War, the South, faced with Union naval blockades, tried experimental submarines. However, these proved lethally unsuccessful; the only one to sink an enemy ship (the first submarine to do so) also sank itself in the process. In 1880, an Anglican clergyman built the first reasonably successful steam-powered submarine, the *Resurgam*, but that sank during an early voyage. Still, possibilities were becoming clear. The invention of the powered torpedo in the late 19th century introduced a weapon that could make submarines truly fearsome.



The Holland (1900)

John Holland built this, the first submarine design widely accepted into naval service. The *Holland* was the culmination of 19th-century submarine design, with features that became standard from then on. Its main task was coastal defense; it had poor ocean-going capabilities. Unfortunately, its petroleum engines tended to give off vapors, which caused explosions on several occasions.

Design Notes: The *Holland* has a medium-strength frame built of very cheap materials, standard metal armor, and submarine lines. It is mostly hull; the "turret" is little more than a protruding airlock and hatch, with a porthole for observation when the vessel is nearly submerged. Its known fuel consumption was much higher than ***GURPS Vehicles*** would suggest, reducing its endurance to about a week of surface operations (or 6 hours submerged, on batteries). It has limited life support for 10 man-days, 5 bunks, and provisions for 50 man-days with a small galley.

It carries three Whitehead torpedoes, each of which weighs 845 lbs. Their LE warheads do 6d×177 explosive damage, and they have a speed of 30 mph and a range of 1,000 yards. The deck-mounted "dynamite guns" were an odd design: 8" smoothbore compressed-air weapons designed to fire a 100-pound explosive projectile half a mile. A best guess at ***GURPS*** statistics gives them Malf 14, Damage 6d×40[12d] explosive, SS 25, Acc 5, 1/2D 100, Max 350 (×2.5 for indirect fire), RoF 1/15, Weight 600 lbs, Cost $450, and a cost per shot of $40. They probably needed six loaders.

Subassemblies: Body +5, Turret +2.
Power & Propulsion: 35-kW gasoline engine; 756,000-kWs batteries; screw propeller.
Fuel: 1,050 gallons of gasoline.
Occupancy: 7 RCS

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	4/40	4/40	4/40	4/40	4/40
Tur:	4/40	4/40	4/40	4/40	–

Weaponry
450mm torpedo tube; two 200mm dynamite guns.

Equipment
Duplicate mechanical controls; two precision navigation instruments.

Statistics
Size: 10'×10'×53' *Payload:* 1,400 lbs. *Lwt.:* 133,344 lbs.
Volume: 2,590 cf *SizeMod:* +5 *Price:* $139,897

HT: 8 *HP:* 1,676 [Body] 123 [Tur]

wSpeed: 5 *wAccel:* 0.05 *wDecel:* 1 *wMR:* 0.05 *wSR:* 3
uSpeed: 6 *uAccel:* 0.04 *uDecel:* 1 *uMR:* 0.05 *uSR:* 3
Surface draft 7'. Submerged draft 18'. Crush depth 60 yards. Submerged weight 161,875 lbs.

TL6 Submarines

Like many other technologies, submarine design advanced spectacularly through the historical TL6 era. At the start of the period, the *Holland* (see above) was the state of the art; by the end of TL6, the submarine was set to become the dominant naval weapon of TL7, and the Type XXI U-boat (below) embodied most of the features that would be standard in TL7 military craft.

WWI Designs

Navies did purchase some *Holland*-class submarines. But most craft used in World War I were of the next generation, markedly larger and more formidable, albeit with fine hydrodynamic rather than submarine lines; designers recognized that they would spend most of their time on the surface. For example, the British E-Class of 1913 was 181' long, with a displacement of 807 tons and a crew of 31 (***GURPS*** Size Modifier +7). Such a submarine might be powered by two 600-kW diesels on the surface, giving it a maximum speed of 18 mph, and by two 315-kW electric motors when diving, giving it a maximum submerged speed of 11 mph. Cruising at 11 mph on the surface, it would have a range of around 3,000 miles. With armor giving DR 30-60 and Size Modifiers of +6 or +7, WWI submarines had crush depths of around 70-120 yards.

Submarines developed through the war; ocean-going German designs were huge, with some as long as 315', but most craft used in action were of the type described above. Almost all used the diesel-electric configuration, although some British "fast fleet scouts" used steam turbines on the surface, and could manage 27 mph. (That type of design proved to have *considerable* practical problems, however, including structural weaknesses arising from the number of breaks in the hull demanded by steam engines, and residual heat from the boiler making life nearly intolerable for the crew while submerged.)

Weapons: Given the cost of torpedoes, submarines used for commerce raiding often surfaced and used their deck guns to sink most targets. The E-Class carried a 76.2mm (12-pounder) quick-firing gun, typically firing a SAPHE shell doing 6d×9 (0.5) kinetic damage plus 6d×3 [6d] explosive damage, with a 1/2D range of 1,500, a Max of 11,750, and an RoF of 1/4. It also had three 450mm torpedo tubes, but carried just nine torpedoes. The installation of a periscope as standard equipment enabled such craft to attack from beneath the sea when necessary. Furthermore, submarines could slip close to enemy coasts or shipping lanes to lay mines. Faced with such threats, navies developed anti-submarine tactics and technologies, notably sonar.

A typical torpedo of this period had a diameter of 450mm and weighed around 1,800 lbs., including a warhead capable of doing 6d×500 explosive damage. Set to run at 45 mph, its range was around 3,300 yards; reduced to 33 mph, it could reach 6,600 yards.

WWII Designs

By the outbreak of WWII, submarines had grown larger and more sophisticated, although the basic pattern – a diesel-electric vessel, its hull shaped primarily for surface rather than submerged action (fine hydrodynamic lines), with unguided torpedoes and a deck gun – remained constant. One thing that had advanced was sensor technology; sonar, which had been installed on a few submarine-hunting submarines late in WWI, was now more or less standard, and radar, an experimental technology at the start of the war, soon became compact and useful enough to be installed on submarines (along with radar detectors, to warn of hunters).

For one typical example, the American *Gato*-class sub, introduced in 1941, was 312' long, with a submerged displacement of 2,424 tons and a crew of 85. It could achieve 23 mph on the surface, or 10 mph submerged; at its surface cruising speed of 11 mph, it had a range of 13,500 miles. The *Gato* had six forward and four aft torpedo tubes, and carried 24 torpedoes, a 3" or 5" deck gun, and two or more anti-aircraft gun mounts.

The *Gato* was designed to fight a war across the Pacific from the west coast of America, and was relatively comfortable. The mainstay of the Germans in the Atlantic was the more cramped type VII U-boat: 220' long, with a crew of 44, 769 tons displacement, capable of 20 mph on the surface or 9 mph submerged, and a range of 7,500 miles. It was fitted with five torpedo tubes, four forward and one aft, and carried 14 torpedoes as well as an 88mm deck gun and lighter anti-aircraft guns. Any submarine could replace some of its torpedoes with mines, which were released through the torpedo tubes. Submarines of this period are around DR 40-50; with Size Modifier +8 and extra-heavy frames, they have a crush depth of 150-180 yards.

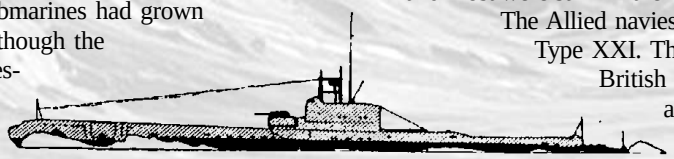
Weapons: At the start of the war, torpedo technology had advanced little since WWI. The weapons were a little larger on average, but some WWI designs were still in use. During the war, there was a gradual switch from compressed-air to electric propulsion, and some experiments with homing torpedoes and proximity fuses, although the latter were not especially successful at the time. (It should be noted that some WWII-derived designs remained in widespread service for many decades.) A typical 533mm (21") torpedo of the time weighs 3,300 lbs. including a warhead which does 6d×1,500 explosive damage, with a range of 4,500 yards at 53 mph or 9,000 yards at 36 mph.

The main deck gun on a WWII submarine would usually be in the 75-125mm range (although there were some oddities and monsters). Most also mounted 20-40mm autocannon.

German Type XXI (1944)

By 1943, the Allies were winning the Battle of the Atlantic with superior numbers, weapons, and technology. The Germans sought to respond with a radical change in U-boat design: a true submarine, able to operate for long periods without surfacing and fast enough to outrun surface ships.

The Type XXI therefore sported several new features: vastly increased battery power, a streamlined outer hull, a stronger pressure hull, no large-caliber deck guns (to discourage commanders from lingering on the surface), and a new snorkel, which enabled the U-boat to cruise or recharge its batteries using its diesel engines without surfacing. Fortunately, the Type XXI was deployed too late to affect the war; few saw action, and most were sunk in their pens or scuttled.



The Allied navies were much impressed by the Type XXI. The U.S. Navy's *Tang* class, the British *Porpoise* and *Oberon* classes, and the French *Narval* class were all based on this

design, and the Soviets used the captured Danzig shipyards to build an unknown number of actual Type XXIs. The ideas behind the Type XXI also heavily influenced the designs of the first generation of nuclear-powered submarines. This vessel could therefore be the target of a WWII espionage or commando action, or the design could reasonably be used for small diesel craft in virtually any navy in the second half of the 20th century.

Design Notes: This vessel has submarine lines and basic sound baffling and stealth. Its radios are Morse code-only (no voice transmissions), making them smaller for their range. All performance figures quoted are sprint speeds under battery power. Normally, under diesel power, the Type XXI has wSpeed 14, wAccel 0.2, uSpeed 16, uAccel 0.2. Cruising underwater on batteries alone, it has uSpeed 7. The vessel can cruise for well over a month on diesel power; under battery power, its endurance is 72 min at 20 mph or 72 hrs at 7 mph. The superstructure and turrets are outside of the pressure hull, and flood when the vessel dives.

The Mauser C38 20mm Autocannon has SS 20, Acc 14, 1/2D 1,300, Max 5,600, and RoF 8. It fires SAPHE rounds which do damage 6d×3(0.5), plus 2d[1d-3]. The submarine carries a total of 3,450 rounds, which are loaded in 20-round magazines. The Type XXI's torpedoes feature advanced (for the time) guidance systems; the G7es uses passive sonar homing, and the G7aes uses wire guidance. Both have Malf 15, Max 6,200, speed 17, and range 6,120, and do 6d×1,200 damage. The TMC is the standard German naval mine, magnetically and acoustically fused. It has Malf 15 and does 6d×4,100 explosive damage. ***GURPS Vehicles*** would give this vessel's torpedo tubes an RoF of 1/18, though real-world performance was usually much slower (around 1/120).

Subassemblies: Body +8, Superstructure +5, AA Turret +2, AA Turret +3.

Power & Propulsion: Two 750-kW marine diesels; 8,100-kWh TL6 lead-acid batteries; two 1,900-kW marine screws.

Fuel: 63,500 gallons diesel.

Occupancy: 7 RCS, 46 CCS (the superstructure has 1 XNCS, the turrets 2 NCS each, all only usable on the surface).

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	4/110	4/110	4/110	4/110	4/110
Sup:	4/35	4/35	4/35	4/35	–
Tur1:	4/70	4/70	4/70	4/70	–
Tur2:	4/70	4/70	4/70	4/70	–

Weaponry

Six 533mm torpedo tubes [Body] (23 G7 533mm torpedoes, or 18 G7 torpedoes and 12 TMC mines)

Four C38 20mm automatic cannon, universal mount, limited rotation [2 each in Tur1 and Tur2].

Equipment

Body: Maneuver controls; diving controls; 240 man-days limited life-support; two TL6 medium Morse radios (100 miles); two TL6 medium very sensitive receive-only Morse radios (10,000 miles); Enigma manual coding machine; two 40' periscopes w/8× telescopes; 4-mile passive sonar; fire extinguisher; complete workshop. *Sup:* 6-mile nontargeting surface search radar; 12-mile non-targeting air search radar; radar detector; radio direction finder; 2-mile active sonar; snorkel.

Statistics

Size: 35'×22'×252' *Payload:* 82,000 lbs. *Lwt.:* 1,621 tons
Volume: 58,200 cf *SizeMod:* +8 *Price:* $24 million

HT: 9 *HP:* 52,000 [Body] 7,500 [Sup] 830 [Tur1] 830 [Tur2]

wSpeed: 18 *wAccel:* 0.5 *wDecel:* 0.5 *wMR:* 0.05 *wSR:* 4
uSpeed: 20 *uAccel:* 0.3 *uDecel:* 0.5 *uMR:* 0.05 *uSR:* 4
Surface draft 21'. Submerged draft 51'. Crush depth 360 yards. Submerged weight 1,818.75 tons.

TL7 Submarines

TL7 submarines incorporated all the features that had been developed in earlier periods; nuclear power gave larger military designs vastly increased endurance, enabling them to remain submerged for months at a time. (Note that any nuclear submarine will have diesel and battery systems for emergency backup.) The development of the submarine as a mobile, stealthy launch platform for strategic nuclear weapons encouraged the development of formidable hunter-killer designs, to track down and destroy enemy missile craft. Hull shapes were optimized for submerged performance as a matter of course (and "submarine lines" developed into "advanced submarine lines" – see p. 72). The development of missiles capable of being launched from torpedo tubes added yet more options.

Also, although submarines remained almost entirely military craft (and deep-sea submersibles remained expensive specialist research tools), the maturity of the technology permitted a few more civilian applications.

Nuclear Submarine Design

A few examples illustrate this history:

The *U.S. Permit* Class (1962) was 278' long, with a submerged displacement of 4,300 tons (***GURPS*** Size Modifier +9). It had a crew of 120, and could achieve 17 mph on the surface, or 31 mph submerged. Its listed crush depth was 2,000' (suggesting that its hull had a DR around 240). It was armed with four 533mm torpedo tubes, and carried 22 torpedoes, submarine-launched missiles, or mines. Its sensor array included two periscopes, radar, and active and passive sonar (including a towed array and systems designed for operations under the Arctic ice), and it had basic sound baffling and 1962-vintage computers for sonar analysis and fire control.

The Soviet *Sierra* Class (1984) was 364' long, with a submerged displacement of 6,800 tons (***GURPS*** Size Modifier +9). It had a crew of 60, and a performance of 21 mph on the surface, 40 mph beneath. Its titanium hull gave it a crush depth around twice that of the *Permit* (suggesting a DR of around 490). Greater size and fewer crew (thanks to more advanced technology) gave it space for a greater weapons load: four 650mm (26") and four 533mm torpedo tubes, with 40 torpedoes, rocket torpedoes, anti-ship cruise missiles, or mines. Its listed sensor array might slightly resemble that of the *Permit* at first glance, but more numerous and more powerful computers would have made it markedly more capable.

Torpedo design also evolved through the period. A typical early-TL7 533mm torpedo weighs 3,400 lbs., including a 750-lb. warhead which does 6d×2,100 explosion damage, with a range of 14,000 yards at its maximum 40 mph speed, or 45,000 yards at lower speeds, and has WGSH guidance. Later designs increase range and speed, in varying proportions; at least one advanced design is supposedly capable of 80 mph with a range of 25,000 yards. Russian designers produced both 533mm and 650mm (26") torpedoes, the latter sometimes employing a homing system that enables them to track a target ship's wake. (This is hard to decoy or jam, but reduces the torpedo's effective speed and range, as it weaves across the wake pattern.) These large torpedoes also mount warheads of up to 1,200 lbs., capable of doing 6d×2,400 explosion damage, and achieve speeds of 40-58 mph and ranges of 51,000-110,000 yards.

U.S. Seawolf Class (1997)

Seawolf attack submarines were designed to face off against a new generation of Soviet attack and ballistic missile submarines (including the *Sierra* class) in the 1980s. Claimed to feature the most advanced acoustic stealth technology in the world, they are far quieter than the preceding *Los Angeles* class and have a much higher tactical ("silent running") speed.

Design Notes: Because the *Seawolf* is a recent military design, public information about it is sketchy (and may be deliberately deceptive). This design is partly speculative and has advanced sound baffling and total compartmentalization. Crew provisions include a cabin for the captain, five three-man cabins for officers, 40 bunks for enlisted men, messes for the officers and enlisted men, and a small galley with provisions for 24,120 man-days. Under combat or conditions or when otherwise using near-full power, the vessel has 66 hours endurance on diesel fuel, or one hour on electric power; its batteries can give it low-speed emergency propulsion for 57 hours. The nuclear power plant is capable of running the vessel for several years, and can recharge the batteries at a rate of 4.3 GWs/hour.

Accommodations include a luxury cabin (the captain's quarters), a standard cabin serving as the executive officer's stateroom, four standard cabins sleeping three officers each, 92 bunks, galleys with provisions for 24,120 man-days, a complete mini-workshop, and a small movie screen and projector.

The 660mm (26") torpedo tubes have SS 30 and RoF 1/16. They can be used to launch a wide range of munitions; the vessel typically carries 50 Mk. 48 torpedoes (speed 28, range 152,842; 6d×1,850 explosion damage; WGSH guidance with skill-13), and 50 AGM-84 Harpoon missiles (speed 266, range 176,000, 6d×1,260 explosion damage; IG/ARH homing with skill-15). It can also carry mines or Tomahawk cruise missiles, often nuclear-tipped. (Missiles are "fired" underwater in capsules, which release their contents at the surface.)

Subassemblies: Body +9, Superstructure +6.

Power & Propulsion: 119-MW nuclear reactor; two 19.4-MW marine diesel engines; four 2,700-kWh lead-acid batteries; 116.4-MW hydrojet; emergency drop-down 500-kW ducted propeller.

Fuel: 90,000 gallon self-sealing fuel tanks filled with diesel (fire 9).

Occupancy: 15 NCS, 30 CCS, 4 RCS *Cargo:* 1,000 cf

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	4/400	4/400	4/400	4/400	4/400
Sup:	4/400	4/400	4/400	4/400	–

Weaponry

Eight 660mm torpedo tubes

Equipment

Body: Duplicate electronic controls and diving controls; full life support for 134 people; active/passive sonar (Scan 19, 21-mile range); passive sonar (Scan 20, 30-mile range); towed passive sonar (Scan 20, 30-mile range); sound system; two precision navigation instruments; four sonar decoy dischargers w/20 reloads each; eight message buoys; ruggedized compact mainframe (Complexity 4); ruggedized microframe (Complexity 3); 44 ruggedized terminals; eight compact fire suppression systems; three 3-person airlocks. *Sup:* Snorkel; receive-only ELF receiver (30,000-mile range); two tight-beam radios w/scramblers (3,000-mile range); two VLF radios w/scramblers (3,000-mile range); radio direction finder (30-mile range); laser communicator (60-mile range); receive-only VLF radio (30,000-mile range); two rugged 30' sensor periscopes w/scan 15, 5-mile range PESA; searchlight (10-mile range); navigation radar, no targeting (Scan 17, 10-mile range); military GPS; IFF; transponder; advanced radar/laser detector; communications buoy; 4-man airlock.

Statistics

Size: 40'×35'×353' *Payload:* 20,000 lbs. *Lwt.:* 9,150 tons
Volume: 319,795 cf *SizeMod:* +10 *Price:* $1.97 billion

HT: 9 *HP:* 90,000 [Body] 3,600 [Sup]

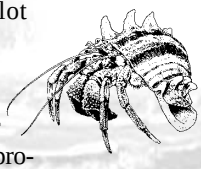
wSpeed: 29 *wAccel:* 2 *wDecel:* 1 *wMR:* 0.05 *wSR:* 7
uSpeed: 44 *uAccel:* 2 *uDecel:* 1 *uMR:* 0.05 *uSR:* 7

Surface draft 88'. Submerged draft 90.5'. Crush depth 984 yards. Submerged weight 10,000 tons.

Recreational Submarine (TL7)

This is based on the *Nomad 1000*, built by U.S. Submarines of Florida (see **www.ussubs.com/luxury_folder/luxury.main.html**). It is a millionaire's toy, designed to allow coral reefs and picturesque wrecks to be viewed in extreme comfort. It could also be used for a little light treasure-hunting, although it lacks an airlock or proper diver support facilities. Luxury features include electronic controls designed for maximum ease of use, passenger seats which convert into beds, 35"-diameter acrylic portholes, and a compact entertainment system.

On the surface, the vessel is controlled from the raised superstructure. However, this is mounted outside the pressure hull, and floods when the vessel dives; the pilot transfers to a second control center in the bow, behind a 60" viewport.



Design Notes: Although this is technically a long-occupancy, luxury design, interior space is limited. The six bunks fold away to provide the equivalent of four roomy and six normal seats during the day, and the passengers and crew share a galley and a shower-room/toilet (treated here as cabins for design purposes). No cargo space is assigned; passengers can stow luggage in lockers associated with each bunk. A tourist version replaces this accommodation with 24 short-occupancy passenger seats.

The vessel is designed to be operated by a single person, although for safety, especially on longer journeys, it really needs a second crewman. There is a passenger seat with more or less complete access to each set of controls. The superstructure is not included in the submersible hull, but all systems installed there are treated as pressure-proofed, as they have to tolerate repeated immersion in the sea. The manufacturer's specification suggests that the vessel has 62.5 man-days of "full" plus 75 man-days of "emergency" life support; the figure used in this design was chosen as a compromise.

The vessel's main electric motor has a maximum rating of 82 kW, which limits underwater performance. The diesels are more than adequate to run the vessel at full surface speed while recharging the batteries and powering minor additional systems, and the vessel would be perfectly functional with one diesel out of action. The surface draft is taken from the *Nomad 1000's* specification, and is twice the calculated figure; this vessel is designed to sit low in the water, giving passengers a view beneath the waves even when the sub is on the surface. The design also gives a higher empty weight (84.5 tons) than the manufacturer's brochure (72.5 tons). The most significant issue may be crush depth; the manufacturers quote an operating depth of 1,000', while this design has a test depth of just 570'. However, in practice, few owners are likely to bother diving below 150', the deepest that sunlight penetrates.

Running the diesels at full power, a full tank of fuel would last 27 hours, but at the vessel's cruising surface speed of 11.5 mph, it could last around 120 hours; even with other systems drawing power, the vessel has a range well in excess of 1,000 miles.

Subassemblies: Body +6, Superstructure +3.
Power & Propulsion: Two 185-kW turbocharged diesel engines; 322-kWh advanced batteries; 205-kW ducted propeller.
Fuel: 350 gallons diesel (fire 9).
Occupancy: 1 RCS, 1 RS, 6 bunks. (Sup has 1 RCS, 3 RS, not usable when submerged.)

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	4/85	4/85	4/85	4/85	4/85
Sup:	3/5	3/5	3/5	3/5	–

Equipment

Body: Computerized controls; autopilot; precision navigation instruments; GPS; limited life system (100 man-days); minicomputer; computer terminal; nontargeting surface-search radar (20-mile range); nontargeting active sonar (10-mile range); two long-range radios; medium-range cellular phone radio; sonar communicator; 16 searchlights (1-mile range); compact fire suppression system; provisions (25 man-days). *Sup:* Pressure-proof duplicate computer controls; pressure-proof computer terminal.

Statistics

Size: 19'×12'×64.5' *Payload:* 2,400 lbs. *Lwt.:* 173,266 lbs.
Volume: 3,806 cf *SizeMod:* +6 *Price:* $1,500,000

HT: 12 *HP:* 12,000 [Body] 188 [Sup]

wSpeed: 14 *wAccel:* 0.5 *wDecel:* 2.5 *wMR:* 0.25 *wSR:* 5
uSpeed: 7 *uAccel:* 0.1 *uDecel:* 2.5 *uMR:* 0.25 *uSR:* 5

Surface draft 9'. Submerged draft 21'. Crush depth 380 yards. Submerged weight 237,906 lbs.

Deep-Ocean Research Craft

Although deep-sea exploration vessels changed dramatically through the 20th century, one basic pattern held more or less constant. The crew compartment would consist of a spherical hull, as compact as possible, usually holding just cramped seats, life support, and controls. A *bathysphere* consists of such a spherical cabin, lowered on a cable from a surface ship. Although bathyspheres descended to 3,000' in the 1930s, and one reached 4,000' in 1948, this design has severe limitations; a break in the much-strained support cable would mean certain death for the crew. Thus, later free-acting vessels had the crew compartment attached to buoyancy and propulsion systems of some sort. In some designs, the sphere could be detached from the other sections, and had positive buoyancy; in emergencies, the crew could hit a release switch and float to the surface. (However, a hollow ball floating uncontrollably upward through several miles of ocean might not provide the smoothest ride; whether the crew would survive is a moot point.)

Bathyscaphs

A *bathyscaph* has the spherical cabin suspended below a large oil-filled "float" that provides lift in water. It also carries ballast (such as floodable tanks or external iron weights held on by magnets), and essentially functions like an underwater balloon. The first bathyscaph was built in 1948, making it an experimental technology at late TL6 that reached maturity at early TL7.

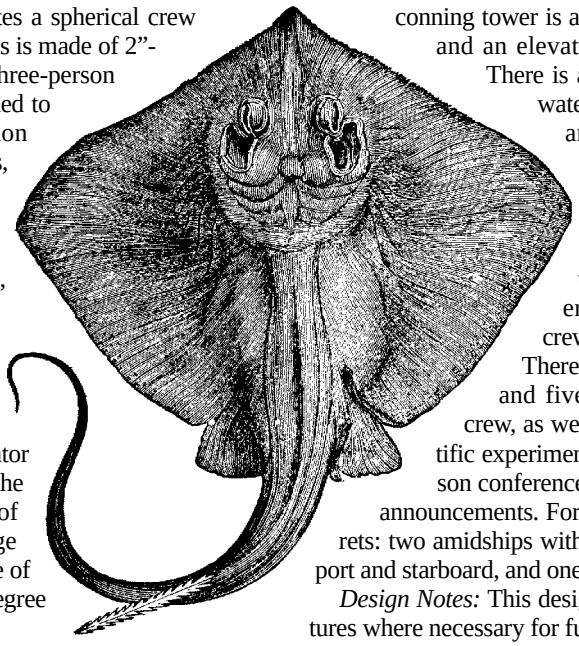
In 1960, Swiss explorer Jacques Piccard and U.S. Navy Lieutenant Don Walsh reached a record-breaking depth of 35,810 feet in the Pacific's Marianas Trench. Their vessel was the *Trieste*, a bathyscaph built by Piccard and his father in 1953 and acquired and improved by the U.S. Navy in 1958. As the first type of vessel to reach the very deepest parts of the ocean, this type of design is a natural choice for explorers who wish to encounter underwater mysteries.

The improved cabin on the *Trieste* had an internal diameter of 66" (just enough to hold three cramped crew stations, electronic systems, and life support equipment), giving it a size modifier of +3, and a steel shell 7" thick, giving it a DR of 490. This implies a crush depth of 16,000 yards, which accords with its builders' estimates; its record dive perhaps took it beyond its nominal test depth, but it was, after all, an experimental research vessel. (Actually, its observation port cracked during that dive.) Its floatation tank contained 34,000 gallons of oil and 16 tons of lead-shot ballast. It had electrically powered propellers; its maximum speed is not recorded, but was probably not high.

Alvin

During the 1970s, a new generation of deep-research vehicles was developed, of which the most famous was *Alvin*, a submersible built by a team including noted oceanographer Robert Ballard. Ballard used *Alvin* in some of the first detailed studies of the geology and biology of the deep ocean, as well as a close examination of the wreck of the *Titanic*. His team is now making more use of unmanned vehicles such as *Jason*, but a few manned craft resembling *Alvin* may still be found in operation around the world.

Once again, the design incorporates a spherical crew compartment. In the case of *Alvin*, this is made of 2"-thick titanium, large enough for a three-person crew (in cramped conditions). Attached to this are ballast, electrical propulsion systems, two bulky manipulator arms, and a sample basket. (*Alvin's* overall dimensions are 23.3' long, 8.5' wide, and 12' high.) *Alvin*, like many deep-sea research vessels, employs one-use metal ballast, which has to be replaced on the support vessel after each dive. (If the vessel somehow gets stuck despite dropping the ballast, *Alvin* can dump its basket and its manipulator arm, and as a last resort can release the control sphere from the remainder of the structure.) *Alvin* can only manage 3.4 mph, but multiple hydrojets, some of which can be rotated, give it a high degree of maneuverability.



Although dives always last less than a day (and safety rules demand that they begin and end in daylight), *Alvin's* life support will last for 3 days (for a crew of three) in the event of an emergency. The vessel descends and rises at around 100' per minute, so traveling to and from the ocean bed takes more hours out of that one-day maximum.

Other equipment includes a computer, searchlights, and multiple cameras, some with low-light capabilities and some mounted on the robot arms. The cameras are linked to a bank of video recorders. Projects such as the *Titanic* expedition involve laying a sonar positioning system (see p. 72) across the target area.

In ***GURPS Vehicles*** terms, *Alvin's* crew sphere is TL7 advanced metal with a DR of about 150, giving it a calculated crush depth in excess of 5,000 yards. Its official maximum operating depth is 4,500 meters, which is well over the test depth that this calculation would imply; but, as noted previously, experimental research craft tend to push their limits. The systems mounted outside the sphere have DR of about 10, but are extensively pressure-proofed where necessary.

Speculative Designs

This section details some designs that have never been built – yet. They are thus suited for SF and cinematic games of various sorts.

Super-Sub (TL(7+1))

This is an attempt at a "realistic" treatment of a cinematic concept: a fast, stealthy nuclear submarine, used as a mobile base by either an evil genius or a heroic pulp scientist (to whom cost is irrelevant). It could also be a mechanical menace; if the ship's genius-option computer somehow developed sentience, went mad, and took over, the automated systems would let it run the entire vessel.

It is shaped like a broad, finless hammerhead shark, except that its conning tower sits far forward, forming a shorter third flange off the "head." A large window and two powerful searchlights give limited forward visibility underwater. Behind the conning tower is a small launch pad for VTOL aircraft and an elevator to the internal 8,000-cf hangar. There is also a 3,500-cf dry dock for smaller water-craft. Computerized controls allow an extremely small crew for a ship this size; for short periods, all of the vessel's systems could be run by a single person, but normally two mechanics work throughout the hull while a pilot and commander man the bridge. Three additional crew stations in the bridge hold gunners. There is a luxury cabin for the commander and five double-occupancy cabins for the crew, as well as a complete workshop for scientific experiments, an operating room, and a 10-person conference room for mission briefings and plot announcements. For defense, there are five weapons turrets: two amidships with guided missiles, two on the bow to port and starboard, and one on the stern carrying rotary cannon.

Design Notes: This design is built at TL7, but with TL8 features where necessary for full effectiveness. It has total compartmentalization, basic stealth, basic chameleon, and extreme sound baffling (all at TL8), as well as a TL8 supercomputer.

The vessel's missile launchers are in universal mounts. They fire standard TL7 127mm missiles (see p. VE44). The cannon are standard TL7 guns (see p. VE43), with full stabilization and laser rangefinders (with a 5-mile range). As they share their mounts with low-light televisions, they can be used in most conditions. The torpedo tubes have SS 30 and RoF 1/15. The *Super-Sub* carries 10 TL7 close-range torpedoes (speed 30, range 3,270, PSH with skill-29, damage 6d×12,000), and four long-range torpedoes (speed 30, range 14,760, BASH with skill-27, damage 6d×6,000). The ship's torpedoes, 80 missiles, and 15,000 rounds of 25mm SAPHE ammunition are stored in anti-blast magazines, so enemies will have to work to make it all blow up.

Subassemblies: Body +8, Superstructure +4, Two Missile Pop Turrets (Mis1-2) +5, Three Gun Pop Turrets (Gun1-3) +3, Sensor Pop Turret (Sen) +3.

Power & Propulsion: TL8 fission reactor; two 10,000-kW MHD tunnels.

Occupancy: 5 RCS and see above. *Cargo:* 2,000 cf

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	4/800 L	4/800 L	4/800 L	4/800 L	4/800 L
Sup:	4/800 L	4/800 L	4/800 L	4/800 L	–
Mis:	4/800 L	4/800 L	4/800 L	4/800 L	–
Gun:	4/800 L	4/800 L	4/800 L	4/800 L	–
Sen:	4/800 L	4/800 L	4/800 L	4/800 L	–

Weaponry

Eight 127mm missile launchers [4 each in Mis1 & Mis2]; six 25mm cannons [2 each in Gun1-3, linked]; four 600mm torpedo tubes [Body].

Equipment

Body: Full life support for 15 people; TL8 active sonar (20-mile range) [F]; two TL8 active sonars (15-mile range) [L,R]; TL8 passive sonar with towed array (150-mile range); TL8 MAD (150-mile range); four-man airlock; five fire suppression systems; TL8 macroframe with hardened,

high-capacity, and genius options (Complexity 7); five computer terminals; sonar communicator w/scrambler (40-mile range). *Sup:* Duplicate computerized maneuver and diving controls; three advanced radar/ladar detectors; three TL8 inertial navigation systems; three IFF systems; three HUDWAC displays w/pupil scanners; LLTV w/60' periscope (300× magnification); three minicomputers; five computer terminals; three radio communicators w/scramblers (10,000-mile range); VLF radio communicator (10,000-mile range); two searchlights (10-mile range); fire suppression system. *Mis:* Radar (45-mile range). *Gun:* TL8 LLTV (150× magnification). *Sen:* Low-res radar (1,000-mile range); thermograph (1,000-mile range).

Statistics

Size: 35'×40'×110' *Payload:* 320 tons *Lwt.:* 1,835 tons
Volume: 69,835 cf *SizeMod:* +8 *Price:* $582 million

HT: 8 *HP:* 48,000 [Body] 2,400 [Sup] 1800 [Mis] 750 [Gun] 900 [Sen]

wSpeed: 25 *wAccel:* 2 *wDecel:* 2 *wMR:* 0.1 *wSR:* 5
uSpeed: 40 *uAccel:* 2 *uDecel:* 2 *uMR:* 0.1 *uSR:* 5
Surface draft 21'. Submerged draft 54'. Crush depth 2,430 yards. Submerged weight 2,182 tons.

TL9 Patrol Craft

This vessel might appear in the late 21st century. Its sensor array (partly mounted on a retractable "periscope" mast) and radical stealth features enable it to perform scouting functions and courier, personnel transfer, and diver insertion tasks. Its two-man crew (one commander-pilot, one systems operator) are sufficient to run the ship, thanks to extensive automation and computerization, including "lifelike" holographic display screens depicting the local environment, which slide over the transparent cockpit windows when diving deep or entering combat (the crew can almost forget that they are not viewing their environment directly). The two extra seats are for supernumerary personnel and passengers. This design would suit a very high-tech superhero or villain.

Design Notes: This vessel has total compartmentalization, radical sound baffling, radical emission cloaking, radical stealth, and radiation shielding. It also has full life support for four people, with a backup system good for 4 man-days. It is armed with 20 300mm torpedoes which use either passive sonar homing (effective skill-23), or wire guidance which switches to active sonar homing (effective skill-19) for the final attack. They have speed 90 and range 28,260 yards; their HEAT warheads do 6d×120 (10) damage. The RoF for the launchers is 1/2.

The rainbow lasers have SS 30, Acc 26, 1/2D 38,000, Max 114,000, and RoF 4, and do 5d×19 imp damage; switched to blue-green for underwater combat, their ranges are *halved***.** The power cells attached to the lasers permit 200 salvoes of 4 shots before recharging.

Subassemblies: Body +6.
Power & Propulsion: Two 25.5-MW fission reactors; two 500,000-lb. hydrojets.
Occupancy: 2 RCS, 2 RS, 2 bunks

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	4/1200	4/1200	4/1200	4/1200	4/1200

Weaponry

Two light automatic 300mm torpedo launchers.
Four 36-MJ rainbow lasers (fully stabilized casemate mounts).

Equipment

Duplicate computerized controls; three robot microframes with two terminals; active sonar (27-mile range); passive sonar (72-mile range); two blue-green ladars (20-mile range); multiscanner (20-mile range); four LLTVs (5× magnification); two searchlights (5-mile range); sonar detector; two blue-green medium-range lasercoms w/scrambler; very-long-range radio w/scrambler; long-range VLF radio w/scrambler; long-range sonar communicator w/scrambler; two sets of precision navigation instruments; two inertial navigation systems; four crash-webs; small galley; two-man airlock; full fire suppression system. The 30' periscope mast has a surveillance sound detector (16×); LLTV (20×); thermograph (2-mile range); nontargeting radar (30-mile range); and advanced radar/laser detector.

Statistics

Size: 25'×15'×64' *Payload:* 60,583 lbs. *Lwt.:* 539,417 lbs.
Volume: 9,600 cf *SizeMod:* +6 *Price:* $23,814,197

HT: 12 *HP:* 18,000 [Body]

wSpeed: 46 *wAccel:* 25 *wDecel:* 10 *wMR:* 0.5 *wSR:* 5
uSpeed: 67 *uAccel:* 25 *uDecel:* 10 *uMR:* 0.5 *uSR:* 5
Surface draft 10'. Submerged draft 25'. Crush depth 5,808 yards. Submerged weight 600,000 lbs.

Underwater Vehicle Design Rules and Options

GURPS Vehicles permits the design of submarines, among other types of vehicles. A few additional details and options apply to the above designs:

Hydrodynamic Hulls *see pp. VE10-11*

Submarine Lines are listed as TL7, but historically, many TL6 submarines used this configuration. During WWI and WWII, submarines used Fine lines; their underwater endurance was limited in any case, so their designers optimized their hull shapes for surface performance. Very Fine Lines were introduced at the end of WWII, and are still common today on non-nuclear subs.

In addition, TL7 brings *Advanced Submarine Lines* (first seen on the *USS Albacore* in 1953). These are mostly seen on nuclear submarines; they give a volume multiplier (p. VE16) of 1.3, and a divisor when calculating Submerged Hydrodynamic Drag (p. VE132) of Ls = 20. (This gives submerged performance values closer to real-world values for modern nuclear subs.) For all other purposes, they are treated exactly as Submarine Lines.

Communication Systems *see pp. VE47-49*

Ordinary radio waves cannot penetrate water to any useful depth. Submarines can be equipped to *receive* VLF Radio signals, but they cannot *transmit* radio in these wavelengths; only fixed stations and specially equipped large aircraft can transmit VLF. Likewise, subs can only be equipped to receive ELF signals, and extending or retracting the antenna for this purpose actually takes around 30 minutes (not 30 seconds) on contemporary subs. However, several additional specialized systems are available:

Sonar Communicator: This device permits communication underwater between two vessels with compatible (usually identical) equipment, at up to twice the active sonar's range. Messages can be voice, text, or datalink, and may use scramblers. Man-portable systems are also available. The equipment added to a sonar system is designed as a long-range radio, but with ×10 weight and volume and ×2 cost.

Communications Buoy/Trailing Wire Antenna: This is a buoy or wire, trailed behind a submerged submarine, which floats to the surface and acts as an antenna allowing the sub to receive and optionally transmit regular (not VLF/ELF) radio messages. The system occupies 100 cf, weighs 5,000 lbs., and costs $250,000.

Message Buoy: This is a small floating buoy, launched from a sub's decoy discharger, with a medium-range radio that transmits a looped text or voice message until its batteries run down in about 1.4 hours. 0.15 cf, 10 lbs., $2,000.

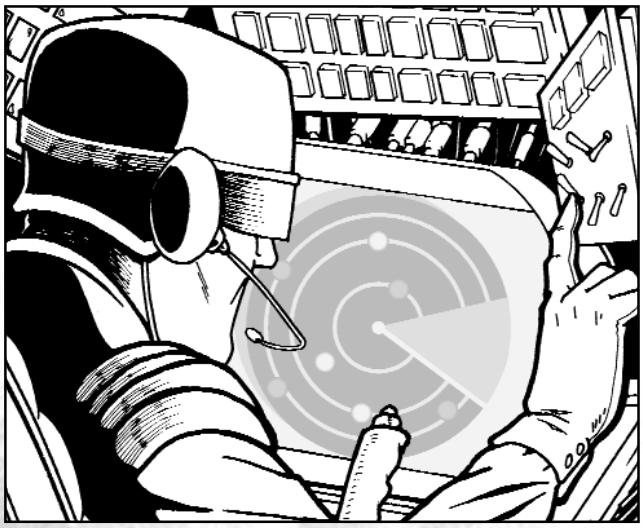
At TL8+, *Laser Communicators* (p. VE48) may be built to use blue-green light, giving +20% cost and half range. The advantage is that a blue-green laser communicator's range in *clear* water is the same as in air, whereas a regular laser's underwater range is only 1/10 of its range in air.

Ladar *see pp. VE51-52*

At the GM's option, designers may build ladar systems to use blue-green light, at +20% cost, and with the same change in performance as with the laser communicator, above. Note that this in turn may imply the development of submarines with ladar stealth features and other complications.

Sonar *see pp. VE52-53*

The rules for sonar systems in ***GURPS Vehicles*** are necessarily a simplification of a *highly* complex field of technology. Frequencies, array types, power levels, and other considerations all interact to determine a system's capabilities, and there are numerous options for designers. Readers researching real-world vessels should feel free to use real-world performance (and also weight, size, and power consumption), rather than the ***Vehicles*** results, if they can find out enough details.



Navigation Systems *see pp. VE56-58*

Submarines equipped with active sonar may have *Sonar IFF,* which behaves exactly like radio-based IFF, but uses sonar rather than radio signals.

Submarines may also have a *Sonar Positioning System,* which is similar to GPS, but uses active sonar transponders, fixed to the sea bottom at known locations, instead of satellites. Single units are sometimes used to mark important locations, but they are more frequently encountered where several transponders are planted across a wide "field." Submarines within their own active sonar range can triangulate their position with GPS-standard accuracy. This is most often used in scientific or salvage work where positioning is critical. At TL7, the transmitters are 1 cf, 50 lbs., and $2,000; a receiver is 0.2 cf, 10 lbs., and $6,000. Halve all these values at TL8, and divide them by 4 at TL9.

Electronic Countermeasures *see pp. VE59-60*

Acoustic EW Analogs: Almost all electronic warfare equipment has an underwater acoustic/sonar analog. However, acoustic systems are bulky and power-hungry. Unless otherwise noted, *active* devices, which broadcast or rebroadcast sound, have 10 times the volume, weight, power consumption, and cost of radio-frequency devices intended for use in atmosphere. Passive devices (detectors, reflectors, etc.) are not a lot bigger, but if they are mounted externally on the vehicle, they weigh twice as much (built to cope with being pulled through water).

Sonar Detector (TL6): This detects active sonar transmissions (at up to ×4 active sonar range) and provides a rough bearing (±30°) and range (±50%) to the source. It has five times the volume, weight, and cost of a radar detector of the same TL. (In fact, it can either be an add-on to an existing sonar array, or it can have its own dedicated array. It can be tied to the vessel's computer to permit transmission profiling.)

Nuclear Reactors *see pp. VE85-86*

Fission reactors used in ships are built to have longer lifetimes: 5 years at early TL7, 10 years at mid-TL7, and 20 years by the end of the tech level. They also tend to cost more. All this can be simulated by allowing the designer to include additional fuel in the reactor design.

Concealment and Stealth Features *see pp. VE91-92*

Sound Baffling: Realistically, there are more levels of sound baffling available, which can be represented by additional levels:

Level	Weight	Cost	Multiplier
Modest	1	$50	×0.5
Basic	2	$100	×1
Improved	3	$500	×1.5
Radical	4	$1,000	×2
Advanced	6	$5,000	×3
Extreme	8	$10,000	×4

Scan penalty = multiplier × (TL of vehicle - 4) (round down).

Submerged Performance *see pp. VE132-133*

Crush and Test Depth: The ***GURPS Vehicles*** rules generate crush depths for real-world submarines that err on the side of generosity. For more realistic calculations, multiply by ×1 yards rather than ×10 yards. Also, note that DR from ablative or non-rigid armor does not apply.

Note also that, strictly speaking, contrary to p. VE133, unmanned vehicles *do* have crush depth problems, and components mounted externally to pressure-proof manned hulls also have to be *pressure-proofed.* Most components can be pressure-proofed by doubling weight, volume, and cost (in addition to any ruggedization). This adds water-proofing, insulates electrical components, and either eliminates air gaps or fills them with oil or other fluids. Those components which require an air or vacuum gap to function (including all TL6 electronics except sonar; controls, crew stations, accommodations, environmental systems; air-breathing engines; and items with long-occupancy access space) must be placed in an independent hull, armored to the required crush depth. This hull may be placed inside the main hull or may be externally mounted.

If more realism is required, then the size and shape of the vessel should be taken into account, since smaller pressure hulls are inherently stronger than large ones, and spheres are twice as strong as cylinders. The revised crush formula is:

Crush Depth = (DR + 10) × Frame Modifier × Shape Modifier/ Size Modifier

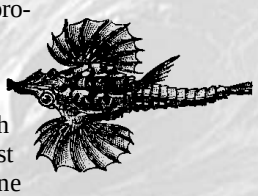
The Size Modifier is taken from the table on p. VE26; modifiers less than +1 are treated as +1 in this calculation. The largest modern subs have modifiers of +10, while nuclear attack subs are +9, WWI/WWII subs are +6 to +8, and early subs are +3 or +4. DSVs typically accommodate their crews within a pressure sphere with a Size Modifier of +3.

The Shape Modifier is 24 for spherical hulls, 6 for submersible hulls, and 3 for non-submersible hulls. (Note: this supercedes the division by 2 mentioned on p. VE133 for non-submersible hulls.)

A Spherical Hull is a special hull shape that gives a vehicle extreme pressure resistance. It increases the volume of internal components (as per the rule on p. VE16) by ×1.9. When calculating vehicle performance, a spherical hull has no hydrodynamic lines and no streamlining. However, accommodation and other components may be placed within spherical hulls *inside* a hull with any level of hydrodynamic lines or streamlining, or inside a submersible hull. Similarly, modern DSVs have accommodation, life-support and controls placed within spherical hulls; other pressure-proofed components are mounted externally or placed within an unsealed submersible hull with minimal armor. If the outer hull has submarine lines then an internal spherical hull can be no larger than 10% of the volume of the outer hull.

While this system generates absolute maximum crush depth values for submarines, practical safe limits are even more severe. To reflect this, give a submarine a *test depth* equal to 1/2 of its crush depth. This is the normal maximum operating depth which the submarine will not exceed during routine operations. If it dives deeper, it must make a HT roll every minute with a +2 bonus to avoid flooding (pp. VE186-187), and every minute of flooding causes damage to the hull equal to 1d × depth/10 yards. If it then exceeds its crush depth, it must roll again to avoid destruction.

Explosions and Pressure: When a submarine dives, its hull has to resist water pressure. As concussion damage also takes the form of pressure, these two effects are cumulative, and a submarine under high pressure may well be highly vulnerable to nearby explosions. GMs who wish to represent this may rule that part of the vessel's DR is used to withstand pressure from depth, and that only the remaining DR can be used to stop concussion damage. Check at what fraction of crush depth the sub is operating, and proportionally reduce DR against explosion damage *only,* remembering that DR is squared against concussion damage. (Thus, a vessel at its test depth uses half its usual DR, squared, against explosions.) This makes a submarine near its crush depth, its hull already groaning, vulnerable to even very small depth charges or torpedoes.

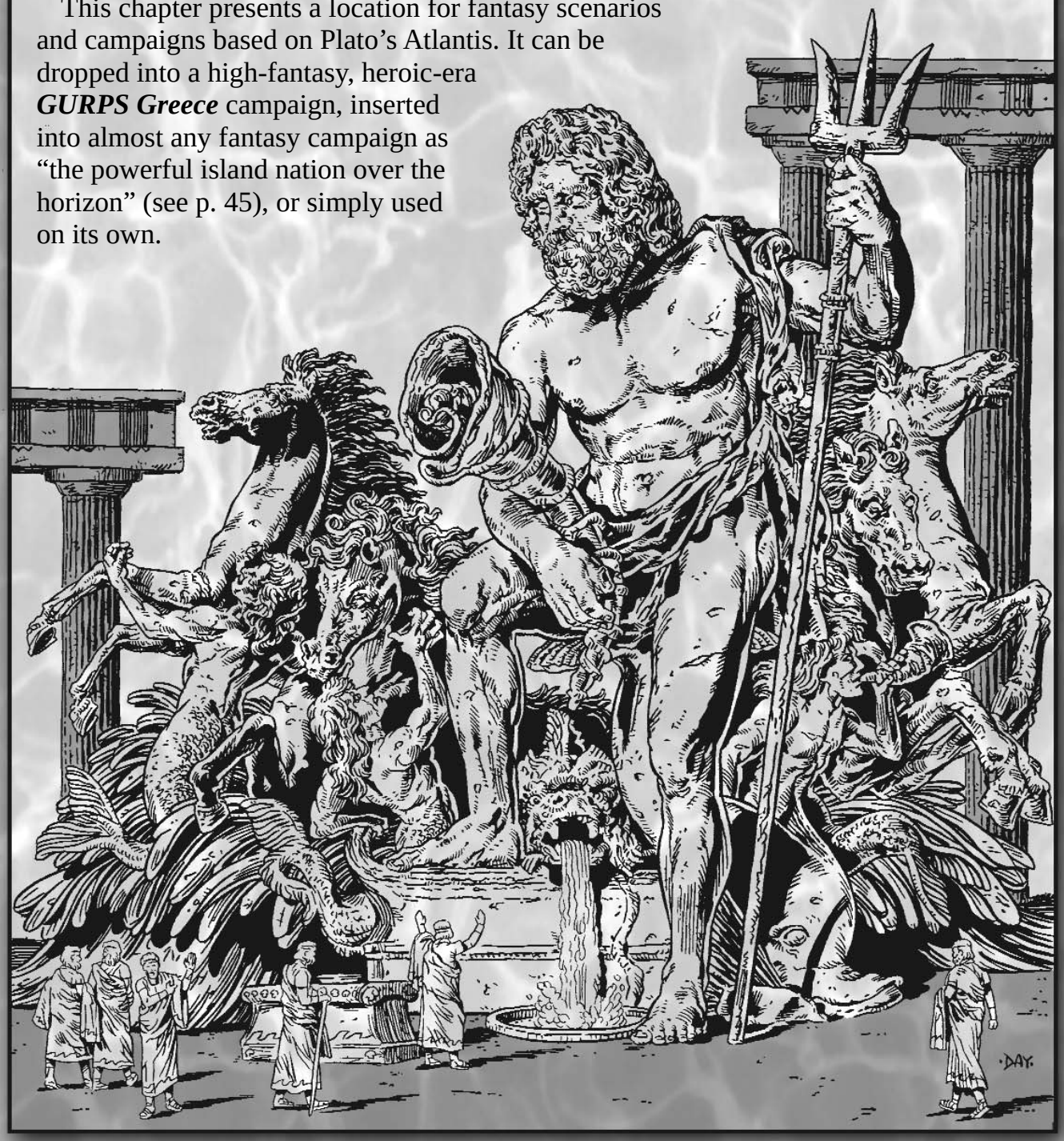


CHAPTER FOUR

THE ORICHALCUM AGE

"For these histories tell of a mighty power which unprovoked made an expedition against the whole of Europe and Asia . . ."
– Plato, ***Timaeus***

This chapter presents a location for fantasy scenarios and campaigns based on Plato's Atlantis. It can be dropped into a high-fantasy, heroic-era ***GURPS Greece*** campaign, inserted into almost any fantasy campaign as "the powerful island nation over the horizon" (see p. 45), or simply used on its own.



Introduction

Plato had it right, though the Egyptians didn't know everything (or didn't tell Solon all they knew). Atlantis existed, and was indeed a great imperialist island nation out beyond the Pillars of Hercules, founded by Poseidon. This chapter describes it at the height of its glory and arrogance, with its rulers bent on world conquest.

Obviously, this is pure fantasy; neither the geology, the history, nor the metaphysics work in the real world. That said, GMs are welcome to plunder this chapter for ideas for *any* games, especially the sort which assume that the history and science taught in schools is a tissue of false assumptions and deliberate lies.

PCs in games that use this Atlantis will mostly likely be heroic adventurers, and can take a number of roles. On the one hand, Atlantis itself has a rich and dynamic society, with plenty of scope for intrigue and glory. Atlantean PCs could be noble leaders, heroic warriors, poor but talented folk seeking a place in the partly meritocratic social order, roguish denizens of the city streets, or wise priests seeking to guide this land so uniquely favored by the gods. On the other hand, Atlantis is now plotting military expansion into the Mediterranean lands. Its original role in Plato's story was that of a once-noble, increasingly corrupt adversary – a worthy foe – and campaigns can be built around the struggle to stop the Atlanteans from conquering the world. PCs in that case could be warriors, spies, "accidental heroes," emissaries from nations trying to dissuade or at least divert the Atlanteans from conquest, or priests or scholars seeking to comprehend the nature of the Atlanteans' advantages.

Active or Remote Gods?

One question that the GM will have to resolve in a game using this setting is how active the gods are in the affairs of men. In Plato's story, Atlantis was explicitly founded, and eventually destroyed, by the actions of the Olympians, but they do not appear to intervene much in the period between these two events. For that matter, the story of the foundation can be viewed as an old myth, and the eventual destruction could look like a purely natural phenomenon. On the other hand, the flavor of Greek myth allows for a lot of blatant divine intervention, and Atlantis, the creation of Poseidon, could see its share of this.

See Chapter 5 of ***GURPS Greece*** for guidelines for handling such matters. This chapter is written to support games with various degrees of divine activity. Where necessary, guidelines are given for handling different levels.

Geography

Atlantis is a roughly diamond-shaped island, lying just over 600 miles west of the Straits of Gibraltar. It is just over 1,000 miles long north to south, and about 800 miles at its widest from east to west. (The Azores and Madeira do not exist in this world, although other islands do, most of them under Atlantean control.) Its geology is complex and irregular, with several mountain ranges, some of them with active volcanoes, but also some fertile lowlands, including the broad central plain where the capital city, also called Atlantis but sometimes referred to as Poseidonis, is located. There are also several areas of marshland. The mountain ranges run right down to the sea in many places, creating rocky, inhospitable coasts; Atlantis's few ports, especially the capital, are highly valued, and making a secret landing here could be difficult. The climate is broadly Mediterranean, with enough rain to keep the land fertile.

The Principalities

Atlantis is an empire with a strong central ruler, subdivided into 10 principalities, including the capital and its surrounding region which are controlled directly by the Emperor. He and the nine princes are all directly descended from Poseidon and Cleito (see p. 78), and the royal families are generally united, albeit prone to minor family squabbles and plots. However, as the island becomes increasingly developed and settled, there is growing scope for rivalry and serious intrigue. The current thrust toward imperial expansion may be deliberately promoted by shrewd (or desperate) emperors as a distraction from internal rivalries and a way of providing younger sons with their own lands to rule. The families are also increasingly inbred, although intermarriage with the Atlantean warrior nobility, and the strength of their supernatural divine heritage, has kept this from being a problem so far.

The nine subsidiary principalities are as follows:

Eumelia is the region closest to the Mediterranean. Its prince has traditionally been closely involved in military campaigns in that direction, and controls large territories in Spain; this has led him to promote the building of ports and harbors in his territory, and to encourage the development of shipbuilding and sailing skills.

Ampheresia is a region of hill country adjacent to the central plain. It is a fairly fertile region, mostly given over to the herding of sheep and cattle.

Evaemona mostly consists of the mountain regions behind Ampheresia. It is a large but sparsely populated land which produces hardy men; iron, copper, and orichalcum mines generate a fair amount of wealth.

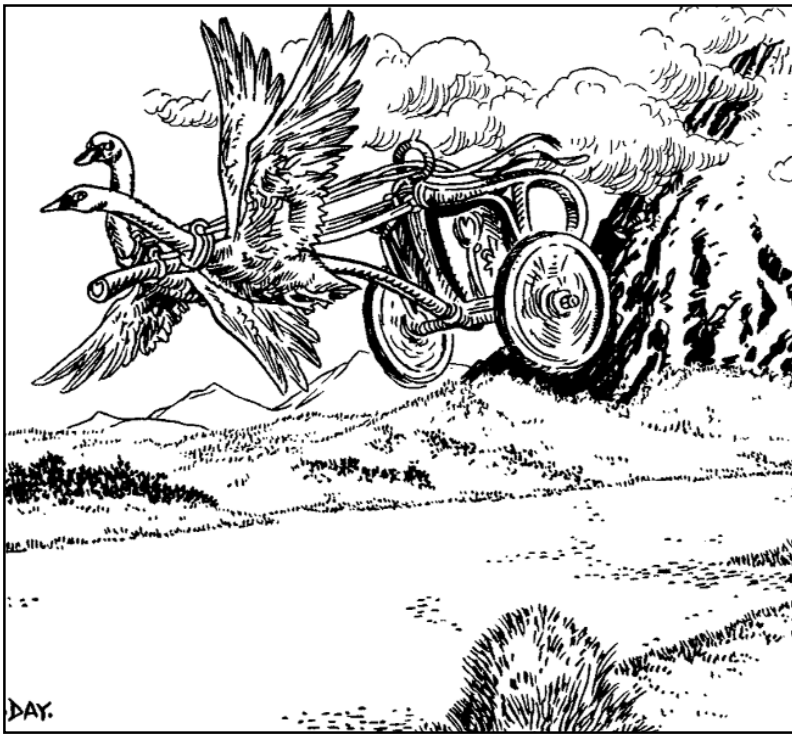
Mneseusa, in the north of the island, mostly consists of a secondary fertile plain, fairly populous and wealthy, but overshadowed by the capital.

The Tech Level

This version of Atlantis is nominally designed for inclusion in a Heroic-era ***GURPS Greece*** campaign, in which the standard tech level for the world at large is TL1. However, the sword-and-sorcery fantasy feel for which it aims may be better supported by advancing the whole setting to TL2. (If anyone asks, the GM can suggest that the aftermath of the sinking of Atlantis will lead to a worldwide technological regression.)

Furthermore, Atlantis itself is a formidable nation, blessed by the gods and skilled in many crafts. To reflect this, it can be assumed to have advanced a full Tech Level in some specific areas, and possibly even more. Atlantean warriors could have use of, not only all the bronze armor types described in ***GURPS Greece*** (p. GR78), but also scale armor (equivalent to iron, but actually bronze improved by the addition of some orichalcum; see p. 77), including some arm and leg protection, all at double listed cost. Weapons are in the traditional Greek style. Optionally, giving Atlantean ships and siege engineers Greek Fire (p. CII39 – perhaps renamed "Atlantean Fire") adds a real terror weapon. Buildings in the capital may incorporate subtle arches and other refined engineering techniques, and perhaps a few domes, explaining their breathtaking grandeur. Atlantean vehicles would certainly have TL2-4 structures, and could use shaft-and-collar harnesses. They might even be equipped with crude compasses and cumbersome but functional telescopes on vehicular mounts.

If GMs want to downplay or eliminate magic from the setting, while still making Atlantean abilities scary and a little mysterious, it would be possible to keep the rest of the world at TL1 or low TL2, while moving many Atlantean crafts and sciences to TL3 or even TL4. Adding gunpowder would probably change things too much, but advanced sailing vessels and a little plate armor would explain the threat that Atlantis poses to its neighbors. (Hot air balloons with aerial sails might be fun, too.) This would make games set during the Wars of Conquest, with PCs opposing Atlantis, a matter of desperate battles against technologically superior foes. While this moves away from Plato and the feel of Greek myth in general, scenarios could even be based on attempts to capture and analyze Athenian technology, involving first heroic warriors on raiding missions, then philosophers and craftsmen studying what has been captured.



Autochthesa is the far northern coastal region. Chilly and wind-blown by Atlantean standards, it is inhabited by a quiet but poetic people, who mostly make their living as fishermen. There are rumored to be strange creatures and witch-cults dwelling in these mountains.

Elasippusia is another coastal principality, occupying much of the western seaboard. It has perhaps the widest variety of scenery of any of the nine, with plains, mountains, and marshes; its inhabitants are often good sailors, and some of them are rumored to have dealings with strange beings in lands beyond the western ocean.

Mestoron, south of the capital, consists of a mixture of mountains and hills. It is fertile enough to field a large army, harsh enough for them to make especially good troops. Traditionally, the emperor cultivates the Prince of Mestoron as a personal ally.

Azaeton is a semidesert region south of Mestoron. Its princes have to work hard to maintain their power and prestige in the councils of Atlantis; some do so by pursuing overseas adventures, others act as brokers in the debates between their colleagues, and a few pursue strange magics or darker secrets. Several herds of elephants dwell in Azaeton's more fertile areas, and it traditionally provides much of the Atlantean elephant corps.

Last, *Diaprepesia* mostly consists of the rocky, hot southern coastlands of the island. Lacking decent harbors, it is not as good a source of ships and sailors as Eumelia or Elasippusia; most of the population are mountain-dwelling shepherds. However, some clever princes have exploited their land's perceived weakness, persuading jealous or cautious emperors to grant control of islands in the ocean to them rather than their stronger colleagues. As a result, the prince of Diaprepesia controls a fair amount of trade, and is said to have a vast espionage network.

The Capital

The heart of the Empire of Atlantis is, of course, its great capital city (and the surrounding farmlands which support it). This is much as Plato's account describes it (see pp. 8-9); however, the main irrigation ditch feeding the great plain is not as wide or deep as Plato says. (This preserves some minimal plausibility; 600' by 100' is simply excessive.) The great wall surrounding the outer city, over a dozen miles in diameter and around 40 in circumference, is a fairly low structure, mostly intended to mark the limits of building; the Atlanteans expect no attacks on their homeland. The metal-plated walls of the inner ring-cities, however, were built to impress, by demigods.

The city itself functions as an administrative and ceremonial center. It is also the heart of the Atlantean trade system, although it actually takes rather more from that than it contributes in goods or organization – despite the fact that it is also a center of craftsmanship. Atlantean artisans are some of the finest in the world, perhaps *the* finest, but most of their handiwork stays in the city, making it ever more beautiful and providing ever more comforts and amusements for its people. Atlantean aristocrats have great houses here, but spend more time running their agricultural holdings.

For this *is* a city of grand and impressive buildings, all constructed of the local three-colored (black, white, and red) stones, embellished with bronze and orichalcum. Most are not especially tall – the city has traditionally sprawled wider when it needed more space, and its engineers find no reason to build higher, which just makes for tiring climbs up and down stairs, and overshadowed streets – but some, especially the temples, are built on breathtaking scale. Most public buildings have forests of columns supporting the roof; the style is something between Classical Greek elegance and Egyptian sheer mass. Nonetheless, Atlantean architects and masons are highly skilled, and can span vast gaps when they want to. If the local tech level is set high, they may sometimes use arches and domes, but even those serve mostly as embellishments or enhancement to the traditional pillared style.

(GMs of a romantic bent can easily use Poseidonis as a setting for high melodrama. For quasi-Shakespearean effect, play up the elegance, the canals, and the noble factions.)

Orichalcum

The fabulous metal orichalcum is one of the secrets of Atlantis's power. It is actually a unique substance, found only here. (This *is* a fantasy setting; players who demand to know where it is on the periodic table should be ignored.)

Mined in the mountains, it can be refined as easily as copper, and then worked much like bronze or iron. All Atlantean smiths are familiar with it; those from other countries will be at -2 to skill until they have spent a week or so familiarizing themselves with its characteristics. However, pure orichalcum is quite rare, even on the island, and also in demand; it is as expensive as silver.

Fortunately, it can be worked in quite thin sheets and alloyed with an equal amount of copper while retaining much of its decorative quality; it does indeed flash with a red light when it catches the sun, almost seeming to glow. The walls of the inner citadel of Atlantis, and many of the temples and other public buildings, are heavily decorated with this metal, suggesting fabulous expense. (However, the Atlanteans take a somewhat superstitious pride in the look of these things, and the royal family would take a personal interest if anyone vandalized their city's finest decoration; theft of these decorations is not an option for half-sensible PCs.)

Moreover, Atlantean smiths have discovered that a small quantity of orichalcum, alloyed in precise proportions with copper and tin, produce a much superior form of bronze. For game purposes, this can be considered equal to the best quality iron produced at TL3, but items made from it cost twice as much as they would if made from iron at TL3. The Atlantean royalty, nobility, and royal guards wear armor made of this substance, mostly in the form of scale torso and limb protection (p. B210). ***GURPS Low-Tech*** has detailed rules for different metal types at different TLs.

In a high-magic game, properly purified orichalcum might even function as a powerstone (p. B161). This would give Atlantis a *large* advantage. For a more "realistic" game, the Atlanteans may have learned to extract and work some unusual metal such as titanium (although that really demands high technology, and is better for tensile strength than for hardness).

The History of Atlantis

As Plato's account will one day make clear, Atlantis was founded by the god Poseidon. GMs who want to keep their games essentially materialist can treat this as a founding-myth that is used to explain a few things about the place and its royal family. More cynical readers are entirely welcome to treat the following as an "official story" which covers up a great deal of oppression and conflict, but in a more romantic game which takes the assumptions of Greek myth and Plato's stories seriously, it can be taken at face value. *Some* kind of "golden past" is probably essential, though; what's the point of decadence if there was never anything better? (Which is not to say that the seeds of decline were not present from the first, of course.)

Even in the days when Cleito was giving birth to her 10 sons, the island of Atlantis was fairly well-populated. Those early inhabitants lived as semi-nomadic shepherds, with some farmers on the lowland plains and villages which lived partly by trade and craftsmanship; some of the chieftains doubled as warriors, but the island was not especially strife-torn. When the descendents of Poseidon and Cleito took charge, these people were mostly happy enough with the new order; the old chiefs became an aristocracy, villages grew into towns which prospered as the princes encouraged trade, and the divinely ordained system of clear, comprehensible laws resolved numerous problems.

The Age of Greatness

The early rulers of Atlantis were, literally, demigods, with extraordinary personal talents and occasional direct assistance from Olympus. Not many of them had overt supernatural powers, but they were mighty warriors, long-lived, and sometimes exceptionally wise. They were also a family in the best sense; they worked together and supported each other. Their periodic ceremonies and sacred oaths of mutual support served to reinforce this, and the laws which were the basis of their rule were created and modified by consensus. Violent rivalry was discouraged by the sense that their divine ancestor was watching them, and conflict was mediated by those laws, which were always understood to apply to them as much as to their subjects.

This was the golden age, when Atlantis built its prosperity, launched peaceful expeditions to establish contact with the rest of the world (taking control of nearby islands and trading with other growing cultures), building its great capital city and a number of other towns, and mastering several useful crafts and sciences. The arts were less well-regarded, but, for example, Atlantean buildings were so elegantly proportioned that they needed few statues or frescoes to look beautiful.

Atlantis did not develop any sort of overseas empire at this date, because, first, there was a great deal of room for growth and expansion at home, and second, the lands that might have looked worth conquering were mostly very distant. It was clear that sending an army that far, even one merely sufficient to suppress a weaker nation, would overstretch Atlantean resources. Nonetheless, Atlantis had both an army, consisting of a militia of citizen infantry led by chariot-riding nobles, and a small but capable navy. The

former served to suppress banditry (which did exist on some scale, despite all the claims of unity and peace), and also provided small garrisons for Atlantean outposts overseas. Military training was also seen as fine exercise that promoted the powerful Atlantean sense of community. Meanwhile, the navy dealt with piracy and protected trade routes. The latter proved highly necessary because the western Mediterranean was seriously underdeveloped at this time; Atlantis was the only law in those parts – which represented a dangerous temptation.

Decadence

Eventually, the island of Atlantis was about as fully developed as its inhabitants could make it. This is not to say that it was overcrowded; there was still scope for expansion into fertile areas, and there was never any serious risk of famine. But there were no more great regions to transform into farmland, merely patches of ground, and there was no more real scope for city-building. Meanwhile, growing foreign trade had encouraged the building of an ever-stronger navy. Those aristocrats who made a career of the army were forever telling their princes that there was much that they could accomplish abroad.

And so the foreign adventures began. At first, these were simply extensions of the old idea of taking charge of uninhabited or thinly inhabited islands, and of creating outposts and garrisons. The underdeveloped western Mediterranean was conquered, less by dramatic invasion than by gradual expansion. Soon, the region around the Pillars of Hercules – especially what would one day be called southern Spain – was little more than a subsidiary province of Eumelia. (An alternate name for the principality's founder was Gadeirus, so the conquered land was named Gades.) There, and in a string of bases along the North African coast, Atlanteans settled and began to assess their neighbors.

Meanwhile, the process of conquest was affecting Atlantean society. The Atlanteans had always kept a few slaves; barbarian outlanders and suchlike, taken prisoner in police actions. Enslaving them, under a framework of just (if stern) laws, had actually been a relatively humane response to the problem of occasional piratical raids or banditry. Atlantis has no prisons as such, but could not release captured enemies who might decide to return to their previous ways. Now, however, facing persistent resistance from the natives of newly conquered lands, Atlantis acquired a growing number of slaves. Increased supply drove the price down, and many Atlantean citizens discovered that they enjoyed having someone to do their dirty work. Increasingly, Atlanteans began to assume that all foreigners were natural-born slaves.

Atlantean merchants, too, absorbed this attitude; they began arming their ships more heavily, and often *took* what they wanted rather than trading for it honestly. Even when they did come as buyers rather than pirates, there were all too likely to double as spies; the Atlantean government had always exerted some control over their activities, and now they became part of the military espionage arm.

At court, plotting and rivalry became the order of the day. It was still subtle and mostly concealed, but the old habit of mutual loyalty was strained as family relationships grew more remote and diffuse. Some of the princes spent years away from home, and came back wondering why they were rewarded less than the lazy court-dwellers; the court-dwellers saw the more active types as crass and unsubtle. As each principality consolidated the gains of earlier centuries, differences in their resource bases grew more evident, exacerbating mutual hostilities. Because trade was heavily regulated, a prince was likely to blame his neighbor personally if important supplies were slow or prices rose.

Atlantis, in short, slipped toward instability.

Atlantean Sports

The capital of Atlantis has gymnasia and a famous horse-racing stadium, and its people, following a Greek cultural pattern, have traditionally been enthusiastic about sport and healthy exercise. (Contests are almost entirely limited to men, however.) Footraces (usually over medium distances), long jumping, and javelin or discus throwing are their favorite athletic contests. Wrestling is mostly favored by stronger and more aggressive Atlantean men, as it takes a pretty rough form, albeit with clear rules that usually prevent permanent injury. (Wrestlers thus mostly develop strength and toughness, although exceptional skill can win fights and earn grudging respect. More cinematic games might treat this sport as Pancratium; see ***GURPS Martial Arts,*** p. MA94-95.) Horse races are run bareback (and certainly without stirrups); the riders are mostly youthful daredevils, as the light horses run best under minimum loads. This is one way that a young Atlantean can quickly earn fame and honor. There are no organized chariot races, although aristocrats often indulge in informal contests.

A foreigner would have to use a lot of wit and ingenuity to even be permitted to compete in Atlantean sporting contests, as these are seen as integral to the society – not something that outsiders should be permitted to disrupt. Someone who proved himself better than an Atlantean champion would earn grudging acknowledgement from a minority of Atlanteans, but most would shrug and refer to him as a muscle-bound, thuggish barbarian.

However, with the decline of Atlantean virtue and the growth of wealth, many Atlanteans find they prefer watching sport to engaging in it themselves, while betting has changed from an occasional amusement to a common habit; there are even a very few professional bookmakers in the larger cities. The stadiums and gymnasia are regularly filled with cheering crowds, and there are increasing dark rumors of fixed contests and doubtful tactics. For a darker and more decadent version, more Roman-style than Greek, GMs can have the Atlanteans running gladiatorial contests.

The Current Situation

Few emperors of Atlantis have ever been fools, and the current occupant of the throne is certainly clever enough to see that his people want plunder, slaves, and military glory, while the nine princes and their families must be distracted from court intrigue. This means one thing; Atlantis must go to war, and furthermore, it must conquer wealthy, populous lands. There are vast areas of the world which could be taken with minimal effort, but wildernesses and barbarian tribes do not represent the right sort of conquest.

But the Emperor is also clever enough to move cautiously, and has been able to convince most of the princes that the program of conquest should be carefully planned. The lands of the eastern Mediterranean, the obvious regions to attack, include some quite dynamic and militarily capable nations. None of them compare to Atlantis, of course, but even these natural slaves may put up a tough fight against forces a long way from home. So far, the people of Atlantis have been prepared to wait, confident that glory and triumph are coming, but lately a few grumbles have been heard in the marketplaces.

The Emperor Poseidophilios — 278 points

Age 34; 5'5"; 150 lbs. A clean-shaven, obviously fit but slightly stocky man who still looks young, with mid-brown hair and brown eyes.

Attributes: ST 12 [20]; DX 12 [20]; IQ 10 [0]; HT 13 [30]
Speed 6.25; Move 6.
Block 7; Dodge 6; Parry 6.

Advantages: Attractive [5]; Claim to Hospitality (Atlantean aristocracy) [8]; Collected [5]; Filthy Rich [50]; Literacy [10]; Magery 2 [25]; Reputation +1 (As a wise ruler, among traditionalist courtiers and aristocrats) [2]; Status 7 [30]; Unusual Background (Divine Birth) [25].

Disadvantages: Code of Honor ("Pirate's") [-5]; Duty (Ruler of Atlantis, nonhazardous, 12-) [-5]; Overconfidence [-10]; Stubbornness [-5].

Quirks: Friendly drunk; Indulges in fine wines, gourmet foods, and pretty women, when they are freely available; Mild Intolerance; Vain about facial grooming. [-4]

Skills: Animal Handling-13 [10]; Detect Lies-7 [1/2]; Knife-11 [1/2]; Lasso-12 [2]; Law-12 [8]; Leadership-8 [1/2]; Sacrifice-12 [8]; Savoir-Faire-11/13 [1/2]; Shield-14 [4]; Shortsword-12 [2]; Spear-12 [2]; Spear Throwing-13 [4]; Staff-10 [0]; Teamster (Horses)-10 [2]; Theology-12 [8].

Languages: Atlantean (Native)-12 [2].

Spells: Create Water-12 [4]; Purify Water-12 [4]; Seek Earth-12 [4]; Seek Water-12 [4]; Shape Earth-11 [2]; Shape Water-12 [4]; Walk on Water-10 [1].

The current Lord of Atlantis is seen by some traditionalists in his court as a virtuous throwback to the best of the old Atlantean traditions; a skilled warrior, no fool, concerned for his people and determined that his nation should be the greatest in the world. He has proved himself among the princes in the periodic bull-ceremonies, and his legal judgments are thought wise.

This, unfortunately, is all excessively optimistic. Poseidophilios did indeed pay attention to his childhood lessons in the traditions of Atlantean statecraft and civic virtue, but these have left him slightly but dangerously naive in his dealings with the rest of his family, while, like many of his subjects, he tends to assume that it is Atlantis's nature to be superior, rather than working to earn dominance. He has also acquired a taste for some more decadent pleasures, which the traditional education assumed would not generally be available to an emperor. And he still has a youthful belief that he knows everything important.

PCs having dealings with Poseidophilios may find him fair, sensible, and thoughtful – at first. However, when his judgments are questioned, his plans go awry, or he comes under increasing pressure, his flaws will become increasingly obvious.

Moreover, it is said that various omens and oracles have been issuing dark hints. The gods may not be entirely happy with Atlantis. Unfortunately, however, those who believe this have drawn entirely the wrong conclusion, assuming that more victories over unworthy barbarians, and more wealth to spend on overdecorated temples and huge sacrifices, will somehow resolve the problem.

Factions

Although Atlantis has a great tradition of social cohesion, and is still united behind the idea of conquest, there are distinct factions discernible at court and through society, some of them well-established. Although these are focused more on means than ends, they do find themselves at odds at times.

The Ruling House

The Emperor always has a personal following who have linked their fortunes to his own. This consists of a handful of close relatives and aristocrats of solid loyalty, and a small number of servants and bureaucrats of the artisan class who have risen through merit to positions close to the throne. (Atlantis has only a very small bureaucracy – it's essentially a Bronze Age kingdom, ruled through personal authority and governed rather loosely – but *somebody* has to count the taxes and handle the provisioning of the palace kitchens.) This faction is small but very powerful; anyone known to be close to the emperor tends to be obeyed without question in small and medium-sized matters. At present, its members spend most of their time watching the other factions and reporting back to the palace, but any sign of a threat *should* inspire them to action. In fact, most would indeed respond properly, albeit with various levels of competence; about a third are more or less corrupt or excessively lazy, and would tend to dismiss all but the most blatant threats as unworthy of their attention.

The Military Faction

Atlantis lacks a professional army as such, relying on a vast citizen militia. However, some of the aristocracy make a full-time career of the profession of arms, spending most of their time attending to garrisons, overseeing training and militia musters, or just practicing in their chariots. They find they have common cause with slightly lower-status ship captains, elephant corps overseers, and the like, and the influence of this faction extends from the palace to the edges of the empire. The military faction are authentically warlike by nature, favoring aggressive foreign policies. (Because Atlantis has never suffered serious defeat in war, its warriors lack the instinctive caution of the sensible hardened soldier.)

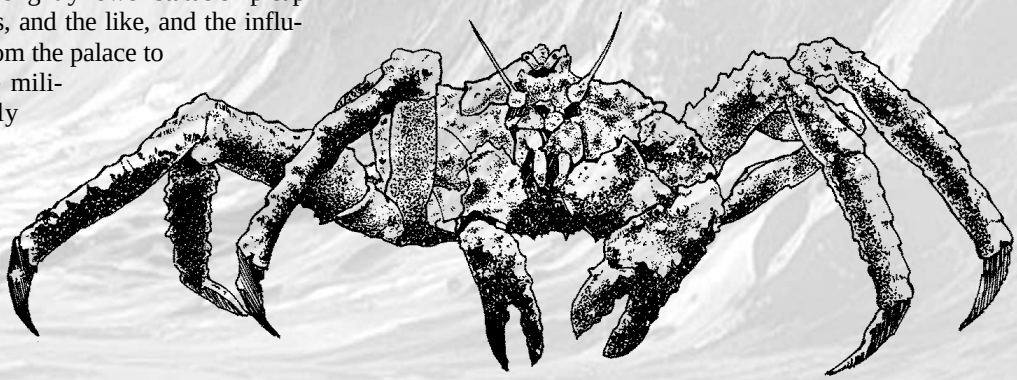
The Temple of Poseidon

Atlanteans worship the Olympian pantheon, although they pay little attention to the chthonic deities (see pp. GR87-88), which may be part of the explanation for the scale of the catastrophe that will one day overcome them. Above all, they revere Poseidon, who they see as, quite literally, the father of their nation, and while most of the temples play only a small part in Atlantean life, his looms large, both physically and socially.

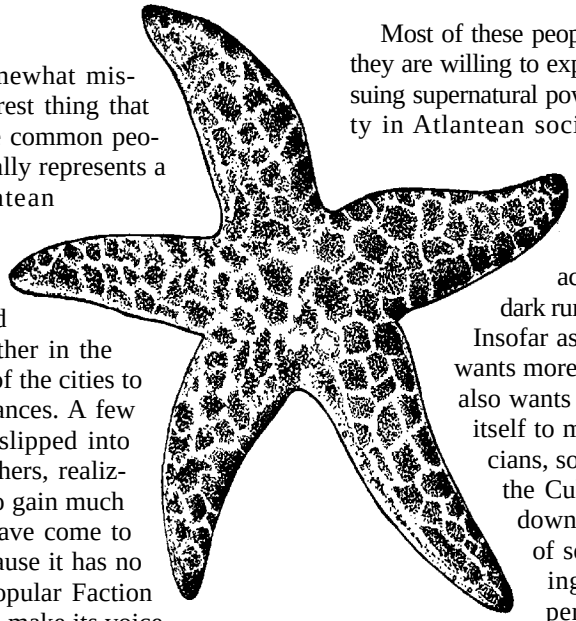
Technically, the emperor is the High Priest of the cult, and the nine princes occupy the next level of the hierarchy. In practice, however, the continuous round of sacrifices and ceremonies is delegated to a career priesthood, which was originally small but which has grown over time as subsidiary temples were established in every city and town, and as each developed its own hierarchies. In other lands, worship of the Olympian gods is a local sort of matter, with no substantial hierarchies extending beyond a given temple, but Atlantis, with its sense of direct association with Poseidon, has developed a full-scale state church. Priests are mostly recruited from the lower reaches of the aristocracy, but the system is fairly flexible; promising and devout young commoners can talk their way in.

(In ***GURPS*** terms, there are now at least five levels of Clerical Rank in the Atlantean system. Clerical Rank in the temple of Poseidon grants +1 Status for every three levels of Rank, rounded off, and most priests have a 1-3 levels of Status to begin with, to which they add this bonus Status.)

The temple hierarchy is primarily concerned with promoting respect for their god (and their priestly offices), but "respect" is all too often translated as "additional decoration on temples and shrines." Thus, its twin concerns are social order and increased wealth (in the form of treasure) for those who support the traditional ways. This makes the temple quick to promote overseas adventurism, although it is also open to persuasion by the wealthier merchants. However, the priests feel that the military faction, who tend to be pragmatic and materialistic, sometimes lack proper respect, which can lead to friction. The priests are happy to support novelty and scholarship, *provided* that their position is not undermined; thus, while some of them look doubtfully at magical activities, others dabble in such things themselves.



The Popular Faction



This group is actually somewhat misnamed; although it is the nearest thing that Atlantis has to a "voice of the common people," the Popular Faction actually represents a more specific part of Atlantean society, and includes some aristocrats among its sympathizers. It mostly draws support from merchants and successful craftsmen, who gather in the marketplaces and wine shops of the cities to discuss their hopes and grievances. A few low-ranking aristocrats have slipped into this class by default, while others, realizing that they can never hope to gain much power in the court or army, have come to regard it as a useful tool. Because it has no direct access to power, the Popular Faction has to use all sorts of tactics to make its voice heard, supporting specific suits in the informal law courts run by the princes, sending "respectful petitions" to the rulers, and arguing points with anyone who might listen. (Atlantean society is strongly hierarchical but not overly snobbish, so this can work.) In extreme cases, the faction's effective control of much trade makes a useful tool.

The Popular Faction acts as a partial check on the urge to greater power among the great aristocrats and the royal family, simply by being visible enough to remind them that they must keep their subjects tolerably contented. However, the faction is actually happy enough to see the lowest levels of society oppressed and exploited; most merchants and master craftsmen have employees whom they have to pay. This leaves the great mass of Atlantean citizens with no voice. Thanks to the old tradition of just laws, and the recent pattern of growth and prosperity, a proletarian uprising is unlikely just yet, but there *are* specific cases of discontent. The faction supports military adventurism so long as it doesn't lead to disruption of trade, and it likes the temples to be rich and venerated but not powerful, as this means that priests and aristocrats order new building works and decorations and then *pay* for them; thus, insofar as it is organized at all, it has a lot of conditional alliances.

The Magical Cult

Although magic is inherently a monopoly of the royal family of Atlantis (see p. 86), most of the more socially powerful of its members have little time and restricted talents in the field. The "magical faction," half way between an underground college and a mystery cult, consists of an odd group of younger sons of the royal house, illegitimate royal offspring (unacknowledged, for whatever reasons; Atlantean society is usually relaxed and flexible enough to find a place for acknowledged by-blows), amateur scholars of the mysterious (some of them aristocrats with just enough royal blood to give them a hint of power), priests with unconventional views (some of them devotees of Hermes or Hecate), and slightly deranged commoners.

Most of these people lack the power to be dangerous, but they are willing to experiment. Also, because the idea of pursuing supernatural power is considered dubious for nonroyalty in Atlantean society, these people are by definition rule-breakers. Magic *itself* is not seen as evil or decadent, but the Magical Cult tends that way. Thus, it is semi-secret; membership is rarely openly acknowledged, although there are usually dark rumors about individual members.

Insofar as it has a goal or an ideology, the Cult wants more power and respect for its members. It also wants the Temple of Poseidon to reorganize itself to make a special place for priestly magicians, so that relationship is often hostile – but the Cult does *not* want to bring the Temple down. Members of the Cult are suspected of seeking high positions at Court, bringing it into conflict with the emperor's personal following. It regards both the military and the "untalented" masses, including the Popular Faction, with thinly veiled disdain, although its magical researchers sometimes have their own reasons for joining campaigns of conquest overseas. Oddly, it seems to take more interest in the oppressed slave-class; there are rumors that it cultivates alliances with dubious foreign magicians in that group, or at least that it hopes to identify and recruit such people.

Relations With Other Lands

Atlantis currently attempts to maintain a national facade of tolerance, but the act is wearing thin; even optimistic foreigners will notice that Atlanteans regard them with disdain, and should come to suspect that Atlantis is planning something. The hard thing is finding an effective response, given Atlantis's military strength and trading power.

For now, Atlantis presents itself as a trading nation whose military might serves only to defend its citizens against piracy and bandits. Few of its neighbors can argue that this is unreasonable; they would do much the same themselves, if they could. The fact that Atlantean spies come as obliging traders (or rather, that most of the rich and persuasive Atlantean merchants double as spies) confuses the issue, as intended.

Greece sees Atlantis as a sibling nation; after all, both worship the Olympian gods in their pure form, and the people of archaic Athens feel that the Atlanteans have much to respect. However, they also recognize the threat, and are planning defenses. To begin with, they are increasingly closing their ports to Atlantean merchantmen. However, they have found other Greeks, not so much unwilling to defend themselves, as resistant to *any* suggestion of unity.

Egypt, currently ruled by "pre-dynastic" priest-pharaohs, builders of step-pyramids and monumental sphinxes, is too inclined to assume that unchanging order is the nature of the world; its people have difficulty grasping the very idea of invasion, and regard the Atlanteans as faintly ludicrous.

The Wars of Conquest

Eventually, Atlantis *will* attempt to conquer the world, and campaigns might be set in the middle of this great war. PCs, played as heroic defenders of their homelands, would probably be Greeks, but might include Egyptians and members of tribal peoples. Given the power of Atlantean arms, the defenders may have to resort to hit-and-run guerrilla warfare – precisely the sort of military actions that that are easiest to build into RPG campaigns, as they give lots of scope for freelance individual heroism. However, it would also be possible to play Atlanteans in this period; the factional politics do not disappear just because there is a war on, and there is plenty of scope for intrigue, espionage, and perhaps attempts to organize evacuations as the tide of war turns, the Greeks launch a counter-invasion, and the omens of catastrophe become too pressing for the wise to ignore.

An Alternate Version

This treatment of the Atlantis myth follows Plato's account as closely as possible, given its intended use. It therefore adopts Plato's definitions of "virtue" and "decadence," and treats the Athenians as heroic resistance fighters.

But Plato's morality is not what most modern readers would profess, and in the end, we only have his word for who was right and who was wrong. Some GMs might even like to turn this around.

Imagine Atlantis as an ancient land which has realized that more can be gained through trade and cooperation than through warfare. It has learned, though hard experience, that killing and plunder are not really glorious. With wealth and maturity, the old system of government has been peacefully transformed into a constitutional monarchy. Atlantean traders seek to profit by spreading the benefits of this progress across the world, starting with the Mediterranean.

Unfortunately, they have met little but hostility. The totalitarian theocrats of Egypt have closed their borders rather than deal with the new ideas that inevitably come with trade, and the petty bandit-kings of Greece (as crude a bunch of plunderers as Homer ever depicted) see every passing Atlantean merchantman as an invitation to piracy. Atlantis feels it has little choice but to respond; its navy provides escorts for its traders, while its diplomats seek to bolster honest, friendly governments where possible.

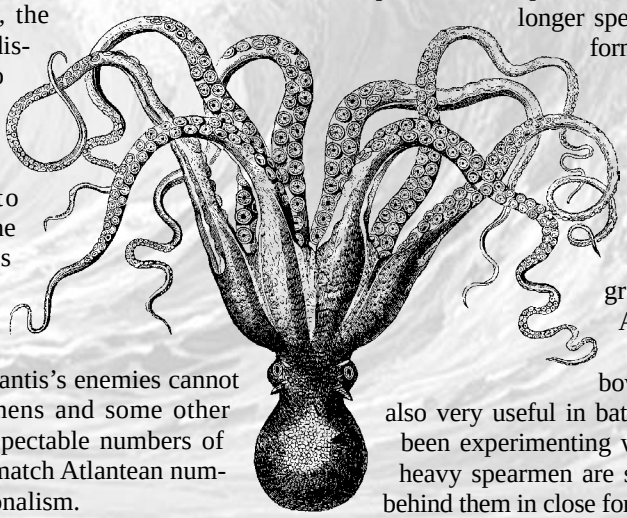
The bandit-kings resent all this bitterly, call it "invasion" or "tyranny," and respond with more violence. They are few and backward, but their anger at being denied their loot is unrelenting. And, worryingly, it even seems that the sacrifice-addicted war-loving gods of Olympus really may be on their side . . .

This approach would lead to campaigns pitching Atlantean "peace-keepers" against bandits, slavers, warlords, and dark and shadowy versions of the cults of the Olympian gods. Of course, there are two sides even to this story; some Atlanteans might wonder if they have ended up trying to force their own ways on the rest of the world. For a compromise version, the Atlanteans could be played as modern-style imperialists, self-righteous and narrow-minded, but not at all consciously evil.

Atlantean Armed Forces

Atlantis is a great military power, with a citizen-army on what would today be called the Ancient Greek pattern. Given the population's enthusiasm for conquest and tradition of unity, the rulers have little trouble mustering large and willing forces for their military adventures. The Atlantean navy is more of a professional, full-time organization, as a matter of practical necessity.

Despite its part-time nature, the Atlantean army is fairly well-disciplined and efficient, thanks to frequent drills which serve to focus the troops' enthusiasm. Actual numbers vary with the season, the time available to muster the citizen militia, and the perceived urgency, but reports that the capital alone can field 10,000 chariots and 10 times that number of footmen are not necessarily exaggerated. Atlantis's enemies cannot match this force, although Athens and some other regions of Greece can field respectable numbers of good troops; Egypt can almost match Atlantean numbers, but not Atlantean professionalism.



Infantry

The vast majority of Atlantean troops are heavy spearmen, mostly wearing bronze armor (iron or orichalcum alloy are restricted to the wealthy). However, Atlantean spears are rarely longer than 5' or 6', and the troops therefore only tend to operate four deep. In the coming war, Greek expertise with longer spears in highly disciplined deeper formations will prove crucial.

A few younger sons and poorer citizens fight in light or no armor with javelins or darts. These troops are tactically quite important, as they act to screen the flanks of the heavy troops and scout on rough ground. The mountain regions of Atlantis produce some good archers (who use composite bows) and a few slingers, who are also very useful in battle. The prince of Mestoron has been experimenting with mixed formations in which heavy spearmen are supported by archers who stand behind them in close formation and fire over their heads.

Chariots

The old aristocracy of Atlantis has a proud tradition of chariot warfare. These are light, two-man vehicles; traditionally, the crews consist of brothers or other close relatives, a younger driver and an older warrior. (This pattern is claimed to derive from the first days of the foundation of the empire, when each of the five pairs of twin sons of Poseidon rode forth together.) This usually makes the crews intensely loyal and very good at teamwork, at the cost that each consists of two near-equals, rather than a commander and an inferior. When a driver and warrior disagree, let alone squabble, the results can be catastrophic.

The usual weapons for the warrior are a quiver of darts or javelins mounted on the side of the chariot, and a long spear with a colorful pennant attached below the head; both he and the driver also carry short-swords. The chariots usually begin a battle with a series of fast, flamboyant runs past enemy lines, throwing showers of missiles, then withdraw behind the infantry until they can end the business with a terrifying charge. If forced to stand and fight, the spear is used to keep opponents at a distance. The aristocracy goes into battle quite well armored, although not so heavily that the warrior cannot throw javelins or the driver handle the reins. They are also important for scouting, although wise commanders assign this duty to level-headed crews rather than rash glory-hounds who may charge the enemy when they should be reporting back.

Elephant Forces

With its famous population of wild elephants, Atlantis has the basis for a potent striking force. The only snag is that these are of a relatively small "African forest" species, possibly also later used by Hannibal (but extinct by the 20th century). They can be tamed, but are not as useful as the Indian type that will be preferred in warfare in later eras. Also, elephants are notoriously tricky to manage in dangerous situations. (Being quite intelligent and given to self-preservation, they are easy for a clever enemy to panic.) For these reasons, the Atlantean elephant corps consists of only a few dozen beasts.

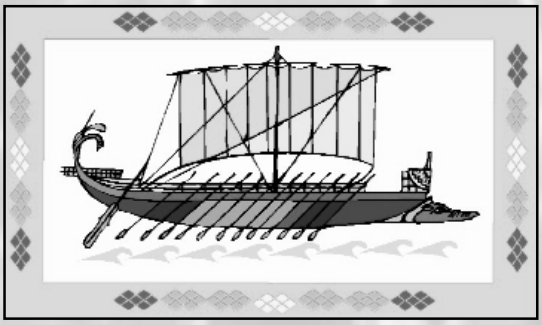
The typical Atlantean war-elephant has ST 250, DX 12, IQ 6, HT 17/40, PD 3, DR 4, and Move 8. It is fitted with padded fabric over the body (giving +2 DR and leaving PD at 3), and an orichalcum-bronze alloy headpiece (giving +4 DR and raising PD to 4, but leaving the trunk and eyes unprotected). The Atlanteans have not invented the howdah; crews sit atop their beasts, hanging on to ropes fixed around the body. In battle, each elephant carries a driver and two well-armed warriors (usually minor aristocrats), one armed with javelins and a long spear, the other with a composite bow. Their main function in battle is as a surprise weapon, and to terrify and break recalcitrant enemy formations.

Atlantean Galley

This type of military galley is a common sight in the harbor of the Atlantean capital. It is built at TL2 with several TL3 features and little expense spared, and is the terror of the seas in its world. It bears only a slight resemblance to the warships of later Greek history; Plato's reference to "triremes" is deceptive.

It actually uses its sails as its main means of propulsion, with 20 oars as a backup option for sea battles and calm days. In addition to the 20 men on the oars, it has a captain, two officers, a steersman, 24 sailors and 15 "auxiliaries" – enough supernumerary crew to row in shifts, giving it considerable flexibility. Alternatively, the auxiliaries may be marines, who can fight in boarding actions or coastal landings. It is armed with a ram and a stone-throwing engine, which will hurl pots of Greek fire if the GM decides that Atlantis has that secret.

The ship has a luxury cabin for the captain in the forward superstructure, a shared cabin for two officers in the aft superstructure, and 60 bunks for the crew in the hull.



Subassemblies: Hull +6, Forward Superstructure [T:Hull] +1, Aft Superstructure [T:Hull] +2, Foremast [T:Hull] -2, Mainmast [T:Hull] -2, Open Mount [T:Hull].

Power & Propulsion: 20 oars; 320 sf of sail in a fore-and-aft rig.

Occupancy: See above. *Cargo:* 500 cf

Armor	**F**	**RL**	**B**	**T**	**U**
Hu:	3/25	3/25	3/25	3/25	3/25

Armor is expensive wood. Superstructures and masts are unarmored.

Weaponry

Ram (Damage 5d×45+225 cr at 5 mph) [F:Hull].

TL3 ST 100 torsion-powered stone thrower (1/2D 240, Max 300, Damage 13d, Acc 2, SS 30, RoF 1/50) [T:Hull].

Equipment

Hull: 2 TL2 bilge pumps [Hull]; TL3 precision navigation instruments [AftS].

Statistics

Dim: 10'×10'×80' *Payload:* 11.3 tons *Lwt:* 82.3 tons
Volume: 10,356 cf *SizeMod:* +5 *Price:* $1.6 million

HT: 12 *HP:* 9,000 [Hull] 112 [ForS] 1200 [AftS]
36 [ForeM] 36 [MainM] 150 [OpMnt]

wSpeed: 9 *wAccel:* 0.1 *wDecel:* 0.13 *wMR:* 0.02 *wSR:* 1
wSpeed: 5 *wAccel:* 0.01 *wDecel:* 0.13 *wMR:* 0.02 *wSR:* 1
First performance line is sailing; second is rowing.
Masts are 20' tall. Draft is 4.9'.

Atlantean Characters

Atlanteans in this setting are normal humans; the general guidelines in ***GURPS Greece*** provide a good start for GMs or players defining them in ***GURPS*** terms. See pp. 85-87 for guidelines regarding magic-using characters in this setting. Literacy is virtually universal, and if the GM is emphasizing Atlantis's technological advantage over its neighbors, Atlanteans may have a level of High Technology (p. CI26) in games set primarily in the rest of the world. Atlantean citizens are often brought up to be Congenial; because of the prevailing sense of cultural superiority, Intolerance is fairly common, but not universal. In the old days, Alcoholism and Gluttony were disdained, but decadence is making them widespread, along with Bully, Compulsive Carousing, and Laziness. Atlanteans have access to few addictive substances aside from alcohol.

Common weapon skills are Shield, Shortsword, Spear, and Spear Throwing; Bow and Sling are also quite widespread. Wrestling (or rather, strictly speaking, Wrestling Sport) is known; Brawling is mostly left to the most disreputable of the lower classes. Aristocrats also usually have training in chariot warfare (Teamster). The emperor and princes are required to learn Knife, Lasso, Sacrifice, Staff, Theology, and ideally Animal Handling for use in their royal ceremonies. Atlantis has its own language, and only those with specific reasons usually bother learning "outlander" tongues.

The Emperor is Status 7; the nine princes are Status 6; other senior members of the royal family are Status 5, while their lesser cousins and members of the aristocracy are Status 3-4. Wealthy merchants, sea captains, soldiers risen through skill to trusted posts, and minor landowners are Status 1, with the most senior of them reaching Status 2. The vast mass of the population is Status 0. Negative Status is reserved for gutter scum and slaves; given the habitual orderliness and chauvinism of Atlantean society, such people often *also* have some kind of Social Stigma.

Women have a remarkable degree of freedom in Atlantean society, although most are expected to stay at home, providing their brothers and husbands with intelligent conversation and the state with well-brought-up citizens. Tales of women disguising themselves as men or otherwise putting themselves in the way of adventure are met with amused respect rather than disdain, and some temples (though not that of Poseidon) have numerous priestesses. Still, the society is essentially patriarchal, and only men can inherit landholdings or titles.

Atlantean Magic

This version of Atlantis uses magic. Obviously, details of the type and power level may be dictated by the general campaign setup, but this section suggests a "default" approach.

GURPS Greece suggests that magic should be relatively rare, and specifically that Magery should be restricted to descendants of the gods (see pp. GR72-73). The royal house of Atlantis is descended from Poseidon, which suggests that magic may be a key to their supremacy. The rituals in which they regularly engage may even have a magical aspect, reinforcing their shared, divinely derived power. A member of the royal house in whom the divine blood runs strong enough to grant Magical Aptitude must take the 25-point Unusual Background: (Divine Birth) (see p. GR73). Not all Atlantean royalty, or even emperors, have had such powers, but most have.

The Royal Magic

Because any such royal powers derive closely from the possessor's relationship to Poseidon, it will usually take the form of some specific types of spells. See pp. GR92-93 for general guidelines regarding the types generally appropriate for Greek-style games. In this case, Poseidon, a rather primal and direct deity, has given the family part of his authority over earthquakes, oceans, and monsters; these are acquired through heredity followed by practice and the teaching of family "secret lore" rather than by academic study. Spells from the Earth and Water Elemental colleges are the most appropriate, along with some Making and Breaking college effects such as Shatter. If the GM has access to ***GURPS Magic,*** add some of the summoning and controlling spells from the Animal college. Family members with Magery who somehow learn spells from other colleges may well have negative Reputations among their relatives as eccentrics and possible turncoats.

Other Powers

Other magic-workers on the island fit in one of a limited range of types:

Mantis or Oracle: Much as elsewhere in the world, the Olympians sometimes grant mortal Atlanteans prophetic powers. As suggested in ***GURPS Greece*** (pp. GR72, 92), this usually takes the form of the Blessed advantage (p. B233 or p. CI34) and a Divination spell, but in some cases, humans have acquired the Oracle advantage (p. CI42); Atlantis is a magical land, where signs and portents abound, great destinies are being worked out, and some of the gods are *trying* to warn mortals of future dangers. (Actually, anyone with Oracle is likely to spend a lot of time trying to warn everyone around them of some kind of looming terror.) The Temple of Poseidon is jealous and suspicious of any oracle or mantis whom it does not control, and may even represent an Enemy. (A mantis who *does* join the temple hierarchy will have Clerical Investment and a large Duty, and will probably suffer close and manipulative attentions from higher-ranking priests.)

Royal By-Blows: The habits of the Olympian gods tend to show up in their descendants, along with their supernatural powers, and those habits include sexual promiscuity. Unacknowledged offspring of Atlantean royalty (with the Divine Birth Unusual Background) occasionally manifest supernatural powers, although their lack of training and incomprehension of these powers mostly means that they either fail to realize their potential, or get themselves killed rather quickly. The exceptions make for some dramatic stories.

Divine By-Blows: The gods themselves sometimes visit Atlantis, and the males sometimes have their eyes caught by attractive mortal women, leading to yet more mortals of Divine Birth. Again, most of these offspring tend not to realize their full supernatural potential, but those few who do (perhaps with the aid of their fathers, who would qualify as infrequent but powerful Patrons) may achieve heroic status.

Nymphs: The wild places of Atlantis have occasional local minor deities, who might, with GM permission, appear as characters. See ***GURPS Greece,*** pp. GR103-104, for information on such beings.

"Authorized" Visitors: Allies (likely to be strictly temporary), heroic demigod-kings come visiting, and other magic-wielders may occasionally visit Atlantis with the knowledge of the local kings. These folk will be watched, politely but closely.

Intruders and Captives: Last, there are heroic interlopers, and perhaps the odd slave of divine descent or otherwise supernatural nature who has kept a magical talent secret from his captors. As Atlantis's conflict with the rest of the world grows more intense, there are likely to be an increasing numbers of such characters.

The Destined Disaster

Although this picture of Atlantis is based on the height of its power, the other thing that every player will know about the place is that it's Doomed. This is actually an important aspect of the myth; Atlantis is a symbol of hubris and nemesis, power brought down by the implacable forces of nature or the gods.

Using the Disaster

GMs can approach this part of the Atlantis myth in various ways. First, they can simply push the doom into the indeterminate future. Even if the game is set during the Wars of Conquest, the disaster may be a ways off yet, but more to the point, Atlantis has centuries of history to work with before the climactic disaster. There is plenty of scope for intrigue, espionage, hidden struggles, open warfare, decadence, and romance.

Second, GMs can deliberately deny the disaster, turning the game into an alternate-mythology campaign. Either Atlantis is never destroyed, or, as Zeus seems originally to have intended, it suffers only partial destruction, and is thus forced to abandon its decadence and settle down to some virtuous hard work of rebuilding. Of course, some Atlanteans, unable to take a divine hint, will be trying to rebuild straight back into a campaign of world conquest. For that matter, some will probably try to exploit the aftereffects of the disaster, making grabs for local or imperial power, will use all the wrong powers in their rebuilding program, pursuing dark magic, or will somehow blame any foreigners in the vicinity for their misfortune. ("If we had never had any dealings with them, the gods would not have been angry with us! And if they hadn't invaded us, we could have lived with a few earthquakes!")

Or, third, GMs can work with the inevitability of disaster, building the campaign on images of doom and destiny.

Games Set in the Final Days

This sort of game will usually tend to the gothic-decadent, with a touch of romanticism. Players who enjoy going overboard on the roleplaying should be encouraged to involve their characters in doomed love affairs mirroring the doom of the society in which they take place, preferably across the social classes and perhaps spanning both sides in the war. More heroic types should find themselves in vast struggles against the inevitable (which is not automatically pessimistic on a personal level; salvaging something from the mess is a noble and not impossible goal), while PC or NPC seers and priests should miss no opportunity to try and convince everyone else of what the players know already; bad things are coming.

Of course, the PCs may well all be enemies of Atlantis. The snag here is that they may get caught up in the catastrophe. Winning the war and then getting killed anyway is not satisfying by most standards. However, they too may receive warnings from divine sources; somehow getting out at the last minute, amid earthquake and inundation, could be an accomplishment in itself (think of a grossly inflated version of the last part of *Titanic*). Watching the cursed land of Atlantis meet its doom could almost compensate for the loss of a few thousand comrades. (Actually, the forces involved in the sinking of a large island make such survival rather unlikely, realistically speaking, but this is cinematic adventure.) Also, players who are willing to take a detached view may enjoy a race between their attempts to finish the war and the inevitable disaster.

The Volcanoes

This island has a fair number of volcanic mountains, some of them probably active, and many of them prone to emitting threatening curls of smoke.

These are, in fact, mostly here as an in-joke for the benefit of alert players, but they can play some active part in plots. One might be used as a smithy by the god Hephaestus (p. GR84), or serve as an entrance to some magical realm of fire. A relatively minor eruption could disrupt the life of a principality, obliging the local prince to find new homes for displaced villagers, a lava-flow might block a bay, or a new eruption might create a new island. And, of course, the slopes of an awakening volcano are a fine setting for desperate battles.

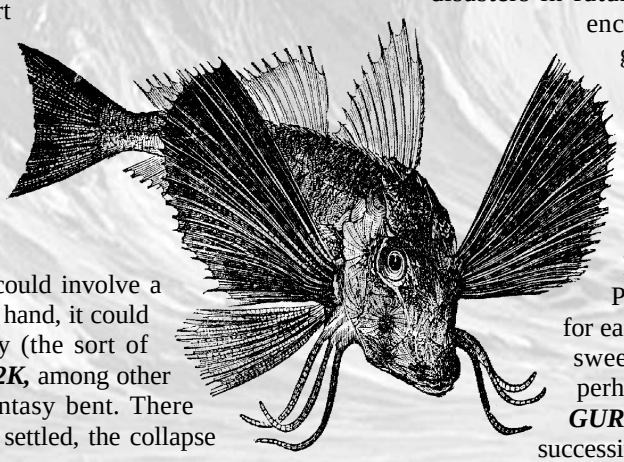
And when Zeus does finally decide to destroy this decadent land, or deranged magical experiments among the more twisted members of the royal house unleash uncontrollable forces, or an implausibly large natural disaster ends the whole campaign, the volcanoes get the job, first of presaging the impending doom (by rumbling, shaking, and emitting enough smoke to make the entire island gloomy), then of terminating the whole sorry business in a series of spectacular but essentially neat detonations, sinking the island without killing too many fleeing refugees whom Zeus (i.e., the GM) wants to keep alive, and without plunging the entire planet into a terminal ice age.

Incidentally, pedants may comment that Plato didn't mention volcanoes. The obvious reply to this is that Plato didn't necessarily know everything, or mention all that he knew. Volcanoes are traditional these days.

GURPS Y-negative-9-K?

Some GMs may actually choose to *incorporate* the final catastrophe into their campaigns. Whether or not they should warn their players that this is going to happen (implicitly or explicitly), is a matter of judgment; some groups would be amused, others would complain that it changed the game into something they didn't sign up for.

Because, even if all the PCs ride the shockwave clear of the blast, sinking a large part of the campaign setting and a few million NPCs *is* a big change. The war is over, the world-conquerors are all drowned (along with a few thousand of their best and brightest enemies); what now?



A post-catastrophe game could involve a variety of moods. On the one hand, it could be played as grim and gritty (the sort of game discussed in ***GURPS Y2K,*** among other sourcebooks), but with a fantasy bent. There will be bandits, scores being settled, the collapse of central authorities, and nihilistic cults. There will surely be Atlantean outposts and forces in other lands, as well as coastal regions suffering from tidal waves and the like. Furthermore, Atlantis's enemies have just been through a great war, and have a lot of rebuilding of their own to deal with.

Thus, like any post-catastrophe game, this one doesn't have to be entirely grim and depressing. Rebuilding and reorganization can make for interesting adventures. Refugee Atlanteans can look to make new friends (even if the rest of the world mostly thinks of them as megalomaniac would-be conquerors, and now also accursed of the gods). For intense comic-book resonance, the son of some wise Atlantean leader might be washed up in a cradle on some distant coast, and grow up to develop the powers of a demigod.

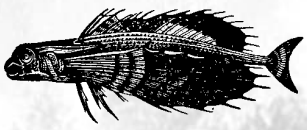
Meanwhile, the former alliance, its reason for existence suddenly vanished (along with many of its best warriors), may either survive, dedicated to rebuilding, or break apart under the stresses of the new order. Diplomats may prove as important as warriors. And a new world *will* arise from the ruins; that's as predetermined as the disaster. The PCs are in with a chance to shape something big. Players who've read Plato closely will suffer the depressing realization that there'll be more disasters in future millennia, but that might just encourage them to try and make the good things robust. They might even consider trying to leave messages of warning to future generations – say, carved into pillars in Egypt?

Last, there's the possibility of a generation-spanning game, perhaps involving immortal demigod PCs, perhaps with new characters for each stage. The players can watch the sweep of history across the centuries, perhaps playing, say, ***GURPS Conan, GURPS Ice Age,*** and ***GURPS Greece*** in successive chapters.

Zeus's Error?

In Plato's incomplete story, Zeus is said to have wanted to punish the Atlanteans "that they might be chastened and improve" – which implies that there should have been survivors. Dead mortals do not improve. And yet, the actual disaster annihilated the island, along with an army from the virtuous city of Athens, which was not apparently slated for chastisement. It sounds almost as though the punishment got out of hand, or the gods made a *mistake.* Admittedly, the Greek gods could be fallible and prone to excess, but this would seem a rather extreme case, and Zeus, of all of them, is usually depicted as highly competent. Moreover, the *type* of disaster – earthquakes and floods – is very much the domain of Poseidon, the patron of Atlantis. If Zeus assigned the task of punishing the island to him, he might have been expected to hold back, not to exceed his mission. (Unless, of course, he didn't actually destroy the Atlanteans, but sank their land and transformed them – and the Athenian army? – into sea-dwellers.)

It could be an amusing parlor-game to construct explanations for this. Certainly, Poseidon might have chosen to destroy the Athenian army (who were conquering his descendants) along with the Atlanteans he was supposed to chastise, but that doesn't explain the total obliteration. Perhaps, between Zeus calling his conference and the end of the story, both the Atlanteans and the Athenians displayed ever-greater hubris, ignoring omens and warnings, until all the gods became angry enough to want them comprehensively punished. Certainly, Poseidon, a god of earthquakes and monsters, was never averse to massive destruction when he was angry. Perhaps blasphemy or forbidden magic arose in the course of the war (raising the dead, say, would offend Hades, the third ancient power with Zeus and Poseidon). Perhaps each side forgot most of the gods while demanding ever-greater aid from their specific patrons, leaving the entire pantheon testy and irate.



Or perhaps some other force became involved, worsening the physical situation in ways unanticipated even by Zeus, and transforming a warning into a mass death sentence. Greek myth has few beings capable of such things, but the titans whom the oldest gods once defeated might qualify. In a high-power campaign, PCs might become aware of terrible maneuverings among the gods; in a truly mythic-level game, they might become directly involved.

Crossovers and Variations

One chapter is only enough to present a bare sketch of this land; GMs are welcome to make varied use of it, and to adjust the details. The size, population, technology, aggression and decadence can all be varied to suit a given campaign, and the state of the surrounding world is even more malleable. The setting can also be combined with those defined in other ***GURPS*** supplements.

Egypt: Those Who Salute Ra

Plato (supposedly) received his account of Atlantis via the Egyptian priesthood, who made it clear that their land, too, suffered Atlantean invasion – though it was the Athenians who ultimately defeated it. Therefore, there could just as easily be Egyptian-style as Greek-style PCs in a campaign that involves Atlantis, and the whole thing could even be given more of an Egyptian flavor.

If the Egyptian role is played up, the war becomes more of a clash of mighty empires, focusing on massed chariot battles, rather than a heroic guerrilla struggle against stronger invaders. This might seem to leave less scope for individual PC heroism, but even in such a war, there are always tasks for talented special agents, scholars, and diplomats.

China/Japan: Lords of the Sunrise

China and Japan have a few legends of "lands beyond the ocean" of their own, and it might be possible to insert this Atlantis into the Pacific in a variant-mythic Asian game. (GMs might wish to "invert the map" of Atlantis to keep the situation of the various principalities consistent.) The "flavor" of Atlantean society could be made more oriental, with a dragon-god replacing Poseidon and granting his mandate to the emperor, junks rather than galleys, and a code of honor based on shame and respect (corrupted into rampant hypocrisy and subservience) rather than guilt and honor; or Atlantis could be kept as written, providing an extreme contrast to the oriental cultures (who would of course consider it utterly barbaric).

If Atlantis invades a disorganized but warlike land along the lines of medieval Japan, the result will be a desperate heroic/guerilla struggle, much like the Japanese defense against the Mongol invasions (or Plato's hints about the war with Athens); if it encounters a unified, Chinese-style opponent, the struggle will be on a larger scale, with the raw strength of the mainland armies pitched against Atlantean courage and ingenuity.

Atlantis in Other Fantasy Games

This Atlantis could also be used in games set in other fantasy worlds. GMs will probably want to change the name – "Atlantis" has too many associations – and of course some other details will need adjustment. However, the basic idea – an arrogant, decadent island-empire, convinced that it is favored by the gods and determined to conquer the world – should always make for drama.

Of course, other campaigns may have different types and levels of magic. In a very high-magic world, the Atlanteans can only be a threat if they can match their intended conquests' sorcerous might; the emperor and each of the princes might be an arch-mage, and the Temple of Poseidon (however renamed) might muster a range of dark powers. Conversely, in low-magic games, Atlantis could lose most of its supernatural features.

It is up to the GM whether to incorporate an eventual sinking into a game or not. It certainly makes for a strong plot-theme, but the explanation, side effects (including devastation of adjacent coastlines by tidal waves), and other consequences are likely to change the game rather extensively.

A Magical Transfer

For a wild variation, the island found on a fantasy world could be *Plato's* Atlantis. Instead of sinking or blowing up, it was magically relocated, as the result, perhaps of divine politics on Olympus, perhaps of wild and desperate magics cast during the war. Of course, the Atlanteans would be shocked by the change, but once they settled down, their old impulse to conquest would reappear.

By Plato's account, an Athenian army would also be brought along. The Athenians could either complete the conquest of Atlantis and then deal with the new situation, or, confused and cut off from their homeland, they might be defeated; any survivors would then become refugees or mercenaries, probably once more helping the fight against Atlantean aggression.

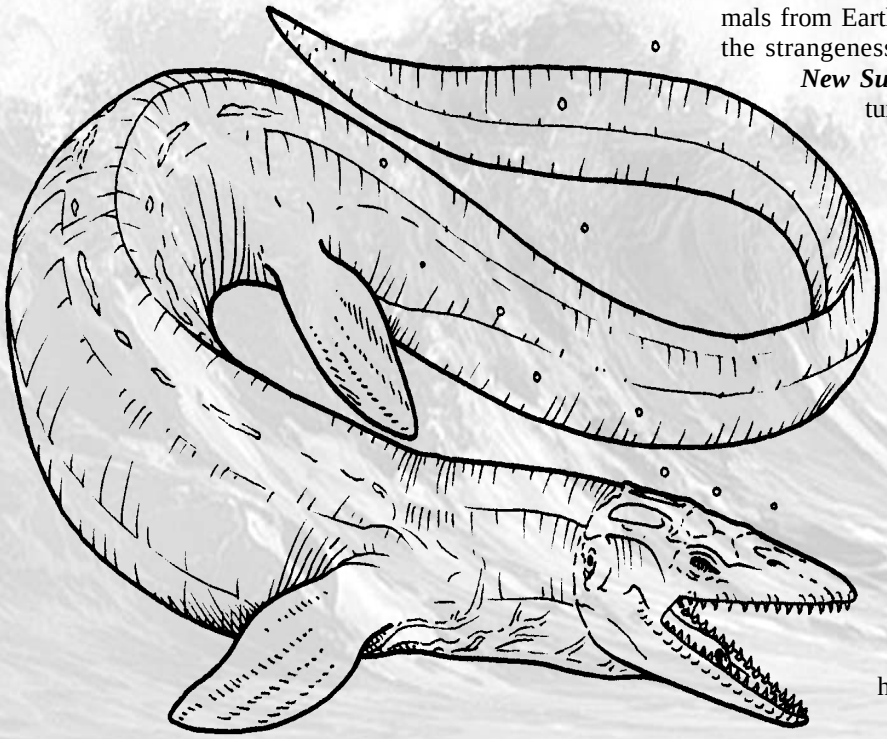
Atlantis *could* be placed on Yrth, the world depicted in ***GURPS Fantasy.*** However, this would require careful explanation, whether it has been there all along or it suddenly appears in the course of a campaign. It might be brought in by a *spectacular* Banestorm effect that transcends time as well as space, or it might come from another parallel Earth where the current date is in prehistory. A sunken Atlantis could also serve as the model for an underwater Sea Elf city.

Atlantean Wildlife

Atlantis is mostly a civilized, fairly heavily populated land, so there is relatively little large wildlife. On the other hand, it is famous for its herds of elephants in wilder regions; no heroic aristocracy could ever be happy without some wild boars to hunt; and it is a big island, with its share of mountains. The elephants are the African type (see p. 81 and p. BE13); the other species that may present a serious danger to adventurers are wild boar (p. BE37), wolves (p. BE38), and a few lions (p. BE20).

For optional added interest, GMs can relax the realism a little more and throw in a few areas still infested with truly formidable fauna. After all, this land *was* created by Poseidon, who was also notoriously prone to the creation of monsters. The beasts in question can be drawn from Chapter 6 of ***GURPS Greece,*** or the GM can go further afield, perhaps import the odd surprise from the ***GURPS Fantasy Bestiary.*** Alternatively, the slightly pulpy feel of the setting might provide an excuse for drawing nonmagical but very formidable monsters from ***GURPS Dinosaurs*** – either some of the great reptiles themselves, or some of the slightly later mammals and giant birds from the Paleocene and Pliocene. Tyrannosaurs or ankylosaurs might just be *too* strange and overwhelming, but smilodons and megatheriums would surely be fit challenges for classical heroes.

For another example of a fantastical world where animals from Earth's past roam free and add considerably to the strangeness and interest of the setting, see ***GURPS New Sun,*** which has details of a number of creatures worth borrowing for Atlantis.



Domesticated Animals

The farmers of Atlantis tend much the same creatures as those of Heroic-era Greece; sheep in the hills, goats in the mountains, and some cattle in the lowlands. They do have a slightly greater variety of domestic fowl, including a few turkeys thanks to intermittent contact with the Americas.

Atlantean horses are good quality (this is another of Poseidon's areas of influence), but they are small by modern standards – basically ponies. As a result, wealthy Atlanteans much prefer to travel and go to war in chariots rather than on horseback.

CHAPTER FIVE

THE HEIRS OF MINOS

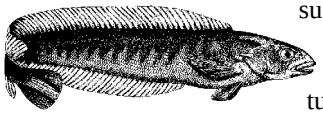
"The truth is that the State in which the rulers are most reluctant to govern is always the best and most quietly governed, and the State in which they are most eager, the worst."
– Plato, ***The Republic***

This chapter provides a campaign element – or the main theme – for modern-day (or historical) Illuminated/conspiracy games. It is based on the idea that the Santorini Hypothesis (pp. 19-23) is broadly correct, but the *full* truth about Minoan civilization has been kept carefully secret. It also assumes that psionics work, and that the ***GURPS Psionics*** rules depict them accurately. The conspiracy described here is deep and secretive, perhaps lying *beneath* other levels of intrigue. It should be very difficult to identify, let alone expose, and hence will usually only come into play slowly over the length of a campaign.

Minoan Crete was small in area, and it did not expand through conquest; yet it was the greatest of all the civilizations of the Bronze Age. For the Minoans alone discovered the secret of unlocking all the powers of the human mind and body. They considered extending their rule beyond the sea, but were happy to move slowly and carefully, protecting their interests through agents and subtle manipulations in the meantime. This habit is one that they have never lost.

Quite how humanity acquired such mastery of the self on Crete alone is a mystery. Certainly, it helped that Crete was a unified island, reasonably fertile and comfortable, with no neighbors threatening conquest; peace and security gave the Cretans the luxury to pursue interests beyond warfare and survival. Probably it was sheer happenstance that the Cretan priesthood happened to promote athletic activities, meditation, and self-discipline as forms of worship. And perhaps a few lucky and talented individuals just happened to be in the same place at the same time.

The Adept Meritocracy



What evolved from the early Minoan theocracy – a land of priest-kings and peasants – was a meritocracy wherein status was achieved through mastery of mental and physical disciplines. The Minoans were experts in both athletic disciplines and what are today referred to as psionic powers. They were proud of their powers, of course, and frankly regarded less talented members of their own society, let alone members of less disciplined neighboring civilizations, as lesser beings; however, telepathic rulers could never become entirely solipsistic. The Minoans saw themselves as the natural, benevolent leaders of humanity, but they were in no hurry to prove this; after all, a hasty conquest might cost (Minoan) lives and make the work of raising their subjects to new levels much harder.

Thus, Crete presented itself to other cultures as a peaceful, friendly trade empire, able to defend itself but not looking to expand, and not possessing any strange arts or sinister plans. Minoan ambassadors and envoys were powerful telepaths, who carefully studied and sometimes manipulated the outlander kings and lords. Not that the Minoans wanted to ignore their neighbors; they were perhaps the first culture in history to regard healthy curiosity as a virtue, and they fully understood the benefits of trade. One of the few mechanical skills that they really respected was ship-building, and they saw seamanship as a valid discipline, combining physical skill with keen alertness.

However, for all their powers, the Minoans were unsophisticated in their understanding of the physical world. They considered themselves above and beyond such things; they had long since concluded that the gods worshipped by other peoples were mostly fantasy, irrelevant to the Minoan adepts, whose concern was to perfect themselves, not to worry about the world at large. Thus, they had little understanding of, say, the volcanic island on which they planted one of their outposts. Meanwhile, Precognition was the one psionic power which they had not developed much, partly because its inherent uncertainty offended their disciplined philosophy, and partly because anyone who did probe very far ahead kept reporting a terrible dread and emptiness, which they dismissed as too horrific to be a true vision.

With hindsight, one may call both these attitudes mistakes.

The Fall of Crete

Actually, when Santorini exploded, the devastation on Crete was not very great. However, the colony on Santorini itself had been a major node on a growing telepathic communications network, and several important psychic adepts were either located there, or were in coastal areas of northern Crete when the *tsunamis* hit. Furthermore, many of the greatest adepts were in more or less permanent telepathic communion at this time; when several of them died suddenly, the death-traumas sent many more into comas or psychosis.

In other words, Minoan society was virtually beheaded at the same time that its territory and economy were devastated. Crops from ash-laden fields and orchards failed for several years, leaving the people starving. Bonds between cities, always loose, disintegrated entirely. Surviving adepts were relegated to the role of priests, with little real power. There was no actual warfare between Minoan communities, but a great deal of suspicion and certain amount of banditry. Cretan culture took centuries to recover.

The Minoan Diaspora

When disaster struck, many Minoan lords and citizens fled in all directions across the Mediterranean. Thousands died, but thousands more survived, their maritime skills and superbly built ships surviving storms, vast waves, and seas full of pumice. As Crete declined, more followed.

Some moved to the Greek mainland, the most familiar foreign land. However, whereas Crete had been a land of elegant palaces and well-organized towns, the Mycenaean mainland was barely moving beyond barbarism. Still, these chieftains had enough awe of the old power to want to hire Minoan artists and architects, whose style soon became a familiar feature of new palaces and tombs.

Others sailed eastward, and settled on the coastal regions of southern Palestine. These founded a new nation; the Philistines. Centuries later, the Jewish prophet Amos would preserve a memory of the disaster and the migration:

And the Lord God of hosts is he that toucheth the land, and it shall melt, and all that dwell therein shall mourn: and it shall rise up wholly like a flood; and shall be drowned, as by the flood of Egypt . . . Have not I brought up Israel out of the land of Egypt? and the Philistines from Caphtor, and the Syrians from Kir?

The Labyrinth

One major image in Greek legends of Minoan Crete is the labyrinth, the vast and intricate maze in which the monstrous Minotaur was held, from which a human victim could only escape by following a trail of thread laid from the entrance. When archaeologists discovered the Minoan palaces, they found that these were not only large but had complex floor plans. Some suggested that the legend arose when Mycenaean visitors, from a land of bare huts and much smaller palaces, saw these and then told tales of them as a mazelike place where visitors could easily become lost.

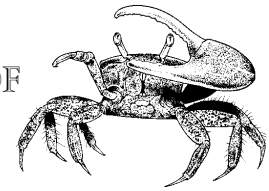
Modern scholars assume that the complexity of the Minoan palaces arose because their builders had a need for a growing number of storerooms and suchlike, and, lacking the technology to construct large enclosed spaces, built lots of small ones instead on a rather *ad hoc* basis. The Greek legend would then be an exaggeration, a "tall tale." The Minoan Conspiracy, however, knows that the truth is a little more subtle.

To preserve and develop their psionic powers, the Minoans need mental discipline and exotic training methods. From their earliest days on Crete, mazes were part of that. To learn a maze thoroughly was useful training in itself; when it was properly designed, the process could even stimulate latent psionic faculties. Even mundane buildings were made like mazes, to reinforce the effect. An adept who learned a great maze could also use it as a "memory palace," a mnemonic aid, placing anything that needed safe memorization somewhere in its many memorized rooms. (This trick was later recovered by Roman teachers of rhetoric and Renaissance philosophers, perhaps under Minoan influence.)

Today, the labyrinth is mostly an ancient symbol for the conspiracy; they have other training aids, and cannot shape all the architecture in the world. But some of their secret bases do hold labyrinths, which may thoroughly confuse intruders, and some psionic adepts use them as a concentration aid and a way to *learn* Eidetic Memory.

(The battles between the Israelites and the Conspiracy-dominated Philistines, still seeking to recreate their ancient land of "Caphtor," is of course a major theme of the Old Testament.)

Others again sailed to settle elsewhere: Italy, Sicily, Rhodes. Some sought sanctuary in the other complex urban culture of Egypt, but found their new life as hard as that of those founding new cities. At least the exiles who were breaking new ground could choose to live their own way; those who settled in Egypt had either to try and create communities in the midst of foreigners with very different gods and attitudes, or to live as Egyptians, abandoning their own culture.



The Aftermath of the Diaspora

The Desert Secret

The spread of Minoan exiles across the Mediterranean was a complex event, with many aspects. One small group sailed as far as what is now Tunisia, and settled an oasis in the desert there. Although they were too few, with too limited local resources, to become much of a power by themselves, they represented a secret resource for the Conspiracy, a base and retreat, whose role was almost always completely unsuspected by those who knew of them at all. In Classical Greek times, they were known as a tribe named the Atlantes, who supposedly took their name from a mountain called Atlantis which they regarded as a pillar of the sky. In the Middle Ages, the "Atlantes" hid themselves ever deeper, concealing themselves entirely from factual accounts. However, they were not entirely forgotten; Arab legends spoke of the "City of Brass," deep in the deserts of North Africa, which was variously described as the home of terribly powerful djinn, or as the location of an ancient culture that fell into decline and was accursed by Heaven.

They are, of course, still there, now concealed even from spy satellites and high-tech explorers.

The Decay of Crete

Later, as those badly weakened survivors who had remained on Crete started to rebuild, they faced a new catastrophe; the unguarded island fell to raiders from the Greek mainland. Knossos itself, which had largely survived the natural catastrophe, was conquered by a Greek-speaking dynasty. Meanwhile, thanks to the pattern of winds following the eruption, much of the population was forced to move westward in search of agricultural land that was not completely choked with volcanic ash. Although some of the rebuilding was successful, the island culture itself never entirely recovered. By Homer's time, it was a backwater on the edge of the Greek cultural sphere, a place of small, sleepy cities and poor harbors. By Plato's, it was a minor land indeed, mostly noted as the homeland of a race of pirates and talented but treacherous mercenary archers.

By then, however, the Minoans had moved on.

The Akhenaten Incident

The Minoan exiles who had settled in Egypt became important as agents of influence in that culture. As they worked to shape Egypt to their needs, they decided that the single greatest obstruction was the static, ritualistic Egyptian religion. Their response was the Conspiracy's first radical program of social manipulation, and its first great failure, albeit one from which they learned much.

The Minotaur

If the Minoan Conspiracy has a "dark side," its name is *Minotaur.*

One image that Greek myth correctly associates with early Crete is that of the bull. Minoan culture used bull-dancing as the epitome of its physical training (see p. 106), and its rather abstract religion focused on this animal (along with snakes and other symbols). However, what even some Minoan leaders have never realized is that this imagery derived from an older, more superstitious, chthonic religious cult. Hints of this old bull-worship are a secret *within* the secret of the Minoan Conspiracy. They may be preserved by a doubly hidden group of Minoans, subtly encoded into some of the Crystalline Matrices, or even more subtly embedded in training systems and the "group unconscious," emerging sometimes when a Minoan comes under certain types of stress. Or they may just be a set of images that Minoans happen to use.

The Greek description of the Minotaur as a man-eating monster, born from the union of Minoan humanity with the great animals it revered (see p. GR27), reflects a psychological truth. Perhaps its earliest emergence was in the underground human sacrifice that archaeologists have now discovered took place in very late Minoan Crete (a discovery which the modern Minoans did not expect, and which they find very strange). Since then, branches of the conspiracy have sometimes employed enforcers whose habits have become increasingly brutal as they have adopted the bull as their badge, while a few subgroups have slipped into a demonic, superstitious sort of religion which has rapidly been suppressed by the majority – a religion of horned gods and bestial passions, which may be the origin of some "black magic" cults among mundanes. Ironically, "Minotaur" is also an occasional contemptuous Minoan term for members of the conspiracy who "go native" among the masses, polluting their "purity" with feeble sympathy and futile attempts at short-term assistance for those who are never ready or willing to be helped.

It may be significant that the Merovingian dynasty (pp. I57-58) is sometimes said to have been fathered by a "King Bull." The Bull-King who swims in the ocean is also a recurring theme in many ancient cultures, notably that of ancient Mesopotamia, where it was linked to the story of Oannes (p. 40). The Minoan leadership calls all this mere coincidence, however.

The oldest son of the pharaoh Amenophis III was so sickly and deformed that he was expected to die, and little effort was expended on his education. Hence, Minoan agents were able to gain considerable influence over him, and a Minoan psionic healer was able to keep him alive. Thus, everyone except the Minoans were surprised when he inherited power, becoming the pharaoh Akhenaten (see pp. WWi14-15). He was even persuaded to marry a Minoan agent, the princess Nefertiti, cementing Minoan control.

Then the Minoans began their attempt to destroy the old Egyptian temples, replacing them with a monotheistic sun-cult loosely based on other religions observed by Minoan agents elsewhere. However, the Minoan agents became so engrossed in this project that they neglected to monitor other factors in Egyptian society (a typical mistake among early Minoans, who were still thinking in terms of the old, unified Cretan society), and Akhenaten's nation was soon shattered by revolts and invasions, while the old priesthood schemed against him. Eventually, Nefertiti's control over Akhenaten began to slip, and a plague sent both court and country spinning into chaos. Akhenaten died young, and the Minoans withdrew to regroup and assess what had gone wrong.

Eventually, they came to the conclusion that brutal, violent non-Minoan societies could not be reshaped from the top down, and that they would have to work to manipulate populations as well as rulers in future. This was a hard lesson, and some Minoan agents have never quite grasped it, but their leadership did take note. The Minoans also largely gave up using monotheistic religion as a tool, especially as their Philistine branch had so much trouble with the Israelites; their policy on such matters became more cautious and complex as the centuries passed.

The Foundation of the Conspiracy

Although the lords of Minoan civilization had been battered and maimed, some survived, and gradually focused their trained willpower on a new goal; to recover their former greatness. But nature had taught them a lesson which they would not forget – not to put all their eggs in one basket. Crete was fallen, but Minoan power would be restored, not in one land but in many.

They were already accustomed to keeping the true extent of their abilities secret from the rest of humanity, and a few unpleasant incidents, when they tried to approach other people as benefactors with great powers, convinced them that they should preserve this habit. So they presented themselves as nomads and refugees. They could not replace the local leadership, so they sought to become advisers and, when deception was necessary, seers.

The Greek Program

Unfortunately, it soon became clear to them that most of the great nations of the era already had powerful scribal and priestly classes who were jealous of their positions. The new conspiracy was forced to work underground, taking a long-term view. Only in relatively barbaric lands, such as Mycenaean Greece, were there extensive opportunities to become the powers behind the thrones – and these were backward, fragmented, and violent lands. There too, the Minoans had to settle in for the long haul, because they would have to build the land up from almost nothing. Furthermore, the Greeks were not strong enough to survive barbarian invasions or famines intact. Attempts to promote unity among the petty kingdoms, such as the carefully engineered Trojan War, were never entirely successful. Several times, the whole system had to be knocked down.

Nonetheless, Greece remained the conspiracy's favorite center of operations for over a thousand years. When it was threatened by invasions from the east, the Minoans ensured its survival. Although they decided early on that they should maintain a monopoly on psionic powers, discouraging any investigation in that direction, they realized that more materialist areas of thought might have their uses, and promoted the golden age of Greek philosophy. It took them a long time to admit that the essential Greek lack of unity, which they had sometimes promoted as a way of ensuring dynamism, ultimately placed a limit on what they could accomplish.

Game Mechanics for the Crystalline Matrices

A stone which is to become a Crystalline Matrix must be a specific type of quartz, flawless, and at least one pound in weight. Identifying and preparing such a crystal requires a Mental/Hard psionic skill which requires 3 levels in each of ESP and Telepathy and 6 levels in Psychokinesis. A critical failure on the skill roll destroys the crystal. Imprinting one's own personality is a *different* psionic skill, requiring 3 levels in each of ESP and Psychokinesis and 10 levels in Telepathy. Alternatively, a telepath with the same skill and 15 levels in Telepathy can imprint another individual's personality onto a prepared crystal, provided that the other person is willing and has at least 1 level in Telepathy. Once someone's personality has been imprinted, that crystal can never be imprinted with anyone else's, although the first person can "update" it with new knowledge and experience as often as he likes. Again, any critical failures in skill use destroy the crystal.

"Reading" an imprinted crystal requires only a successful use of Telereceive skill. The reader can access the personality for a time in minutes equal to half the amount by which he made his skill roll (10 seconds if he made the roll exactly). In that time, he can determine what the imprinted personality would have thought on any subject, use any of its Mental skills at -3 (or only -1 if the roll was a critical success), and access its memories on specific subjects with an IQ roll, usually at -2, but with other bonuses or penalties if the subject was of special interest to the imprinted personality (GM's option). Each attempt to access deep memories requires 30 seconds. Normally, this procedure is safe for both the crystal and the reader, but every minute over 10 that an individual spends accessing the same personality in a 24-hour period, he must roll vs. Will, or Will -3 if any of the reading efforts achieved critical successes. On a failure, some of the imprinted personality seeps into his own, giving him -1 point's worth of behavioral changes – usually in the form of a quirk, but the effects can accumulate, especially if multiple rolls are missed in one session, building up full-scale Mental Disadvantages. In any case, the changes are determined by the GM, and can be quite strange.

The Crystalline Matrices

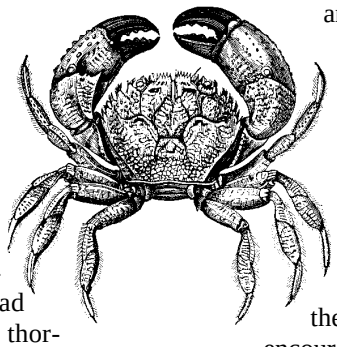
In the early days of the Minoan Conspiracy, the most important achievement of all was kept secret. Even before the disaster, the Minoans had discovered that certain mineral crystals would resonate with mental powers. Now, experimenting further, they discovered that some such crystals, carefully prepared using advanced telepathic and telekinetic disciplines, could hold the "imprint" of a powerful psionic adept's mind. Other telepaths of moderate power could then access the imprinted personality, applying its knowledge and experience to questions, and determining what the original user would have thought on any given subject.

This is not exactly immortality; the imprinted personality only "thinks" and gains access to knowledge of the outside world when "read" by another telepath, and can never initiate actions directly. (The Minoan leadership can come a great deal closer to true immortality through the psionic skill of Life Extension – see p. P15.) However, it *does* provide the conspiracy with continuity. The advantage, to them, is that the leadership know that something of themselves will, very literally, live after them, and members of the conspiracy can draw on the accumulated knowledge and experience of past leaders. The disadvantage is that the system tends to make the entire organization conservative and rather inflexible.

These "Crystalline Matrices" are always stored in the depths of the conspiracy's most secret bases. They are usually only read by members of a group of exceptionally well-trusted "caretakers," who actually tend to be mediocre telepaths with unexceptional willpower, but who are regarded with some awe by other Minoans. Needless to say, these people can be strange and crankish.

Expansion: East and West

Minoan influence expanded slowly but steadily along trade routes and with conquerors. They always concentrated on urban societies; having emerged from such a culture, they regarded tribal, rural peoples with a city-dweller's disdain. In the west, they had considerable hopes for Carthage – the Carthaginians had connections to the Philistines, and the Minoans thoroughly approved of the Carthaginian exploitation of seapower – but something in that culture seemed darkly resistant to Minoan rationalism, or to cooperation with the Minoans' other protégés in Greece. Eventually, the Minoans sadly concluded that they had let the Carthaginians become too aggressive and self-centered, and engineered their destruction by the new power of Rome.



Rome was, in fact, the next great Minoan project, a culture built on order and law that was supposed to absorb the best of the Greek accomplishments, especially in philosophy. It proved very successful for several centuries, with Minoan agents ensconced in the Senate and temples, but eventually it too fell. (The Minoans observed the new religion of Christianity with detachment, taking no strong position on its value.) The conspiracy was still trying to design a society that they could rule effectively from behind the scenes, that would be strong enough to withstand barbarian invasions and plagues but malleable enough to do what it was (subtly, telepathically) told.

Meanwhile, Minoan influence was much lighter in the east. Persia was always a minor problem, ruled by a string of dynasties who sometimes threatened the Minoan puppets in Greece or Rome; Alexander the Great represented one attempt to crush that for good and all, but like too many early rulers subject to too many telepathic suggestions, he became mentally unstable and died young, and Persia bounced back. India was full of annoying mystics whose meditative disciplines made them resistant to psionics, and the Minoans had to move carefully there; mostly, they left the subcontinent alone. A few Minoans thought that China had promise, as an orderly and usually well-run society, but it was just too alien for the more old-fashioned leaders. The conspiracy was already becoming very Eurocentric. Had they wanted to use China, they might have encouraged it to become more outward-looking, but instead, their small group of trusted agents in the bureaucracy actually worked to ensure the reverse, trying to keep it reasonably strong as a bulwark against barbarianism, but never letting it interfere with schemes elsewhere.

The Middle Ages and Renaissance

After the fall of Rome, the conspiracy spent several centuries reassessing its position. Many of its leaders strongly favored Islam, and even transformed some of the land-based, desert-dwelling Arabs into enthusiastic seagoing traders. Later, Muslim scholars were induced to keep the old Greek philosophy alive (the Minoans hate to drop a good idea, and they were quite attached to that old project), and Muslim empires were used to suppress dangers in India and on the Chinese borders. Groups in both areas who threatened Minoan power were demonized as "heathen cults"; most have been completely erased from the historical record.

The Mongol invasions were a shock; they were partly the result of a mutant gene in the family of Chinggis Khan which granted many of the Mongol leaders the power of uncontrolled Psi Static (p. B176). For a while, the conspiracy was running scared, but the Mongols had little idea what to do with their conquests, and the gene was soon mostly lost to their descendants, although it still occasionally resurfaces.

ATLANTIS IN THE ATLANTIC

GMs who prefer a more traditional approach, placing the lost Atlantis in the Atlantic, can fit the idea to this setup fairly easily. In that case, modern theories of continental drift and plate tectonics were quite likely deliberately created by the Minoans (who should be referred to as "Atlanteans," as they have no obvious connection with Minoan Crete) themselves, with the deliberate intention of clouding the truth. Likewise, the Santorini Hypothesis would serve their ends, by distracting both archaeologists and the milder sorts of cranks who might take an interest in Plato's story. This all makes the conspiracy rather more frighteningly powerful at the detail level; they are a force which can reshape an entire science, while keeping it functional and consistent, just to protect one secret.

Whether lost Atlantis actually sank 9,000 years before Plato, implying yet greater manipulation of historical knowledge, or whether it was a little more recent than that, is again up to the GM. Ultimately, this sort of change makes the setup both more cinematic and more paranoid; half of science is a lie, and the world is ruled by immortal mind-benders out of legend. Perhaps the conspiracy's manipulations have been more effective and precise than this chapter hints, and (almost) everything in human society is the shape it is because the conspirators planned it. That would make their ideals and objectives very strange and opaque, and could stretch the sanity of the most dedicated, cinematic, Illuminated investigators.

Minoans in GURPS Technomancer

For a rather wild mixture, the Minoan Conspiracy can even be dropped into the world of ***GURPS Technomancer.*** In that case, they should use spells rather than psionics (see p. 109, although in this case the Minoans will now have a very good range of spells in their libraries), and the ancient Minoan civilization should have been the last great magic-using culture on Earth prior to the Trinity Event. The Santorini eruption and the fall of the Minoan palaces were merely side effects of a greater catastrophe – the collapse of the High Mana zone on Crete which empowered that culture. Why this happened is up to the GM, but an unwise magical experiment, or a megalomaniac villainous plot, would seem appropriate. The Minoans had hoarded their power and knowledge – there were only a very few, half-trained mages in Egypt's temples and Babylon's palaces – so the effects on most of the world were limited, and ever since that date, the Minoans have guarded their secrets, and their few, small stores of mana, very carefully.

The Trinity Event was as much of a shock for them as for anyone else, although of course they understood it slightly better and much sooner. For a while, they even thought about going public, at least partially, and trading on their suddenly very useful knowledge, but they knew what their former puppets might do to them. Today, the Minoans remain the great secret background conspiracy of the ***Technomancer*** world, with monitors planted in every government and every university Thaumatology department (sometimes, in the latter case, nudging research along in ways that may be helpful or deeply manipulative), keeping a very nervous watch on magical historical research (and sometimes discrediting dangerous projects), and trying hard to learn more about the causes of mana-level fluctuations. After all, they of all people know that mana levels can fall as well as rise.

Subsequent Minoan schemes culminated in the Renaissance, which some saw as the epitome of their dreams. Once again, they were building a great power in Europe; once again, Greek philosophy was resurrected; once again, the value of sea-power was demonstrated. One bizarre experiment, tinkering telepathically with the mind of an obsessive and misguided Italian navigator, paid the largest bonus in their history, as he discovered two entire new continents to exploit.

Meanwhile, however, European religion was causing trouble. The conspiracy resented other groups (such as the papacy) attempting to claim universal authority. Also, demonstrating psionic talent could now cause a person to be burned as a witch. While the Minoan leadership were too competent to suffer this fate, they disliked having to be careful, and hated losing potential recruits. They grasped enough about heredity to guess that the talent might be lost to the general gene-pool, which did not accord with their long-term plans. A series of escalating responses culminated in the Reformation. Things got a little out of hand there for a couple of centuries, but the conspiracy had become hardened with time; they knew that they could not rule the world without *someone* dying.

Recent Centuries

The Minoans had learned much about the art of conspiracy, although they could still make mistakes; for example, they supported the Enlightenment, but took centuries to comprehend some of its ideas. The focus of their plots shifted, seemingly arbitrarily, over time, but there were several places to which they often returned. For example, they preserved Tudor England by schemes such as the sabotage of the Spanish Armada; they always had a soft spot for island nations, and England was a handy counterbalance to Catholic forces. Later, they also supported, or at least permitted, Britain's Industrial Revolution, and the rise of the British Empire.

The United States was an experiment which caused a little trouble, but which ultimately proved amenable to control. Clearly, in Minoan eyes, *someone* had to take charge of the wealth of that continent, and a combination of factors made this new nation the most effective tool for the job. Unrestrained capitalism is not susceptible to top-down control, but it produced big, powerful corporations, and those were trivial to influence; in turn, they could be used to manipulate the government of the nation, which had in any case been infiltrated from the first. As the U.S. ran out of frontier to explore, all the old energy was neatly diverted to making money, and when a few of the citizens began to question how much power they really had over their own lives, or whether they needed ever more material wealth without even having the time to enjoy it, a team of especially brilliant Minoan social engineers distracted them with ever-more-ludicrous hobbies, deranged conspiracy theories, and movies so loaded down with subliminal influences that there is little room for actual plot.

(Minoans think that "militias" are wonderful; directionless paranoia discredits conspiracy theories with the population at large, and all those guns keep the professional law enforcers distracted. Three different mid-rank Minoan agents have tried to take credit for the whole business, though they are all lying.)

Atomic Horror Crossovers

In ***GURPS Atomic Horror***'s suggested background, Atlantis was a civilization founded by the benevolent alien Loi Mutants on a chain of islands in the Atlantic, lost when the seas rose at the end of the last Ice Age. The Minoan Conspiracy can be added to that background, as follows:

Around 2000 B.C., some of the Loi decided that it might be safe to act directly among humans once again. Rather than posing as "gods," they now tried presenting themselves as wise leaders. Furthermore, they now believed that humanity could be *taught* powers of the mind and body that had previously been thought to be functions of mutated Loi genes. Crete was chosen for this experiment because, as an island, it could be cut off altogether in the event of disaster, and the Loi teachings would not spread too quickly. On the other hand, it already supported a fair-sized population, and was close enough to other urban cultures of the day to possess a basic grasp of civilization.

After a cautious start, the experiment proved dazzlingly successful. Unfortunately, just as it was hitting its peak, the Alphans arrived on Earth, and recognized signs of Loi activity. Mostly, they simply observed, but after a scout ship was destroyed by rash *human* psionics on Crete, the Alphans decided to eliminate this threat. A saucer used its weapons to trigger the eruption of Santorini, devastating Crete.

The Loi attempted to protect their surviving protégés by teaching them to hide within human society, much as the Loi had been doing for 200 years. However, in the confusion and terror, the human psis turned on their teachers, accusing them of cowardice and tyranny. The Loi reeled in confusion, and the rift has not been healed to this day.

The Minoans did nonetheless go underground, surviving alongside the Loi. The two groups never fought to the death, and sometimes collaborated to promote civilization, but the Minoans lack the detached Loi benevolence, and were quick to support tyrants and warfare if it suited their purposes. Today, they are aware of most of the alien factions operating on Earth, but while the Loi Mutants work to help humanity deal with these problems peacefully and "cleanly," the Minoans build strange experimental weapons in Siberian laboratories, encourage violent government responses to UFOs, and practice their deadliest psionic techniques.

Points East

Communist Russia, on the other hand, was only a partially successful experiment. The original idea was to get rid of a cumbersome monarchy, end a war between European nations that had already dragged on longer than planned, and test various theories of direct social control. However, the war proved annoyingly hard to stop, most of those theories failed the tests, and some of the puppets used to run the system sank into paranoia under the strain of telepathic manipulation, leading to (among other things) the need for *another* European war to rearrange matters to Minoan tastes. Admittedly, Russia proved a very useful place to conduct large-scale scientific research into psionic powers and other exotic fields, under conditions of extreme secrecy. The "Cold War" was a useful distraction for the United States, its allies, and the general public. (The Minoans would never have let it turn hot.) Still, by the end of the 1980s, the conspiracy considered that project a write-off. It took about three days of low-key psionic manipulation to make the whole thing collapse. The conspiracy is now standing back to see what grows out of the rubble.

As for Asia, modern Minoan policy is remarkably simple. The old Asian social patterns and modes of thought were always a little hard for this Western conspiracy to grasp, but now it has co-opted them. Oriental cultures are remarkably good at capitalism when they are persuaded to try it, so the Minoans encourage them at every opportunity, then infiltrate the growing financial systems, banks, and government bureaucracies, using principles learned two centuries ago in the West. Occasionally, things run out of hand, but then a swiftly engineered economic crisis or market slump steadies the process. Optimistic Minoans feel that they will have that region under *more* control than America or Europe within half a century.

The Conspiracy Today

At the beginning of the 21st century, the Minoan Conspiracy is once again reviewing its position. It grasps the levers of power in every large nation on the planet, and has accumulated a considerable body of knowledge in certain fields, especially the science of psionics, while carefully discrediting them among the public. It is, seemingly, secure. But the world keeps changing around it; its members enjoy the benefits of technology too much to fight them, but who knows where they will lead? Trade, always a Minoan secret weapon, has turned into global capitalism, which no one can control, while diffuse paranoia, which the Minoans encourage as a distraction, sometimes throws up individuals who come too close to Minoan secrets before they can be diverted.

In other words, the old saying about riding a tiger seems ever more apposite.

The Council

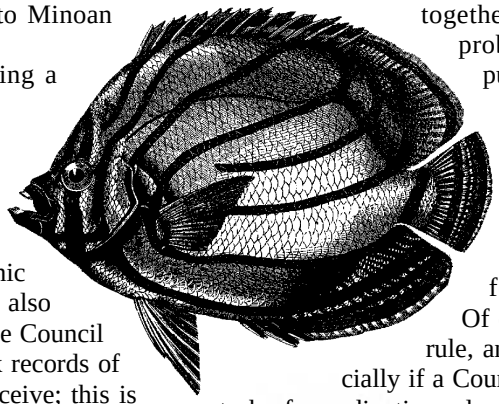
At the top of its structure, the conspiracy is led by a council of 13 senior adepts, all of whom are highly competent with several psionic powers. (Skill in the Bull-Dancer martial art also earns respect in this company; see p. 106.) The Council has unlimited access to the Crystalline Matrix records of past members, and respect the advice they receive; this is one organization where the dead definitely have a vote. New members are selected by the current membership when necessary. Places on the Council are held for life, and as really powerful members make a point of training up the Life Extension skill (p. P15) if they have even a trace of Healing power, some of them have been there a very long time. Still, the years, or bad luck, catch up with everyone in the end; none of the present council is more than 600 years old.

Members of the Council rarely meet in person; indeed, some make a point of not doing so. With the telepathic power available to them, it is hardly necessary, even if several of them have a cranky dislike of modern communications technology. However, their role in the organization might seem limited, even advisory, to an impartial observer. Many dislike being disturbed, and spend most of their time thinking, plotting in a vague way, or adjusting their own crystal personality-records. The conspiracy has been running a long time, and doesn't need to disturb them over routine matters.

Regional "Lords"

The conspiracy retains a somewhat aristocratic, even feudal structure, mostly because it works for them, and the levels below the council are divided by region. Each is run by a "Lord" (some of the younger leaders prefer "chairman" or similar), who organizes lower levels of the local hierarchy as he sees fit.

There are 43 regional divisions of varying sizes in the conspiracy's structure. A Minoan would say that they pay no attention to mundane national boundaries, but the practical fact is that it is sometimes easier to work with the borders set by mundane politics. For example, North America is divided between Mexico (not including some southern parts, which fall within the Central American division), West Coast, Midwest, and East Coast U.S., a northeast region which mostly covers eastern Canada but which also encompasses northern Maine, and western and central Canada.



Regional Lords are expected to work together in pairs to resolve shared problems, and the Council will punish failures to do so (sometimes lethally, if they suspect that excess ambition was involved), but they are almost as strongly *discouraged* from collaborating in large groups; the Council fears conspiring underlings. Of course, this principle is not a rule, and may be disregarded, especially if a Council member has taken on the task of coordinating a large joint project but refuses to be bothered with "trivia." Mutiny from this lower level is unlikely at present, but might become a danger in a few years if the Council continues to withdraw from a confusing modern world.

One other point about Lords is that they must appoint their own successors, giving their chosen name to the Council. The only rules are that the successor cannot be a blood relative of the Lord, and the Council has a little-used right of veto. The nomination can be done in secret if the Lord wishes, and the choice can be changed whenever the Lord chooses. Some use this as a carrot to encourage loyal service, while others are more cautious; some do not wish their cleverest servants to see benefits in the Lord's death. Lords (and Council members) *may* induct relatives, including their own offspring, into the conspiracy – indeed, there are families with a proud and ancient tradition – and some allied Lords have offspring in each others' organizations. While "trading heirs," buying the highest rank for one's own offspring by granting it to others, is viewed with suspicion by the Council, it is not actually prohibited.

The Council controls who is recorded in the Crystalline Matrices, and usually limits the privilege to some Lords and a few very good servants. The Lords are given to understand that their performance (including the judgment suggested by their choice of successor) is continually being assessed, and that even when a crystal has been recorded, it can always be destroyed.

The Minoans and Archaeology

During the 19th century, the Minoan Conspiracy realized that the new science of archaeology would inevitably begin to turn up some facts related to their own origins. A somewhat heated internal debate ensued, as the reactions of leading members of the conspiracy to this prospect varied considerably. Some wanted to suppress it for the sake of complete security; others were fascinated by the idea, and wanted to send sponsored groups into known key sites to extract what could be found and hide anything too dangerous; some even considered encouraging archaeology in general, on the grounds that the interest value would always outweigh the risks. In the end, a very minor Minoan puppet, a rich merchant named Heinrich Schliemann, was selected to excavate Troy and Mycenae (and was easily influenced to destroy or hide a few dangerous finds), and was then neatly discouraged from excavating Knossos, because the conspiracy was not yet ready for that. The site was quietly "sanitized," and only then was research permitted.

Ever since then, the main body of research into Minoan civilization has been carefully watched, but has thrown up no major problems. However, the conspiracy suspects that too much precise and unambiguous information about the Mediterranean Bronze Age *might* cause them trouble in the long term, and a cautious faction has largely prevailed. Rather than supervise and sabotage every dig, the conspiracy has struck at the heart of the subject by dramatically undermining all attempts at consistent dating. A little seeding of samples taken for carbon dating with radioactive isotopes, some telepathic interventions in labs or "tweaking" of samples before they get that far, and the chance of any "mundane" researcher building an accurate and comprehensive outline of the sequence of events in the era has been reduced to zero.

Of course, there is always a danger that some completely unexpected find will cause trouble, but the conspiracy has plans in place for most contingencies. In truth, though, this is a low priority for them; the basic situation is as they want it, and few sane people would believe that discoveries from the Bronze Age relate *directly* to modern world affairs.

Minions of Minos

While the Minoans rule the world with a relatively light touch, they are committed to shaping it their way, and this demands agents of influence. These people are spread thinly, but are always placed for maximum effectiveness. Some do little more than report, but all are carefully indoctrinated to ensure that, if they *are* called upon to act, they will do so with precision and force. A few specially selected minions serve Council members as roving troubleshooters. Most of these are subtle problem-solvers, although spies and full-time assassins do exist; all are extremely capable in several fields, and some regional lords with aggressive attitudes use this as a way of testing potential members for their personal staffs.

Minions of the conspiracy may be indoctrinated, perhaps telepathically, but some serve for "mere" material rewards (and some have been deliberately misled as to their employers' true nature and goals). Only the highest ranks grasp the full scope of the organization, or have any idea as to its true history. Nonetheless, they tend to be quite loyal. The Minoans know many ways to ensure dedication, and use all of them.

Psionics

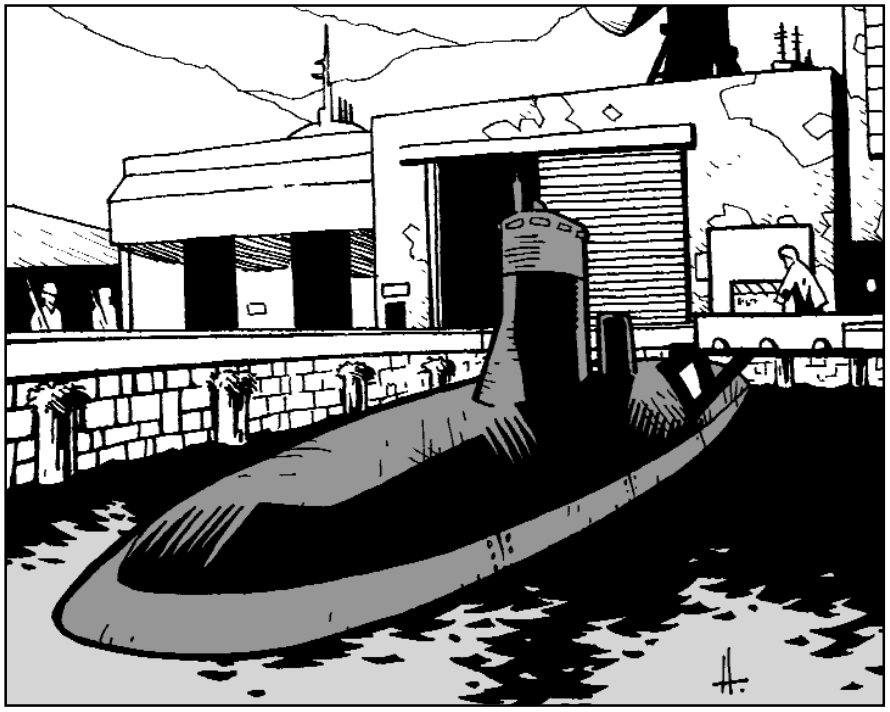
Despite its history, the Minoan Conspiracy only makes limited and intermittent use of psionic powers in relation to the mundane world, and many of its best agents have no such talents. This is partly because such abilities are rare (and most are quite low-powered), partly because Psionic Resistance, while not common, causes so much trouble when it does appear, and partly a matter of habitual, conservative caution. Furthermore, the very people who the conspiracy most wants to control, the leaders and shapers of society, often have annoyingly strong wills and paranoid natures. Thus, "doctrine" is to call in psionic aid only for important tasks and after careful assessment of a problem.

The exact nature and availability of psionic talent in any game is up to the GM, but the suggested rule in a game based around the Minoan Conspiracy is that psionic powers are gained either by an accident of birth or through intensive and highly specialized training from a very young age. (Indeed, only the Minoans are likely to be able to conduct training with any kind of reliability.) Even with training, some people can never gain more than minimal power, if that, and even modern genetics has not enabled the Minoans to identify the underlying principles. Hence, to ensure a working supply of psionic agents, the conspiracy must look to outsiders.

Recruitment

The conspiracy sometimes has to recruit new agents; there are simply not enough fully indoctrinated families, and in any case, people brought up in normal society are sometimes better at some tasks. It is of course hard to find outsiders guaranteed to be loyal to a scheme of world domination, but the Minoans have had a lot of practice.

While they are not above employing squads of cannon fodder, Minoans usually emphasize quality over quantity. Theirs is a deeply elitist philosophy, and in any case, it is usually easier to find one highly capable trustworthy individual than a team of equally trustworthy "grunts." Thus, their first concern tends to be to identify talent, or at least potential. Conversely, finding someone already in a position to be useful may be much easier than moving a trained agent through some hierarchy, even if the high-placed individual is slightly imperfect minion material. In any event, the potential recruit will be observed and assessed for a while by a team of experts in psychology and undercover operations. If their report is favorable, a telepath will briefly scan the subject, looking both for problems and for potential ways to obtain and ensure the subject's loyalty.



From then on, every recruitment is different, although there are some common patterns. Use of outright blackmail is rare, and coercion is only used when a particular individual is *essential* for a particular task, but anything else is possible. Minoan recruiters lie freely, at least at first; the objective is to get the target fully committed, and subtly indoctrinated, before casually admitting to some "necessary simplifications" in what the recruiter said before.

Of course, many Minoan minions never do learn the whole truth, or even a small fragment of it. The conspiracy employs its share of cut-outs and false fronts, and is fully capable of "false flag" recruiting, telling useful employees that they are working for some other group of which they will approve. For example, there is an entire secret base on the Arctic coast of Russia, conducting research into under-ice submersible operations, supplied by small cargo submarines, whose staff fondly believe that they are working for the Russian government. (The Atlanteans find that they will even believe that their research is so essential that the country can afford to pay them even while most of the economy is collapsing.) There is also a "radical" archaeological journal, funded by an "independently wealthy scholar," whose editors enjoy their status as "academic rebels," all unaware that their main purpose is to discredit theories and discoveries that might cause trouble for the Minoans, either by attacking them or by supporting them.

Responses to Independent Psionic Talents

Nonmembers of the conspiracy identified as having psionic abilities are subject to very careful assessment and treatment. The key point, of course, is that they cannot be allowed to run loose. The Minoans know exactly how important their monopoly is, and even an untrained psi talent with no understanding of their own powers, even locked away in a mental hospital, might somehow disrupt Minoan activities or cause trouble by convincing some "mundane" of the reality of psionics. Thus, such an individual is always subject to one of three treatments, which may be attempted in sequence: recruitment, neutralization, or elimination.

Recruitment is of course doubly tricky, as psionic examination may be impossible, and untrained psis may well have developed strange personal foibles. Nor are they guaranteed to have the loose or minimal family connections that the conspiracy prefers in recruits. On the other hand, some confused psis are pathetically grateful to find somebody who believes in them and who can help them master their abilities, while others who have previously developed a streak of megalomaniacal arrogance are happy to join a group that recognizes their "true worth" and offers them flattery and power. Even quite sane solo psis often have difficulty accepting that there may be others, more powerful or much more skilled, who can manipulate them.

Neutralization is hard, especially as even the Minoans have at best a weak understanding of the scientific nature of psionic powers. However, the Minoans have a long-standing dislike of wasting natural talent, even if they cannot employ it, and elimination sometimes causes as many problems as it solves. At one time, low-powered psis had to be neutralized by having them cast out of their villages or locked away in asylums, while higher-powered types had somehow to be brought to one of the fairly few Minoans with significant ability in Mindwipe (pp. P23-24) for careful and lengthy treatment. These days, the conspiracy has access to modern psychopharmacology, and is conducting research into specific psionic-related drugs. Still, this is a tricky area.

Thus, to their own genuine and deep regret, the Minoans are sometimes obliged to resort to elimination. Few psis are powerful and alert enough to make assassination very difficult, even if it has to be made to look like an accident, and even given that the Minoan leadership themselves tend not to become involved in such operations out of distaste. The conspiracy only sanctions a handful of such actions world-wide in any given year. It should also be noted that the targets are often powerful, unpredictable, *dangerous* individuals; more than one such killing has been interpreted by people with partial knowledge of the details as vigilante "justice."

Relations With Other Conspiracies

Of course, in a *really* Illuminated game, the Minoans don't have to be the *only* conspiracy, although they are likely to be one of the oldest and deepest. Their relations with other factions are up to the GM, but there are several options. They might be *rivals*, engaged in either full-scale secret wars or a guarded standoff, each side carefully watching the other for intrusions on "their territory." Or they could be *founders*, setting up subsidiary conspiracies as cat's-paws, extra layers of secrecy, means to manipulate people who respond best to specific ideologies, or diversions for persistent investigators. (Whether such an old plan is still working as intended, or whether the junior conspiracy has taken on a life of its own, is also up to the GM.) Or either or both sides could be just plain ignorant; just because a group is secret doesn't mean that it automatically penetrates other secrecy.

The Adepts of Hermes

If the Minoans use or at least comprehend magic, any other organized magical conspiracy is likely to be more or less under their control. If not, they will be extremely nervous about this "random factor." See pp. 86 and 124 for more on this.

The Bavarian Illuminati

The conspiracy founded by Adam Weishaupt shares a few features with the Minoans: the interest in power for its own sake, the disdain for contemporary morality, mild irritation with the Catholic Church, and extreme elitism in the leadership. On the other hand, the Minoans have precedence. They probably regard these modern upstarts with amused disdain. The Bavarians may have been created or co-opted as puppets for the Minoans, or as a diversion to distract investigators from the older truth.

The Bermuda Triangle

The Minoans retain an interest in maritime operations, and their motives are often opaque to outsiders, so it seems only logical that they might be entangled with the Bermuda Triangle mystery. The conspiracy associated with that name is said to pursue power through control of as many aspects of society as possible, which also matches Minoan style. This suggests that the Bermuda Triangle disappearances may simply be an overt aspect of an unusually blatant Minoan operation. Alternatively, if the Bermudans are independent, they may concentrate on sabotaging Minoan marine operations.

Discordians

Chaos is not a virtue to the Minoans. They aren't control freaks as such, but they are in favor of order and discipline. They would see the Discordians as opposition, or as an interference screen at best. It's possible that the legend of Eris's apple (which led to the siege of Troy) is actually a garbled account of the first proto-Discordian operation against the Minoans. On the other hand, "official" Minoan history says that the Trojan War was engineered by them to unite the Mycenaean kingdoms. Perhaps things just got very confused back then.

The Gnomes of Zurich

Money, to the Minoans, is a means to an end. They always understood *trade*, and quickly grasped the concept of *finance* when it evolved, but they probably never took it quite seriously enough. Thus, while it is entirely possible that the Gnomes were founded, or at least monitored from the first, by the Minoans (probably by the Palatines), it is also possible that the financiers managed to attain world-dominating power without being noticed. In that case, the Gnomes probably became aware of another force manipulating international trade. If the Minoans in turn noticed them, the current situation is likely to be a very cautious standoff; otherwise, the Gnomes will be cautiously trying to manipulate the Minoans' manipulations.

The Network

The Minoans are capable of grasping new technology, but it sometimes takes them a while. At best, they still see computers as tools, and the Net as a way to coordinate groups when there aren't enough telepaths available. The Network may be quite a threat to them. On the other hand, unlike most people these days, they can function without computers, so they may be quite a threat to the Network.

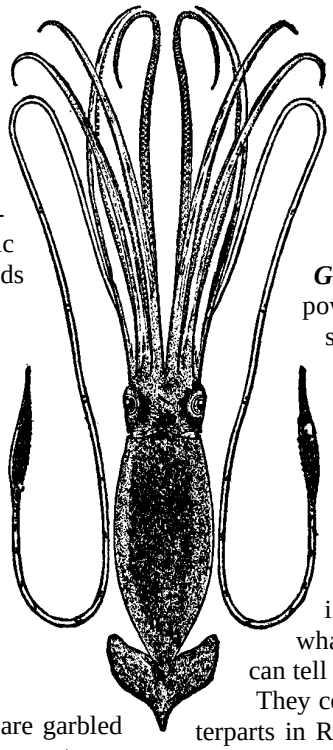
The Prieuré de Sion

On the surface, the goals of the *Prieuré de Sion* would appear not to be the sort of thing with which the Minoans bother. Why should they care about such modern bloodlines, or the leadership of religions which they predate?

On the other hand, no one is more keenly aware of the importance of ancient secrets than the Minoans, and their projects include studies of the inheritability of psionic powers. Perhaps the secrets of the Merovingian bloodline, the "sorcerer-kings," run deeper than the deluded Grand Master and Seneschals could ever grasp.

The "Round Table" Conspiracy

If the Round Table exists, it is clearly a high-level tool of the Minoans – or perhaps a minor rival. The Minoans have no specific interest in the destruction of freedom or the promotion of oppression. If they do oppose the Round Table, their exotic powers and experience in destroying monolithic governments who no longer meet their needs must give them the edge.



The Servants of Cthulhu

The Minoans may be ruthless, but they have no love of destruction. By their standards, the nihilistic Servants are gibbering dolts. They've survived the worst catastrophes in history; they think (probably overconfidently) that they can withstand anything that the uncaring universe can throw at them.

Shangri-La

Either stories of Shangri-La and the like are garbled accounts of hidden Bull-Dancer training centers, or Shangri-La is one faction (perhaps spun off from a Bull-Dancer-influenced community, perhaps independently founded) that can match the Bull-Dancers at their own game. The Minoans are all in favor of peace, but don't like competition, and would prefer that "secrets of training the mind and body" were only released to the world on their own terms, if at all.

The Society of Assassins

As a group of religious fanatics apparently turned mercenary, the Assassins are the sort of faction that the Minoans regard with condescension. They may occasionally underestimate the killers, but the Bull-Dancers consider themselves superior to any drugged knife-man.

Time Meddlers

If they know that time travel is possible, the Minoans will be very nervous of it – after all, it could lead to the exposure of their own historical secrets. Conversely, the Time Meddlers may either not know about the Minoans (perhaps being manipulated by a future version of the Minoan Conspiracy in their home time), or may regard them as limited, stagnant local "witch doctors."

If the Minoans themselves master time travel, they will be sorely tempted to try and improve their own past performances, or even to prevent the fall of Minoan Crete. Frankly, this is a technology best kept out of their hands.

The UFOs

The UFOs don't have the look of a Minoan misdirection exercise, so they must surely be a rival force. Alien technology can probably block or cancel psionic powers, and overwhelm all but the greatest martial arts adepts. If they can't do a deal, the Minoans may have to make sure that the world's governments can suppress this threat – quietly if possible, but that's not an absolute priority.

The Phoenix Project

The campaign background presented in ***GURPS Psionics*** is itself conspiratorial, with powerful groups competing for influence. In that setting, the Minoans would be a very secret faction deep in the background. They have been (more or less) the sole adepts of the powers of the mind for the past 4,000 years, but in the last century, various other groups have managed to grasp and exploit these secrets. The Minoans have decided to make the best of this situation, "supervising" psionics research, keeping various discoveries for themselves, and carefully examining what the materialist science of the modern world can tell them.

They certainly control the Psiberocracy and its counterparts in Russia, directly or indirectly, and keep a close watch on other government psionic projects. The Eugenic Security Police and the Psibercorps are manipulated at second hand, acting to neutralize anything that threatens Minoan dominance and carefully steered away from Minoan operations and likely Minoan recruits. To the Minoans, the Overmind Institute is *either* a manageable nuisance, *or* a secondary puppet, designed to ensure that if psionics do spread widely, or renegade researchers turn up anything valuable, the Minoans will still be in charge. Biotech Chulan is probably independent, but watched carefully; if it gets too powerful, it will be obliterated. Likewise, the Human Alliance is an insulated lightning rod for the anger of paranoid mundanes. The Phoenix Project can remain an independent resistance force, but there may be Minoan plants in its higher levels; after all, its objectives and Minoan ideology are not so very far apart.

Minoans and Black Ops

Combining the Minoans with ***GURPS Black Ops*** would be a large project, but not impossible. The *obvious* approach is to make the Minoans the true secret leaders of Mind, possibly also manipulating the Lodge; if they know much about the other threats with which the Black Ops tangle, they probably stand well back – they have likely discovered the existence of the Ops, and are happy to have them deal with these menaces. A subtler approach is to make the Minoans the secret power behind Argus, and maybe one or two other groups as well; the Black Ops thus unknowingly exist to eliminate rivals, renegade psis, intruding aliens, and assorted monsters about which the Minoans have known for centuries, while keeping the existence of things such as psionic powers secret from the masses.

Thinking Like a Minoan

Holding a secret organization together for more than 3,000 years requires dedication and a potent ideology, and thanks to the Crystalline Matrices (p. 95) and psionic Life Extension, the Minoans preserve a body of attitudes and ideas from earlier millennia. Thus, they are likely to seem anachronistic and strange to any normal human being who encounters them. Which is not to say that they are insane, and they are certainly not irrational. Their activities always make sense to *them.* For example, they seek greater knowledge of psionics – but they regard it as their monopoly. Hence, they may support research in one place, while blocking something very similar in another.

In their early days, they were incredibly humane, tolerant, and benevolent – by the standards of a quasi-theocratic Bronze Age empire. They saw casual killing as wasteful and unethical, and wanted to give even the lowliest peasant the chance to ascend to high rank. On the other hand, anyone who lacked their insight and ethics was an overgrown child at best, a thuggish barbarian at worst. Some of this ideology survives, but overlaid with centuries of paranoid self-preservation, manipulation, and frustration at the inability of humanity to do what is "clearly" best.

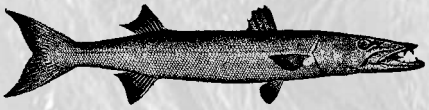
The conspiracy is an equal-opportunities employer at its highest levels – something else inherited from its origins – and there are some formidable female "Lords." Historically, this belief in sexual equality made them even more different from other people, and gave them access to a larger pool of talented individuals. However, then and now, the lower levels have sometimes absorbed the prejudices of mundane society; white males are somewhat more likely to advance.

They are intensely elitist, believing that their powers and heritage give them the right to power, but they can wrap this in amiable politeness, ethical argument, or open pragmatism. They see other "rulers" as fundamentally second-rate; they might agree if pressed that, for example, democracy is better for more people than tyranny, but will promote either if it suits their ends. And they see *no* ethical problems with psionic mind control. They might say that it is, at worst, morally preferable to ordering somebody around at gunpoint, or holding someone prisoner; after all, telepathy rarely kills. Essentially, however, they regard use of their powers as having its own moral category, and smile condescendingly at those who cannot comprehend this.

Factions

Despite the telepathic links and the dedication to their goals, the Minoan Conspiracy is not a single-minded unit. Members are free to debate methods, and even goals, and often do. In particular, members often recognize three distinct factions, each with their own approaches and priorities, and these three groups sometimes disagree quite forcefully.

However, it is important to note that these are much more points of view than parties or subdivisions. Not only are the factions fully capable of collaborating when Minoan interests demand it, but it is not impossible for a Minoan to move between them, to agree with different groups on different specific subjects, or to avoid aligning with any of the three. It would certainly be almost impossible for an enemy to drive a wedge between the factions with any long-term effect.



The Palatines

When Crete fell, the exile groups were mostly led by the same people who had run society on the island, and these people only felt secure when they had power over their surroundings. In anarchic and dangerous "barbarian" lands, this feeling was amplified. Hence, the conspiracy has always pursued power as an end in itself, and when it has acquired it, the leadership has used it very consistently.

The "Palatine" faction are the ideological descendents of those first leaders. In their eyes, the world is a messy and dangerous place, and the conspiracy exists to deal with that problem. Because most societies lack the old Cretan sense of unity, they have to be ruled in the only way they understand: by law and political skill.

As a group, Palatines gravitate to power. This must be real power; they despise figureheads, and infiltrate bureaucracies as well as political parties. Of course, the conspiracy members who hold public offices or civil service jobs are often just puppets, but their Palatine masters watch them closely. The higher reaches of the American and Russian governments and the European Union bureaucracy are full of such people. However, the Palatines are so concerned with power that they sometimes forget goals. Their plots tend to be either short-term and brutally pragmatic, or long-term and subtle to the point of invisibility. The Roman Empire was, in a sense, just a huge Palatine scheme that eventually fell apart when the improvised fixes were no longer sufficient; the Reformation was a Palatine fix for the problem of the Catholic Church, with long-term consequences that the plotters never anticipated.

Objectives: The Palatines see themselves as benevolent but also able to take a long view. They want to bring peace, as no land has truly known peace since the Minoan age. Real, lasting peace, of unfortified cities and one religion. A total peace, above *anything* else.

The Thalassocrats

Another group preserves a slightly different attitude to rule. It was founded by Cretan exiles nostalgic for a different sense of security; that granted by living on an island and controlling the seas. They also understand the power of long-distance trade to promote security and accumulate wealth. These "Thalassocrats" therefore believe that the conspiracy should focus on recreating the conditions that made Crete strong, and then taking charge of the nation in question.

The Thalassocrats are probably the Minoans least uncomfortable with technology. They have always taken a keen interest in maritime engineering, seeing the appeal of better ship designs and navigational techniques. They effectively control most of the conspiracy's handful of secret bases, including the largest, in Antarctica, and of course its small fleet of ships.

The high point of Thalassocrat influence was the British Empire, which was riddled with Minoan influence. (Those conspiracy theorists who insist that the British Royal Family plays a large part in some international conspiracy may have a faint glimmer of this truth, although they are generally hilariously off the mark in most respects.) The Empire was almost the Thalassocrat ideal, being island-based and profiting extensively from maritime trade. However, it had other problems; thanks to various new philosophies and ideals (many of them side-effects of old Minoan manipulations), it proved unable or unwilling to retain control of its territories, and the industrialization which various ultra-progressive Thalassocrats had cautiously approved had unexpected, complex consequences.

Later, some Thalassocrats had hopes for Japan, although their manipulations ran disastrously out of control in the 1920s and '30s, resulting in violent Japanese militarism which was only effectively neutralized by a world war. Analysis of the causes and effects of that incident has forced some Thalassocrats to accept that the age of empires may have passed, although some still intend to do more with Japan in another few decades. Another group is highly influential in Taiwan, focusing less on the idea of building an empire than on the possibility of turning the place into a fortified base, while others again want to shift Britain back toward power via the European Union.

Objectives: The Thalassocrats want to build the New Atlantis; what they seek is unstoppable superiority, based on a rich trading island. They could almost taste victory during the Victorian age – but their focus was too narrow, and America and Germany messed things up. Now they're going to do it right, even if it means starting over from scratch.

The Bull-Dancers

Last, many Minoans focus not on old systems of power and rule, but on the mental and physical disciplines which are the ultimate key to their power. In their eyes, power over the world derives from mastery of the self, both mind and body. They are traditionalists in another way, carefully preserving these old secrets. Thus, they tend to be exceptional psionicists and martial artists, and they recruit extensively from promising low-level agents who are working their way up the power structure. This makes them the most numerous of the three factions, but the least influential at the highest levels.

Known as the "Bull-Dancers," this faction plays a large part in Minoan operations, but has only a weak grasp of long-term schemes. A few of its members sometimes consider the idea of releasing some of its secrets to the world, and it has long had a fairly strong presence in Asia. A few mountain temples in and around China and Tibet are actually Bull-Dancer strongholds, although only a few secrets of their physical training systems have leaked out into the martial arts community. They encourage martial arts movie crazes in the cinema, which have the dual benefit of discrediting the idea of "martial arts mysticism" among serious people while helping recruitment of new agents from various *dojos* and gymnasia. They also infiltrate academic study of parapsychology, and take most of the credit for thoroughly discrediting it in most circles in the last few decades while acquiring almost all the useful results for the conspiracy.

The Bull-Dancer Martial Art (21/54 points)

The Bull-Dancers have pursued mental and physical perfection for millennia, and some have developed a truly extraordinary martial art. Of course, it is heavily entangled with the traditions of the Conspiracy, meaning that it has some seemingly useless elements, but having to spend time mastering a few odd skills is a small price to pay for the advantages it grants in combat.

It is primarily based on flamboyant acrobatic maneuvers and an almost mocking treatment of less sophisticated foes, however strong they may be. The expert seeks to evade opponents at first, waiting for them to make ill-judged attacks, the force of which can be turned against them. However, if forced to close quarters, a Bull-Dancer will demonstrate a brutally pragmatic knowledge of weak points and leverage, usually quickly opening the distance again.

This Art should usually be the secret advantage of a few formidable NPCs, and GMs should feel free to charge a large Unusual Background to any PC who wishes to know it, if this is permitted at all, *in addition to* Trained by a Master for the cinematic version. Bull-Dancers are *also* likely to study more conventional arts, partly because they take every opportunity to broaden and deepen their skills, and partly because this allows them to win minor fights without flaunting their secret arts. The Bull-Dancer Art belongs in wild, high-kicking games in which martial arts action meets conspiracy and formidable PCs meet their matches in the strangest places as they work their way up the ladder of secrets. In ***GURPS Martial Arts*** terms, it is defined as follows:

Primary Skills: Acrobatics, Bulldancing, Judo, Karate.

Secondary Skills: Body Language, Jumping, Parry Missile Weapons, Savoir-Faire (Dojo), Wrestling Sport.

Optional Skills: Animal Handling, Axe/Mace, Boxing, Breath Control, Bullfighting, Dancing, Fast-Draw (Knife), Hypnotism, Karate Sport, Lasso, Main-Gauche, Meditation, Seamanship/TL1, Stealth, Style Analysis, Tactics, Wrestling.

Maneuvers: Aggressive Parry, Axe Kick, Back Kick, Breakfall, Ear Clap, Elbow Strike, Eye Gouging, Feint (Karate), Ground Fighting (Karate), Head Butt, Hit Location (Karate), Hook Kick, Jump Kick, Knee Strike, Shuto, Spin Kick, Sweeping Kick.

Cinematic Skills: Blind Fighting, Flying Leap, Mental Strength, Power Blow, Pressure Points, Push, Sensitivity. The Autohypnosis and Hypnotic Hands skills are available as options to characters who meet their prerequisites.

Cinematic Maneuvers: Acrobatic Kick, Enhanced Dodge, Enhanced Parry (Bare Hands), Flying Jump Kick, Hand-Clap Parry, Roll with Blow, Sticking.

That sort of thing aside, and ironically for the faction most widespread among active agents, the Bull-Dancers are the Minoans least inclined to long-term, large-scale manipulation of the mundane world. Their attitude is, essentially, that someone who masters enough personal abilities has less need to shape the world, as he can dominate in any situation.

Objectives: The Bull-Dancers want to create the perfect human, *Homo minos.* Once they do that, they will be the aristocracy of the world, by right of proven superiority. It won't really matter then what the imperfect humans do, though the Bull-Dancers have no intention of ruling unkindly. They have usually approached this goal through training and self-perfection, although today, the Human Genome project seems to some of them to offer a complementary option.

Overall Goals

Although each faction's ideology includes a goal, the fact is that the Conspiracy as a whole can often seem uncertain and unfocused. In the short term, it exists to protect and support its leaders, who suspect that they would not be well-treated if humanity knew how it had been manipulated. The highest ranks are thoroughly habituated to power; sometimes, the resources of the global conspiracy have been turned to ensuring someone regular access to a particular restaurant table. In some centuries, the Minoans have all but forgotten their own ideals, and spent the years quibbling and threatening to fall apart. There have been leaders who have sought ludicrous goals, such as the recreation of Minoan Crete, on Crete, as a global super-ower, or the renewed favor of forgotten gods.

The beginning of the 21st century brings two dangers. First, with just one acknowledged world superpower, some Minoans have decided that the time may be coming when they can take charge altogether. They are turning all their wealth and influence to total control of the United States, and to making sure that no other power can *ever* challenge it. But it is the ideologues in each faction who have become most dangerous. They have started cooperating, and some of them are coming to the conclusion that destroying the global ecology and economy would let them attain all three of their goals at once, in the new world that they could build on the ruins.

The Minoans and GURPS Voodoo

The background to ***GURPS Voodoo*** is another conspiratorial setup, built around ritual magic. Interestingly, the Minoans can be dropped into the *deep* background of that world with relatively few modifications.

The big, mandatory change is, of course, to de-emphasize or eliminate their use of psionics, replacing it with ***Voodoo***-style magic. (Keeping the psionics probably makes them too powerful, and raises complicated questions about the interaction between spirit/ritual magic and psi.) Senior Minoans are of course among the secret masters of the world, with *at least* Sixth Level Initiation, and may actually represent the majority of living Tenth Level Initiates; even the lowliest regional Lords would be Fifth Level. Most trusted Minoan agents would be Initiates, and quite a few might be Spirit Warriors, although some might prefer to use the Bull-Dancer Martial Art. (Note the suggestion on p. VO112, that being Trained By A Master represents an alternative path of initiation.)

Of course, this raises the question of which spirits the Minoans themselves invoke. The answer likely involves some strange and ancient entities forgotten by most of the world, even the greatest Initiates, since the Bronze Age. GMs will have to develop these for themselves, probably with much use of the Minoan bull motif, although they will probably be quite similar to the pantheon invoked by the Lodges (see pp. VO96-98).

The Minoans obviously predate the Lodges, who they must regard as half-ignorant novices, and have doubtless watched and manipulated them from the first; they *do* share the same Eurocentric attitudes. The Gnosticism at the heart of Lodge philosophy would seem rather nihilistic to a Minoan; while they recognize that power and enlightenment require access to secret lore, they themselves see salvation as lying in *this* world. Still, Gnosticism serves to distract the less potent sorcerers of the Lodges from closer examination of the truths of this reality. The fact that it also grants admission and license to darker forces is something that the Minoans are too prone to ignore. Voodoo, to the Minoans, is a crude and paranoid barbarian magical cult – sometimes potent, but not truly significant.

The Minoans should be kept as a hidden NPC-only group even in a ***Voodoo*** game, where PCs have access to secrets well hidden from most human beings. They are the ultimate magical materialists, the ancient secret behind the rise of the West.

The Minoans and Technology

It may seem that the Minoans are downright technophobic, and it is true that their habitual conservatism gives the most senior of them some difficulties with advanced technology. However, this problem should not be exaggerated. No conspiracy could last 3,500 years if it was completely resistant to novelty. They would argue, with some logic, that it is foolish to become dependent on untested, experimental toys, and that old skills still serve them well. A few of their highest leaders have sunk into cranky obstinacy, while others seek to embrace progress, with distinctly variable success. The problem isn't crippling them yet, but if technological progress continues to accelerate, they may eventually hit a crisis.

Maritime Technology

Some Minoan leaders, especially Thalassocrats (p. 105), seem downright progressive in shipbuilding and ship design. They have traditionally seen maritime trade as one of the cornerstones of civilization, and sea-going couriers long united their various outposts. Today, they monitor underwater archaeology in the Mediterranean (see p. 107), and have a profitable sideline in salvage from "lost" wrecks. Their own vessels, which include submersibles and surface-based patrol craft and couriers, are rarely large by modern standards, but in some respects they are technologically at least ten years ahead of anything else afloat.

Secret Bases

Although they infiltrate society rather than standing outside it, the Minoans do sometimes find a need for secure private installations, especially for work in fields such as shipbuilding. This became a minor problem in the 20th century, as explorers mapped the last few square miles of the globe and information systems improved. However, the Minoans still manage, and one of their most sophisticated uses of technology is also their largest base, somewhere on the coast of Antarctica, which includes enclosed dry docks and shipyards, and also their most powerful computers.

Psionics

The exact details of the psionic powers available (to the Minoans or others) is up to the GM, and depends on the style of play desired. In a low-key game, only some of the Minoan leadership, their best agents, and a few cautious outsiders would have psionic powers. Few if any characters will have Power levels greater than 5, and will know only the powers ESP, Telepathy, and possibly a few rare cases of Antipsi, Healing, or Psychic Vampirism. Only in highly cinematic games should characters have access to the full range of powers and skills detailed in the ***GURPS Basic Set*** or ***GURPS Psionics.***

Note, incidentally, that their powers probably give the Minoans a *greater* advantage in low-key campaigns. In cinematic games, they may face opponents with psionic powers of their own, or at least Psionic Resistance or phenomenal willpower. Furthermore, anyone causing them trouble may previously have picked up hints of the reality of psionics, making them predisposed to believe in what they are dealing with. In a low-key, very secret psionics setting, on the other hand, even a few points in psionics can give a conspirator the ability to sweep away many problems, neatly and invisibly.

Taking the powers described in ***GURPS Psionics*** in turn:

Antipsi (p. P10) should be permitted in most games. Minoan agents with this power will probably be assigned to teams who recruit or neutralize unaligned psis in the general population; the conspiracy has few other uses for it. It does make an interesting edge for PCs fighting the Minoans.

Astral Projection (pp. P10-11) can be left out of most games, unless the GM wishes to deal with the whole question of the Astral Plane. It is also rather powerful in low-key games of espionage and secrecy, unless all parties are aware that such powers exist.

Electrokinesis (pp. P11-13) may not quite fit with the "feel" of the Minoan Conspiracy, with its slight discomfort with modern machinery, though any Minoan agent developing this power will be encouraged and fully employed. The Lightning and Photokinesis skills may be a little too garish for noncinematic games.

ESP (pp. P13-15) has a nicely low-key conspiratorial edge. However, the Minoans may *still* have some problems with Precognition skill, which they never did master back in their Golden Age. On the other hand, high-power Bull-Dancers may cultivate Combat Sense.

Healing (pp. P15-16) should be kept rare, especially in noncinematic games; physical injuries should be a serious matter in most conspiracy games. However, the Minoan leadership should have access to Life Extension, so that the Council can include at least a few very ancient, weird individuals.

Psychic Vampirism (pp. P16-17) isn't really the Minoans' *style*, although a few of the leaders and more sinister agents might possess it, thus flaunting their arrogant and exploitative attitudes.

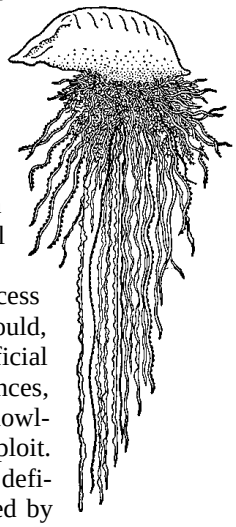
Psychokinesis (pp. P17-19) is rather flamboyant for low-key games, though a level or two and some skill with Telekinesis can give a character a small but uncanny edge. Cryokinesis makes an elegantly nasty attack for psionic assassins.

Telepathy (pp. P20-26) is of course the quintessential psi power, and extremely useful for secret conspirators. Only formidable (and perhaps cinematic) leaders should usually employ telepathic attacks such as Mental Blow or Sleep, let alone Mental Stab or Mindsword. Mindswitch can be used in campaigns merging cinematic power with rampant paranoia; amoral Minoans would use it to grant themselves vast lifespans.

Teleportation (pp. P26-27) is grossly cinematic, and probably best left for a few sinister agents and specialist PCs even in high-power games.

Psionic Technology

In general, the Minoans rely on natural talent for psionic effects; only in wildly cinematic games, probably with multiple psi-using factions, should any of the ideas detailed in Chapters 4 and 5 of ***GURPS Psionics*** be brought into play. (One exception is the Memory Crystal, p. P63, which the Minoans may have developed as a side effect of their work with the Crystalline Matrices, and kept around as a curiosity.) The conspiracy *has* investigated the science of the subject, especially over the last half-century, but the urge to preserve secrecy and a lingering incomprehension of modern science among some Minoan leaders has prevented any great breakthroughs. Characters may need an Unusual Background to spend any points at all on Psionics skill (p. CI158), indicating that they have either somehow trained with Minoan-connected scientists or that they worked on a research program which achieved real results before the Minoans shut it down.



Optionally, the Minoans *may* have access to some psi-drugs (pp. P78-80); these could, after all, simply be (more or less) beneficial variants of known psychoactive substances, which the Minoans, with their prior knowledge of psionics, could identify and exploit. The drugs' negative side effects would definitely make sense if they were identified by random testing of naturally occurring substances that happened to come to hand. In that case, the conspiracy would definitely have established highly secret pharmaceutical research programs to study and improve these substances. Finding Minoans suitable to test psi-enhancing drugs with uncertain side effects, who would volunteer for the job, might be hard; there would definitely be a temptation here to make use of captured, recalcitrant "wild talents."

Secrecy

It should be emphasized one more time that, in most games, the Minoans *do* treat psionics as a closely guarded secret, and in any situation, a member of the conspiracy must be convinced that the benefits of using a psionic power significantly outweigh the threat to their secret. This even applies if the agent is unobserved, if there is *any* risk that an outsider might guess that something strange happened. This caution is a well-ingrained and ancient habit.

However, secrets can only be preserved if everyone who knows them is under control. When the Minoans suspect that their own secret is under threat, they may be ready to compromise it slightly to defend against worse possibilities. After all, they have long since discredited the whole subject with the general public; a few more tabloid rumors won't hurt much. And dead, captured, or brainwashed opponents can't even spread rumors. The flip side of paranoid caution is ruthlessness.

Using Spell-Based Magic Instead of Psionics

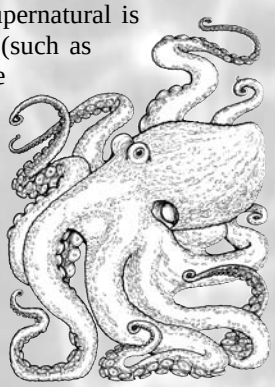
GMs who prefer the ***GURPS*** spell-based magic system over psionics can assume that the Minoans have access to "ancient magical secrets" rather than "powers of the mind." If all the spells listed in ***GURPS Magic*** (let alone ***GURPS Grimoire***) are available in secret Minoan magical colleges, the Minoans are likely to be all too powerful and unpredictably dangerous to anyone fighting them, even if the world is mostly Low Mana. (The results are also likely to be too "fantastic" for most conspiratorial games.) However, there are ways to control this problem.

One is simply to have only a short and carefully controlled list of spells available. If these are mostly from the Communication and Empathy, Healing, Knowledge, and Mind Control colleges, the "look" of the game can be much like a telepathy-oriented psionics-based campaign; other colleges likewise have their own "flavor." (Light and Darkness spells give their users a certain dramatic but mostly nonlethal flair, while the Animal and Plant colleges could suit the idea of Atlanteans as wielders of ancient druidic lore.) Another trick is to require that *all* spells be cast ceremonially (see pp. M14-15), by groups of wizards, which changes them from a menace in combat to collaborative behind-the-scenes manipulators.

Or, last, the GM can declare that the entire world is in fact a No-Mana area, with a few small areas of Low Mana or, if wizards are lucky, Average Mana. That would force the Minoan wizards to hole up in their incredibly heavily fortified strongholds, using competent but nonsupernatural minions to perform most of their tasks.

Supernatural Horror

In worlds where the supernatural is associated with monsters (such as that depicted in the upcoming ***GURPS Cabal***), the Minoans will most likely avoid magic, concentrating on "natural" powers of the mind and body. PCs in such a game may come to regard them as the lesser evil – although the Minoans will, most likely, have learned to be *especially* ruthless in their struggles with dark rivals.



CHAPTER SIX

LORDS OF THE DEEP

"This power came forth out of the Atlantic Ocean . . ."
– Plato, ***Timaeus***

This chapter presents a version of Atlantis as the sunken city; a land now far beneath the waves, but not destroyed, not lifeless, and now regaining contact with the rest of the world.

It is designed primarily for use in superhero or Victorian-era steampunk games, although it can be adapted to other genres with a little work. The precise details of the explanations need to be different in a few places, to preserve genre "feel"; where this is necessary, the two variants are clearly flagged. In all cases, however, the key feature of the setting is weird science, rather than magic or psionics, though GMs can, optionally, add such things to the mix.

For steampunk games, GMs are strongly recommended to consult ***GURPS Steampunk,*** which explains some of the ideas mentioned in this chapter in more detail. For "supers" campaigns, ***GURPS Supers*** is of course the relevant reference. This version of Atlantis is probably a little too wild to combine with the gritty "IST" setting detailed in some ***GURPS*** books, though adding Atlantis returning to view in a world filled with heroes might be an interesting twist.

Victorian/Steampunk Games

This version of Atlantis is explicitly designed to be dropped into a 19th-century weird-science game, though the advanced technology and high power level are likely to have a radical effect on the world at large if Atlantis comes into regular contact with surface civilization. GMs may prefer to keep the Atlanteans isolationist and isolated, at least for a while, and might even resort to the old Victorian melodramatic trick of having the place somehow destroyed after the PCs have discovered it and had a few adventures there.

The sample settings described in Chapter 8 of ***GURPS Steampunk*** include one which can incorporate this Atlantis fairly easily: "Etheria" (pp. STM126-131). This, too, has science based on the demonstrable existence of the Ether, and reports of an ancient, dying civilization on Mars. The eventual discovery that the Martians were once capable of space travel, and indeed visited Earth, could cause a minor stir among human scientists and historians, though not as great as that caused by the initial discovery of Atlantis itself. The water-breathing Atlanteans might even have been produced by artificial hybridization with the amphibian race of Venus.

Castle Falkenstein

The background of ***Castle Falkenstein*** and ***GURPS Castle Falkenstein*** includes hints that *something* interesting might be found under the Atlantic, and bold adventurers are starting to conduct research in the deeps; adding this version of Atlantis would be quite feasible, although it would require quite a bit of fudging in the history. Of course, older Faeries should logically know about it, but they often have their reasons for not talking about things (including sheer forgetfulness and whimsy). Auberon, and maybe The Adversary, probably *should* know about the place, and perhaps have it factored into their plans.

There are also a lot of lesser Faeries, including Merfolk, who should have some acquaintance with Atlantis, although most of them seem to prefer coastal waters to the cold deeps. Most Atlanteans would probably view such creatures with nervousness, and try not to think about them too much. It is possible that orichalcum-based technology could threaten Faeries with True Death, which would make it very worrying to them; Atlantean technology might even include a form of Engine Magic, although that would have radical consequences for the setting.

Modern-Day/Supers Games

With the long tradition of Atlantean characters in superhero comics, this version of the Sunken City should logically fit right into many games, although it could only really be worked into the "default" world described in ***GURPS Supers*** and (in more detail) in ***GURPS International Super Teams*** if the GM and players are willing to shift the perspective and make things a little less gritty and more wildly cinematic. Still, having the IST supers suddenly confront something as radical and unexpected as an unknown aquatic nation, and

evidence of two more starfaring alien races, could certainly shake things up entertainingly.

Fitting it into any other sort of modern-day game would probably be a little too wild, although ***GURPS Black Ops*** agents would no doubt see it as yet another thing to hide, and the Black Smoker creatures as yet another thing to shoot, blow up, and tear apart with their bare hands (then get the scientific boys to analyze the fragments). For that matter, there are probably some bits and pieces of Atlantean orichalcum and some sealed tubes of Black Smoker organic material in ***Warehouse 23.***

Horror Games

While this version of Atlantis is mostly designed for melodramatic, relatively upbeat games, it has some quasi-horrific elements, from the uncaring aliens who laid the foundations and treated humanity as a slave species, to the sinister Black Smokers. Fitting it to a wild sort of horror game would mostly be a matter of shifting some emphases. Perhaps the Atlanteans themselves could have been rendered subtly but radically inhuman, in both their varieties; while they need not be utterly hostile, they could be unnerving and even cold-blooded, literally as well as emotionally.

In most horror games (aside from ***Black Ops*** shoot-'em-ups), anything as wildly strange as Atlantis should be kept off-stage. Investigative PCs should probably encounter only strange stories told by hard-drinking old submariners, the suggestion of something watching them from the water when they go sailing, and – maybe – an oddly deformed corpse in the port city morgue.

History: Deep Survivors

Plato's story of Atlantis was a garbled recollection of something even stranger. It was correct in some significant points, but many facts, including most of the times and distances, were invented by Egyptian scribes or the priests who read their accounts (or perhaps even by Solon or Plato), to fill out the story. On the other hand, many other accounts of lost lands may also contain hints of the truth.

War in Heaven

The part of the story which no one knew by Plato's time goes back tens, maybe hundreds of thousands of years, and far beyond the Earth. The exact details vary with the type of game.

In a steampunk game, it all begins on Mars, which was home to a great civilization in that era. However, it was divided between several radically different nations, which came into increasing conflict. Eventually one nation, defeated in war, built a small fleet of spacecraft using advanced, experimental technology, and fled to Earth. They were not seeking a new home, however, but a base where they could regroup and build new weapons for vengeance.

In a supers game, the story begins with an interstellar war between two highly advanced species. Even with faster-than-light technology, this was a drawn-out conflict of protracted skirmishes and multiparsec flanking movements, with even minor scouting missions taking gigantic ships away from home for years at a time. During the war, one such ship, detected and harried by an enemy flotilla, was driven far from known regions. Its jump drive was damaged and unreliable, so its arrival on Earth was pure chance.

The Quest for Orichalcum

In either case, the aliens arrived on this new world looking for a vital resource: the substance that the Greeks called orichalcum.

In steampunk terms, this is a "miracle element" unknown to 19th-century science – a substance with a distinctly unclear relationship to Mendeleyev's Periodic Table (as is so often the way in Victorian SF). The Martians sought it because it has the capacity to interact directly with the fabric of the ether in a unique way, allowing some limited but extremely useful effects. See pp. STM95-98 for the theories behind this; the Martians could achieve most of the effects discussed there, but the human Atlanteans (see below) were never able to achieve stable control of large-scale etheric-manipulation effects, and failed to replicate the Martian reactionless thrusters, or to build functional etheric shock weapons.

In a supers game, orichalcum is a high-temperature superconductor, actually a compound of various elements, with odd chemical properties arising from its electrical characteristics; it is found only rarely in nature, and is very hard to synthesize quickly in any quantity due to the inclusion of some rare isotopes, but when it does occur, it tends to "concentrate out" from its surroundings. Visually, it resembles a reddish copper or brass, and is quite soft, but it does not tarnish easily. Its main use is in the manufacture of high-efficiency rechargeable power cells, but it may also form part of numerous other "miracle technologies"; it has the ability to act as a "matrix" for complex but stable electrical energy field configurations.

In both versions, a preliminary survey told the newcomers that orichalcum was available on Earth, but the only substantial qualities lay at the bottom of the Atlantic Ocean. This was a problem for them, especially as they came from a dry, near-desert world, but their science found an answer. They landed in the Sahara, and built a great automated manufacturing base there, a "robofac." (This site is probably long since destroyed, although it might be the source of Arab legends of the fabulous "City of Brass.") This in turn produced the components for a chain of giant bases – artificial islands, almost – which were floated across the Atlantic and moored in place above the orichalcum deposits using (in a steampunk game) titanic cables or (in a supers game) electromagnetic force fields.

The Next Phase

Meanwhile, the aliens had encountered humanity. At first, they mostly ignored the primitive natives, aside from driving them away from their operations with advanced weapons, but eventually, their biological scientists suggested that a use might be found for these creatures. The aliens disliked deep water, and felt nervous during necessary work around the orichalcum dredges. (In a supers game, they would have to have some aversion to advanced artificial intelligences, and their remote-control systems would have to be limited in usefulness; they might have a bias toward biological sciences.) Perhaps some native assistance could be recruited?

Unfortunately, the humans could not breathe water either, and indeed, they proved to have problems with rapid changes in pressure, but advanced science solved that problem. In a steampunk game, this solution consists of bizarre surgical treatments and an array of exotic drugs; in supers terms, it would be genetic engineering, merging cetacean and fish features into human embryos. The scientists anticipated that they would have a useful artificial

work force within a few years, perhaps even turning the planet into a fortress, garrisoned by a servitor race.

However, this was not to be. The aliens thought that they had evaded their pursuers. They underestimated the dedication of their old foes; suddenly, the skies of Earth were full of warships. After a short but brutal space battle, the first scouting party was driven off, but the aliens realized that many more ships were on their way. Swiftly gathering up what orichalcum they had extracted, they fled, leaving their bases deserted. Their enemies came, surveyed the planet, left a subtle booby trap near the main base, and left again. The pursuit continued across the galaxy, doubtless leading to many more battles in other solar systems, but never returned to Earth.

The Human Atlantis

Millennia later, humanity had advanced to its Bronze Age, and early seafarers were venturing out into the Atlantic. The alien visit was long forgotten (except perhaps in myth). Then, one trade ship, large by the standards of the time, was caught in a great Atlantic storm, and driven a thousand miles from land. The 10 men of the crew knew that they were doomed, but clung to their vessel and prayed to their gods.

In the morning, it seemed that their prayers were answered. One of them saw something on the horizon. They assumed it was an island, but as they drew closer, it came to look more like a great building, in the sea itself. Jaws agape, they moored their ship and ventured "ashore."

The leader of the survivors, a bold (or foolhardy) sailor named Att-L'huss, took the lead, and was therefore the one to blunder into a certain chamber. The door snapped closed behind him, and the automatic systems set to work. The room was actually a neural-induction-based education system, designed to teach certain skills to human servitors. Thus it was that Att-L'huss staggered out of the chamber 12 hours later, barely sane, convinced that he had spoken to his gods – and with the ability to operate the simple submersible transport craft which the aliens had left behind when they departed.

The 10 crewmen arrived back at their village the next day, rising from the waves in a metal chariot. Naturally, they were seen as blessed by the gods, and had no trouble persuading others to join them in a return journey. Over the following months, they explored the floating island and three others nearby, and learned to operate the teaching machines by trial and error. Eventually, they gained control of most of the alien systems, and were able to cause the robofac on one of the floating islands to begin producing more watercraft.

Conquest

Thus was founded the ocean-based empire of Atlantis. Few of its subjects ever realized quite how small its ruling population was, let alone that its capital was not the claimed "mighty island in the ocean," but actually just four floating cities. With vessels that could ignore any weapons of the era, some clever politics, and their air of divine power, the Atlanteans spread by first conquering small areas, whose warriors became auxiliaries for the expansion along the coasts of Europe and Africa.

Atlantean scholars learned more and more about their home and its wonders. Once they found a teaching machine that could instruct them in the aliens' written and spoken language, they were even able to make some sense of various records. Some began to reconstruct alien science, including, tentatively, the biological research programs. (In a steampunk game, they learned from manuals of surgery and found stores of drugs; in a supers version, they reactivated genetic engineering tools.) The fact that they practiced on living experimental subjects is a dark secret that later Atlanteans seek to forget.

For the Atlantean Empire had, predictably, grown decadent and drunk with power; recently conquered subjects were treated as slaves, or worse, by rulers who saw themselves as gods, despite the fact that, by now, they had a fair idea of the true nature of their "islands" and the founders. As it turned out, this arrogance was to be their downfall.

Disaster

Among the slaves were captives from pre-dynastic Egypt and pre-Achaean Greece. The former, cautious and observant priests from an urban society who understood politics and psychology far better than the near-tribal Atlanteans, taught the latter the art of dissimulation – of faking subservience while plotting revenge. The Greeks in turn were clever tacticians and fanatically vengeful. The ensuing slave revolt was sudden, dramatic, and very bloody.

Air-Breather Characters

Air-breathing Atlanteans look very similar to humans, but have subtle metabolic enhancements that enable them to breathe a variety of air mixtures under a wide range of pressure conditions, and to tolerate the low temperatures that are more or less inevitable even in high-tech bases in the deep ocean. Thus, they have a racial template with the advantages of Pressure Support at the 10-point level (p. CI63; they can actually tolerate rather more than 100 times normal atmospheric pressure, but react more rapidly and with more extreme effects to very low pressures than normal humans, so this balances out), and 3 points of Temperature Tolerance (p. CI30) at the cold end of the scale. It costs 13 points to play an air-breathing Atlantean.

Because of the nature of their society and its education system, many Atlanteans also have disadvantages such as Chauvinistic (p. CI87), Chummy (p. CI87), Congenial (p. CI89), Dull (p. CI89), Hidebound (p. CI91), Obdurate (p. CI92), or Staid (p. CI94). These are absent often enough that they are not included in the racial package, but GMs may permit Atlanteans to take one of them without it counting toward disadvantage maximums. Atlantean education ensures that all citizens are literate. The normal range of Status in this society runs from -1 (the lowliest unskilled laborers) to 6 (the Autocrat), but there are few applicable Social Stigmas. (Although the city is slightly male-dominated, there are several powerful and independent women.) Any Atlanteans with Status 2+ should usually have some points in Appreciate Beauty and Heraldry skills, as respect in this formal, tradition-bound, static society is based on such subtleties.

Languages

The main Atlantean language is not terribly complex by most standards, despite the fact that it bears little resemblance to anything spoken in the modern surface world, so it can be treated as a Mental/Average skill. Atlantean scholars also study the "Builder Language" – the complex linguistic and symbolic structure of the ancient alien records they preserve, which is treated as a Mental/Hard skill. For Atlanteans to know *any* other languages (apart perhaps from water-breathers' "Water Speech") would definitely require an Unusual Background.

It was also, ultimately, unsuccessful. The Atlanteans had the technology, access to the controls, and the knowledge of how to use them. They also had a numerical advantage. Some of the Greek slaves, however, refused to accept the possibility of simple defeat, and had learned some of the technology. In a final desperate strike, they reached key control rooms and pulled off an act of spectacular sabotage. By the time they were killed, the lower levels of all four islands were flooding, the anchorage systems were destroyed, and repairs were impossible. Another group managed to trigger the self-destruct systems in most of the Atlantean high-tech fleet.

As their islands slowly settled into the ocean, doomed to sink entirely within days, most Atlanteans collapsed into despair. Some (with a few Egyptian slaves) managed to escape in small craft with no self-destruct systems. A few of the scholars, however, refused to give up. They sealed such of the alien buildings as they could, and worked feverishly to preserve the biological research programs. Against all sanity, they succeeded. Three of the four islands settled on the bed of the deep ocean more or less intact, with survivors, and short-range support vessels enabled them to communicate. The next generation consisted of a mixture of slightly modified air-breathing Atlanteans who could survive the colossal pressures even as the more complex life-support systems failed, and water-breathers who had no problems whatsoever.

After all that excitement, things turned quiet for a while.

The Rebuilding

Atlantis sank around 4500 B.C. Over the next few centuries, the new population set to work converting their salvaged ruins and tiny population into a viable society. Many of the old systems failed, especially most of the robofacs that had been available initially, but by then, the Atlanteans had a viable technological base. By ironic good fortune, they even had access to the orichalcum deposits.

However, they also had limitations. Starting with only short-range submersibles, and with the need for pressure sealing, they were completely unable to reestablish communication with the surface world (where the short-lived Empire was becoming a legend, and then less than a legend). After a couple of generations, when contact might have been possible, they did not even try. The culture had developed a potent taboo; their stories told of how surface-dwellers were monsters, to whom Atlantis once brought great blessings, and who retaliated by butchering most of their benefactors and destroying their beautiful sky-cities. Seeking to discourage false hopes and wild plans, the founders of the society made it introverted and a little paranoid.

The Great Divide

Worse, Atlantis now had a society split in two, and the half best suited to venture out into the wider oceans was also the more oppressed and carefully kept servile. The founders had a natural dislike of the idea that all their children would be completely unlike themselves, and greater confidence in their abilities to make small biological changes rather than large. Later, they saw that the preservation of some kind of technological civilization would be a lot easier if some of its work could be conducted in air. Thus, they kept both schemes for adaptation running in parallel, producing both water-breathing humans and others who were well adapted to life in the deeps, but who still breathed air. A streak of narrow-mindedness and unthinking prejudice, and their origins in a strongly class-based

society, meant that they made the air-breathers the rulers, and the water-breathers a subservient worker caste.

In fact, over the following couple of millennia, the water-breathers, better suited to the situation, grew to become a majority. Nonetheless, the ruling class is made up of air-breathers, who have a monopoly on certain technologies. Actually, with the limited resources of the deep, both classes have to control their fertility, but expansion is much more often an option for the water-breathers than for their rulers. The wish to avoid being too far outnumbered is balanced, for the rulers, by the convenience of having more servants. All this creates the sort of social divide on which Victorian and superhero stories thrive. There's no revolution *yet*, but it is a plot option.

Menace From the Black Smoke

Several centuries after the Fall, in a period where the taboo against contact with others was taken seriously but relatively flexibly, Atlantis began sending expeditions out for short distances, to map the surrounding seas. Unfortunately, one of them stumbled across bad news.

The enemies of the ancient aliens who had constructed the floating islands were strange beings, radically unlike humanity. They were accustomed to extreme pressures, and their life-processes involved a great deal of sulfur chemistry. When they saw Earth, they disliked the place, but a brief survey had found one area which they considered almost pleasant; the volcanic "black smoker" vents on the deep sea bed, which harbor their own exotic forms of life.

Thus, when they left *something* to watch for their enemies returning to this world, they chose to leave it there. No one knows what it is. It may be a weird alien biological analog of a computer; it may be a sessile monster; it may even be one of their own kind, modified for this role. (In a steampunk game, the GM should try to keep the whole subject extremely vague, with hints that the whole thing may be supernatural, or at least firmly in the category of Things Man Was Not Meant To Know. In a supers game, it can be brought a little more into the foreground, as some kind of genetically engineered monstrosity – though it should still be played as hideously powerful. Probably nothing short of a nuclear weapon or equivalent would kill it for certain, and that should not be considered an option by and large.) Over the millennia, it had fallen into some kind of torpor, not even responding to events on Atlantis, but now, approached by intelligent beings, it reacted.

Whatever it is, it certainly has a brooding intelligence, but it does not have an active nature. It lets others come to it, and then it *uses* them. Suddenly, Atlantis found itself at war, with creatures that had, until recently, been its own trusted servants. Numbers, and advanced weapons, won in the end, but at a cost. The society acquired a whole new set of taboos.

Water-Breather Characters

Water-breathing Atlanteans look quite human, but have extensive metabolic changes and some minor but extensive physical modifications that make them fully adapted to life in the deep oceans (but vulnerable to certain physical conditions). Their racial template includes the advantages Gills (actually lungs that work with water *instead of* air, a 0-point feature; p. CI56), one level of Nictating Membrane (10 points; p. CI62), Night Vision (10 points; p. B22), Pressure Support at the 15-point level (p. CI63), 4 points of Temperature Tolerance (p. CI30) at the cold end of the scale, the skill of Water Speech (see below) at IQ (2 points), and the disadvantages Aquatic (-40 points; p. CI101), Careful (-1 point; p. CI86), Congenial (-1 point; p. CI89), Social Stigma ("second-class citizen," for -5 points), and a Weakness (p. CI106); they take 1d damage per minute from moderately strong acidic *or* alkaline chemicals in the water (above that taken by ordinary characters, if any), for -20 points. The mental disadvantages are learned rather than genetic, but are nearly universal among this race, and hence are included in the package. Playing a water-breathing Atlantean is a disadvantage worth -26 points. Note that these beings are *extremely* unlikely to have positive Status in Atlantean society, although Status 0 is common enough.

Languages

In addition to the main Atlantean language spoken by air-breathers, the water-breathers have developed "Water Speech," an intricate system of strange sounds and hand-signals to facilitate communication underwater. This is treated as a Mental/Average Language skill. A few air-breathers study and understand it, but it is hard to produce many of the sounds if one is not breathing water at the time.

The Dark Outcasts

Water-breather Atlanteans who have been changed by contact with the entity in the Black Smokers can be designed using the water-breather racial template, but with the addition of +1 ST (10 points), -1 IQ (-10 points), the advantages Faz Sense (10 points; p. CI55) and Sharp Claws (25 points; p. CI67), and the disadvantages Berserk (-15 points; p. B31) and Ugly Appearance (-10 points; p. B15). Also removing the Social Stigma (as they no longer operate in Atlantean society), this changes their "racial" cost to a -11 point disadvantage. Other changes may appear in individual cases; sometimes, whatever it is that lurks in the Black Smokers likes to *experiment.*

Stasis

Which may explain why Atlantis has been so quiet for the last several thousand years. Perhaps there has been unrest; perhaps there have even been renegades and outcasts and free-thinkers, venturing beyond the depths and inspiring surface-dweller legends of Oannes (p. 40), merfolk, and so on. But mostly, this undersea empire has done an impressive job of surviving, growing very slowly, and avoiding anything that might force it to change.

The City and Surroundings

The city of Atlantis has grown to consist of the remains of the three islands, with the unsealed sections long since either sealed and filled with air or cleared out and adapted for the use of the most favored of the water-breathers, and a sprawling mass of newer buildings, mostly but not all unsealed, all around this center. None of the air-filled buildings are pressurized these days (apart from one museum of ancient artifacts, which is held in superstitious dread). As pressurization is no longer necessary, they are filled with a mixture of oxygen and inert gases, extracted from the water by advanced machinery. As there is no need for streets, the layout is a nearly random jumble in many places, but the water above is full of swimming forms and the odd vehicle. Lighting comes from numerous lamps and hand-held torches, powered by orichalcum-based batteries.

Beyond the edge of the city, the Atlanteans run undersea farms to supply food. These sprawl out into the surrounding area, with few clear boundaries; to the west, the seabed rises toward a local undersea mountain range. A few water-breathers, who have largely detached themselves from Atlantean society, live almost as hermits in the mountains to the northwest, without routine access to advanced technology, they must sometimes get by without light, and other water-breathers claim that they have mastered strange disciplines of "blind sight." To the south, the ocean floor dips away, although there are mountains to the southwest, some of which are barely dormant volcanoes; this is the location of the dread Black Smoker vents, and is thus seen as a cursed region.

Dark Outcasts and Frontier Wars

Most Atlanteans would claim, in casual conversation, that the only outright war with the Things from the Black Smoke ended in total victory. This is untrue, and reflects one of the society's more dangerous taboos. In fact, a few of the creatures survived, and went into hiding. However, the entity which had created them from water-breather Atlanteans seems to have an instinctive aversion to failure, and any who tried to approach it disappeared – at least at that time.

On the other hand, it proved that certain physical changes that the entity had made to their forms were hereditable. This was fortunate, because among these changes, at least in some cases, were new senses which enabled these creatures to navigate in the dark of the depths without light. Hence was created an outcast race, who worship the entity as their creator-god, despite their fact that it spurns their worship – most of the time. Fortunately for the world at large, these beings are biochemically dependent on lifeforms and chemicals found only around the Black Smoker vents, and cannot venture far from those. Unfortunately for Atlantis, they can travel that far, or at least reach the borders of Atlantean territory.

This is why Atlantis still has the military that was first formed during that war. For centuries, it has patrolled the borders of Atlantean territory, fending off the cultist-marauders.

Romance Across the Divides

The division between the two categories of Atlantean is strong, but there is necessarily a great deal of contact, and both are, essentially, human. Very occasionally, across the centuries, the result has been romantic entanglements. It is also possible that visiting surface-dwellers will become emotionally involved with Atlanteans from one category or the other. Victorian adventure and modern superhero stories are prone to such things.

The first difficulty with such relationships is social. Atlantean society really will *not* approve, and it can be more than Victorian on such things (in any period). Even if this barrier can be overcome, the problems do not end there. Neither lover can live in the other's natural environment without technological aid. Atlantean technology can produce short-duration "aqualungs" to enable air-breathers to venture out into the water, but doing so except in emergencies or for very important purposes is considered vulgar and slightly demeaning. In a game where the practical problems of high pressure are being enforced to the full, surface folk will face an even greater problem; unlike air-breather Atlanteans, they have to worry about deep-ocean pressures, even *with* air supplies, and also perhaps about extreme cold.

In more-or-less realistic games, such a partnership is unlikely to be fruitful in a literal sense. The modified genes of each potential parent would just have too many differences, and Atlantean science has lost the ability to perform the necessary genetic tinkering to work around this. Worse, the result might be deformed and nonviable children. In more romantic or cinematic games, GMs may assume away such problems, with the relationship somehow producing air-breathing or water-breathing offspring. Alternatively, each of the distinct substantial features included in the racial templates might appear in an offspring or not. Of course, a water-breathing child who lacks full anatomical adaptation to life underwater (i.e. who has Gills but is not Aquatic) has a lifetime problem, let alone one of whom the converse is true. Still, such problems can be resolved technologically, and GMs who want to introduce interesting social-outcast Atlantean characters can add other advantages or improved attributes, by way of "hybrid vigor."

Atlantis in the Modern Age

The original technocratic aristocracy that ruled Atlantis has evolved over time into government by cabals of respected (air-breather) elders, military officers, and scholars. No one would be so crass as to say so out loud, but in fact, the basis of their rule is control of the city's technology, without which the Atlanteans would rapidly decline into barbarian nomads, forced upward as their light sources failed. Theirs is a highly structured, formal society, in which any kind of high position requires detailed knowledge of social symbolism and exquisite artistic judgment. An Atlantean born into the higher classes may spend an entire lifetime focused on subjects which any other sentient being would find utterly trivial; one from the lower classes is usually most concerned with advancing a fraction of a social level, or at least avoiding even the tiniest demotion.

The supreme authority in Atlantis is a hereditary position. The Autocrat is a direct descendent of Att-L'huss; the first was the highest-ranking noble to survive the sinking of the city. On the rare occasions in the past when there has been no clear heir, the cabals have quietly consulted the records of heredity and chosen a candidate. The aristocrats habitually obey the consensus; it would be impossible for the pocket empire to survive otherwise.

The current Autocrat is Atlarestes XXXIV (see p. 120-121), and his is more than an honorary or figurehead role. He has considerable executive authority, is effectively head of the Atlantean judiciary, and is consulted by the military over strategy, although he is accustomed to defer to their judgment. In a crisis, most Atlanteans would instinctively turn to him.

Contact!

Almost any way that Atlantis can appear in a game is likely to represent precisely such a crisis. The Atlantean taboo against contact with the outside world has long since faded to a kind of background assumption, but it is still strong; if surface-dwellers appear in the city, the majority reaction will be a kind of numb incomprehension, rather than immediate hostility. Direct hostility *will* eventually develop, though, as the citizens trawl legends of the terrible monsters who sank Atlantis up from their memories. The question must be what the Autocrat and other authorities will have done by then, and of course how the newcomers behave and what the circumstances of their visit might be. The language barrier will be an obvious problem in all this; Atlanteans are unaccustomed to learning new languages.

An extra complication is that the first Atlanteans to encounter the visitors might well be the military. On the other hand, this is not guaranteed; they mostly patrol the sea floor, whereas surface-world visitors are more likely to come from above. Also, surface-dwellers are likely to come in vehicles, making them look especially different from the non-technological outcasts. Still, the first meeting could well be tense.

If, as is quite possible, it arises from machinations by the Black Smoker entity, the initial circumstances could be particularly tense, with surface-world forces assuming the worst about anything they meet in the depths, and the Atlanteans perhaps particularly nervous. Dark Rapture (see p. 123) might deliberately set out to provoke conflict between Atlantis and the surface world, especially as he might well know enough to guess that the surface-dwellers could ultimately destroy the city with depth charges in an all-out war. On the other hand, the existence of a common enemy could eventually help make the contact more comfortable.

The GM is free to decide how much the most knowledgeable Atlanteans know about the true realities of their history, the true nature of the surface world, and the current state of surface-dwelling humanity. A game session could no doubt be spent, first working out how long characters need to learn the Atlantean language, then going through all sorts of "us-live-up-above" simplistic explanations, with much culture shock on both sides. However, it is probably simpler (and only slightly implausible) to assume that a few Atlantean leaders and scholars have a fairly clear and honest grasp of the true historical facts, and that, over the years, they have somehow obtained a partial understanding of current surface-world events from bold scouts, returned renegades, study of wrecks and debris drifting down, and so on. (They have kept this information secret from most of the population to avoid concern, confusion, or unrest.) If Oceania (pp. 122-123) is brought into play, she will be especially well-equipped to help. However, remember that even the most knowledgeable Atlanteans will have some degree of cultural prejudice, and will be extremely cautious; the first contact should be very tense and tricky.

Later Developments

If the first meetings between Atlantis and the surface world are not completely disastrous, regular communication may eventually be possible. This should not be rushed, however; technical difficulties aside, there are outcasts and monsters prowling the borders, thousands of years' worth of habitual isolationism to break down, and all sorts of practical concerns. The proud Atlanteans will not be at all happy to be told that they should follow surface-world diplomatic conventions, and visitors from above will have to put up with odd looks and open suspicion as they walk the chilly corridors of the undersea city. Atlantean ambassadors in the Court of St. James, or Atlantean membership of the United Nations, will take some effort to bring about.

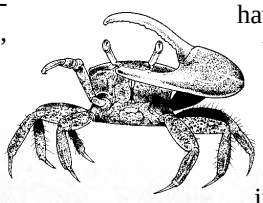
In fact, the experience of contact is likely to produce divisions in Atlantean society such as have not been seen since the Sinking. A few leaders and scholars will recognize opportunities (remember that their caution, while strong, is not based on personal bad experiences, and so may be overcome by logic or greed), but others may demand that the borders be closed. Study of surface-world history, with its spectacular achievements but also its wars and treachery, may encourage both sides, but mostly the isolationists. The military are habitually deeply suspicious of anything beyond the borders, but may become aware that they should really learn more about surface-dweller powers, either as a threat or as a source of new weapons. (PCs may find themselves having to keep ruthless surface-dweller arms merchants from moving in.) And it will eventually prove that Atlanteans are not *born* staid and paranoid; some youngsters will exhibit normal human levels of curiosity and wanderlust, and will seek to widen their horizons – legally or illegally, and sometimes, no doubt, unwisely.

Meanwhile, the disruption will upset the balance of Atlantis's class system. This may start with something as simple as visitors talking to water-breathers as equals, and develop from there to water-breathers wondering about a world in which farm workers and such breathe air. The arrival of rabble-rousers and surface-world political ideologies may come *after* the start of the trouble that they will nonetheless fuel. For that matter, a few confused ideologues may cause less trouble than surface-world sea captains, admirals, researchers, and civic engineers offering water-breathers work outside the regulated framework of their previous lives.

Using the Location in Other Periods

Swashbucklers-Era Games

Fitting this undersea Atlantis into a ***GURPS Swashbucklers*** game would yield a wild, pulp-flavored campaign of pirates and privateers facing strangeness on the fringes of the known world. The Atlanteans should be encountered in small groups, with their powerful culture mostly kept as a background mystery. They might be essentially peaceful, regarding the swashbuckling Europeans who have started venturing into the seas above their home as dangerous children to be avoided and turned away, or they might be arrogant and dangerous, "Pirate-Kings of the Under-Deep," with ancient dreams of empire returning to the fore. In either case, their city need not be too deep beneath the sea; it might be sited on the continental shelf, somewhere in the eastern Caribbean. Their technology should be played down, taking the form of a few enigmatic submarine vessels and perhaps some extraordinary melee weapons, but some of the Atlantean warriors could be swashbuckling fighters themselves, perhaps with their own weird style of blade combat. The Black Smokers could be dropped altogether, or played as monsters against whom PC buccaneers and Atlanteans could unite.



Cliffhangers-Period Games

1930s-vintage pulp fiction perpetuated much of the style and approach of Victorian adventure stories, so the steampunk version of Atlantis could appear in the wilder sort of ***GURPS Cliffhangers*** game. The "look," and some of the scientific doubletalk, might need to be updated somewhat (although pulp-SF authors persisted in invoking the luminiferous ether long after scientists had abandoned it), but the general approach could be much the same.

The other change over time is that visits to a '30s pulp Atlantis could be conducted using something more like real-world technology than those in a Victorian-era game; the period had developing submarine designs and some very deep expeditions by early bathyspheres.

Atlantean Technology

Atlantis is a setting built on weird science and bizarre technology; GMs should play up the strangeness and unfamiliarity of everything that PCs see in early encounters. However, this is *strangeness*, not superiority; highly skilled visitors should have a good chance of eventually understanding what they see.

The Tech Level

The Atlanteans are intensely proud of their science and technology; visitors may well find them quite insufferable. However, *intelligent* visitors may eventually recognize the truth which the Atlanteans would flatly deny, or rather consider meaningless; Atlantean scientific culture is stagnant, and may be in long-term decline.

For practical purposes, it can be considered to be at TL8 – or "TL(5+3)," perhaps, in ***GURPS Steampunk*** terms (see p. STM9); GMs may prefer to call it TL(5+1), to give TL5-trained visitors a chance to study it with merely heavy rather than overwhelming penalties. However, Atlantis has a severely restricted manufacturing base and an education system that emphasizes rote learning and stifles curiosity. There are substantial gaps and restrictions, and Atlantean scholars are completely ignorant of some areas of theory; GMs may assign a significantly lower Tech Level to some skills known to Atlantean characters.

The Basis

Remember that Atlantean "science" is actually based on a mass of scavenged and incompletely understood ultra-advanced alien technology, comprehended through trial and error and the use of education machines (now long defunct) designed for low-initiative slave workers. It is a credit to the early scholars that they learned enough to keep the civilization and its machines functional for thousands of years.

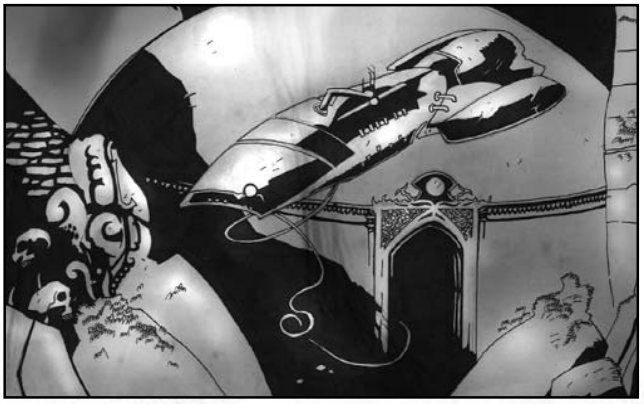
Orichalcum

Much of the key to all this is orichalcum, as previously described (p. 77). Whether this is an "ether-resonating element" or a "room-temperature superconductor" (with additional secondary useful properties in either case), it permits the construction of highly efficient electrical devices of various sorts. (In other words, it is an all-purpose technobabble keyword.) However, note that its usefulness pertains to high-power *electrical* systems. The Atlanteans have no special grasp of electronics, their control systems tend to be arrays of basic switches and rheostats, and the nearest thing they should have to computerized automation, in any game, should correspond to surface-world mid-TL6 systems. There *are* a few (very) advanced electronic systems around – alien-built devices, left over from the ancient past, which are viewed with far more uncomprehending awe by Atlanteans than they would be likely to receive from TL7/8 surface-world folk.

Power Supplies and Storage

The other key to Atlantean technological civilization is the "Power Rings"; three great circular devices, one in the heart of each of the sunken island-cities, which generate all the electricity that the society needs, even when they are called upon to recharge the storage batteries on several Atlantean vehicles at once. These are another alien legacy, tended by a small group of Atlantean acolyte-technicians.

In a steampunk game, these are "etheric flux dams"; built around complex structures of orichalcum, they derive power directly from variations in the magnetic field of the Earth. (The only small drawback is that they make magnetic compasses behave oddly in a fairly large area around the city.)



In a supers game, they are advanced (TL12+), highly automated fusion power plants, so robust and well-designed that they can run continuously for several thousand years without major maintenance, and with built-in systems that extract all the fuel they need from sea water.

In either case, human Atlantean engineers could not hope to recreate them. However, the Atlanteans *can* make power *storage* devices; specifically, the equivalent of TL8 Rechargeable Power Cells (see p. VE88). These are another application of orichalcum. (In steampunk games, they store power in the form of "etheric tension"; in the supers version, they are superconductor loops.) These are fairly rare (double the ***GURPS Vehicles*** cost for bookkeeping purposes, although Atlantis does not use its underdeveloped monetary system much for such things), but widely enough available to keep the military and other systems running.

Materials

Atlanteans know about metals aside from orichalcum, and can mine them from the seabed and refine them in moderate quantities, usually in air-filled facilities. However, they are fairly expensive to obtain in terms of resources and effort, so (as well as scrupulously recycling metal items) the Atlanteans prefer to use other structural materials where possible.

These include a certain amount of whalebone (mostly from scavenged carcasses, although the Atlanteans have been known to hunt the occasional whale), and soft organics derived from seaweeds. The standard building material is a rather dark stone, mostly basalt, quarried from exposed outcrops using high-tech tools. However, the Atlanteans have also mastered the creation of something like seacrete (p. 57), which should startle Steampunk characters and somewhat impress even 20th-century visitors.

Personal Arms and Armor

Orichalcum and ample electrical power enable Atlantean engineers to construct some quite impressive devices. However, the basic problems of underwater combat, combined with rampant cultural conservatism and a shortage of some types of chemical, makes the military's selection of weapons rather restricted. Furthermore, their "infantry" are actually swimmers, who find heavy armor or equipment unacceptably encumbering.

Water-breather troops thus wear pot-helms (made of metal fully equivalent to steel for practical purposes), and synthetic torso armor equal to leather, but no other protection. Air-breathers rarely find much need for armor, but there is a small, mostly honorary guard unit that wears pot helms, metal scale torso armor, and synthetic (leather-equivalent) limb protection, boots, and gauntlets. (See p. B210 for details of all these.)

The standard military offensive arm is a melee weapon, the "pulsator trident." This is a Fine-quality trident with points that vibrate at a very high rate, shattering armor and inflicting deadly wounds (actually giving it the vibroblade option, p. UT62, although the Atlantean version is a little more cumbersome than the ***GURPS Ultra-Tech*** rules would require). It must be used two-handed with Spear skill, doing thr+5+1d impaling damage with reach 1,2, and has a Min ST of 11. Targets are at -1 to dodge, but +1 to block or parry it. Divide the DR of any armor struck by the trident by 2.5. (If the vibration is not activated, it does only thr+5, and DR is *doubled* rather than reduced.) Skill use and effects are subject to the usual underwater problems (see pp. 61-62), including basic damage being reduced by one-third, but the extra 1d damage (for the vibration) is *not.* Turning on the pulsator effect, readying the weapon after an attack or parry, and switching grips for a different reach, all take one round. A pulsator trident weighs 7 lbs., and would have a nominal cost of $1,000, if the question arose; its energy charge lasts for 8 minutes of continuous use.

A pulsator trident could be mistaken for an over-ornate archaic weapon at a casual glance; when it is switched on, anyone within 1 hex in air or 5 hexes in water will note a faint hum on a Hearing roll. Anyone parrying or being parried with a pulsator trident will guess that there is something unusual about it on an IQ roll.

All that aside, Atlantis sees few weapons or even blades larger than a small knife. However, there *may* be all kinds of exotica in secret, half-forgotten armories, from archaic orichalcum-bronze swords to alien superweapons . . .

Characters

The Autocrat Atlarestes XXXIV — 82 points

Age 57; 6'2"; 155 lbs. A tall, straight-backed, fairly slender Atlantean, his wavy hair and beard all turned gray, with an intense and slightly melancholy gaze, usually wearing plain but elegant robes and an orichalcum circlet.

Attributes: ST 9 [-10]; DX 10 [0]; IQ 13 [30]; HT 11 [10].
Speed 5.25; Move 5.
Dodge 5; Parry 5.

Advantages: Air-Breather Racial Package [13]; Charisma +1 [5]; Status 6 [25]; Very Wealthy [30].

Disadvantages: Age [-21]; Careful [-1]; Chauvinistic [-1]; Curious [-5]; Hidebound [-5]; Sense of Duty (To Atlantis) [-10].

Quirks: Has trouble thinking of his daughter as his heir, though he doesn't dislike her; Likes reading and stories, provided that they aren't *too* unusual; Underestimates military problems. [-3]

Skills: Administration-15 [6]; Appreciate Beauty-11 [2]; Area Knowledge (Atlantis)-13 [1]; Bard-13 [1]; Detect Lies-11 [1]; Heraldry-13 [2]; Law-13 [4]; Leadership-13 [1]; Naturalist-10 [1/2]; Savoir-Faire-13/15 [0]; Scuba-12 [1]; Seamanship-12 [1/2]; Spear-11 [4]; Tactics-11 [1].

(Note: these skills are learned at whatever the GM determines is the TL of Atlantis. "Scuba" skill represents training in the use of Atlantean underwater breathing equipment. Skills such as Heraldry and Savoir-Faire here relate to the extremely fine details of *Atlantean* society; Atlarestes would face *large* unfamiliarity penalties anywhere else.)

Languages: Atlantean (Native)-13 [0].

The current ruler of Atlantis is a commanding figure, but age is catching up with him, and he may give surface-world folk the impression that he is the embodiment of Atlantean social rigidity.

This is partly true and partly unfair. Atlarestes *is* a product of his society, and years of enforcing old rules and old ways have left him almost incapable of adjusting to novelty. However, he was not always thus. In his youth, before he inherited the throne, he served briefly with the military (though their leaders carefully kept him away from real

danger), and read as widely as Atlantean libraries permitted. Contact with visitors from the surface world will bring some of this back, and he will be quicker than some of his courtiers to believe their stories and listen to their claims. His genuine intelligence should soon become clear.

However, his nature is not all to the advantage of surface-world PCs. To begin with, his reading emphasized the superiority of Atlantis and the dangers of those legendary other beings, and he will have to work to overcome instinctive prejudice and a lot of reflexive caution on behalf of Atlantis. In fact, he will not even try to overcome these attitudes unless given a good reason. And second, having spent a lifetime in a role that he does not really like or enjoy, having lost his wife years ago, and having an only child who (he considers) alternates between pestering and sulking have left him slightly irascible and egocentric. He may recognize new problems, but he will try to bulldoze through most of them using his authority and force of personality. Persuading him that new problems require new solutions could be an adventure in itself; PCs may eventually start looking for ways to work around him.

Princess Thalseis
132 1/2 points

Age 21; 5'7"; 130 lbs. A lithe, dignified, dark-haired young woman, usually in Atlantean court robes.

Attributes: ST 8 [-15]; DX 12 [20]; IQ 13 [30]; HT 10 [0].
Speed 5.5; Move 5.
Dodge 5.

Advantages: Air-Breather Racial Package [13]; Ally Group (Court Faction; five 75-point characters, 12 or less) [20]; Beautiful [15]; Cool [1]; Reputation +1 (As a rising star, among ambitious Atlanteans) [2]; Status 5 [20]; Strong Will +2 [8]; Wealthy [20].

Disadvantages: Impulsiveness [-10]; Reputation -2 (As a tricky plotter, among traditionalists, 10 or less) [-2]; Selfish [-5]; Sense of Duty (To royal good name) [-5].

Quirks: Pesters her father mercilessly, but *only* in private; Respects boldness in others, and treats caution as a joke. [-2]

Skills: Appreciate Beauty-13 [8]; Area Knowledge (Atlantis)-14 [2]; Bard-13 [2]; Diplomacy-12 [2]; Heraldry-14 [3 1/2]; Intimidation-11 [1/2]; Law-11 [1]; Leadership-11 [1/2]; Savoir-Faire-14/16 [1]; Stealth-12 [2].

(Note: skills such as Heraldry and Savoir-Faire here relate to the extremely fine details of *Atlantean* society. Thalseis would face *large* unfamiliarity penalties anywhere else.)

Languages: Atlantean (Native)-13 [0].

The daughter and heir presumptive of the Autocrat Atlarestes is as strong-minded as she is aristocratically handsome. Note that she has *not* been formally appointed the Autocrat's heir yet; if and when this does happen, she will gain the Heir advantage. However, although she would certainly inherit if the Autocrat were to die suddenly today, it is just possible (if unlikely) under Atlantean law that someone else will eventually be placed above her in the order of succession, and to her annoyance, her father seems to be hedging, and has not trained her much in the duties of the ruler.

This, combined with her personality, is leading her into slightly dangerous ways. She is not seriously considering any sort of coup, and she has enough fondness for her father not to wish him harm, but she is accumulating a personal following. In itself, this would probably never lead to serious complications, but any major upset to the established order (such as contact with the surface world) could create enough instability for Thalseis or her followers to be tempted to more extreme action, perhaps leading in turn to danger for everyone. She will *not* deliberately endanger the city, and will try very hard to protect it if necessary, but she may accidentally cause a lot of trouble.

However, she is not a bad person, and she is probably right to think that her father should be looking more to the future. She is capable of serving as romantic interest for male PCs, especially in Victorian or pulp-era games; after all, characters from such a background should understand why she is so determined to maintain her social position.

Oceania 453 points

Age 37; 5'9"; 150 lbs. An athletic-looking Atlantean woman with a thoughtful expression, usually dressed fairly plainly or in Atlantean military garb, but always with exotic devices or weapons close to hand.

Attributes: ST 10 [0]; DX 13 [30]; IQ 16 [80]; HT 14 [45].
Speed 6.75, Move 6.
Dodge 7; Parry 9.

Advantages: Air-Breather Racial Package [13]; Ally Group (personal following of 12 water-breather soldiers, 75-point characters, 9 or less) [20]; Breath-Holding 2 [4]; Combat Reflexes [15]; Comfortable Wealth [10]; Composed [5]; Enhanced Parry (pulsator trident) [6]; Fit [5]; Gadgeteer [25]; Less Sleep 3 [9]; Lightning Calculator [5]; Military Rank 2 [10]; Reputation +1 (Bold if unconventional defender of Atlantis; to everyone) [5]; Single-Minded [5]; Status 2 [10].

Disadvantages: Enemy (Dark Rapture and his minions, as a medium group with some super-powered members, 6 or less) [-15]; Extremely Curious [-10]; Sense of Duty (To Atlantis) [-10]; Truthfulness [-5]; Uncongenial [-1]; Undiscriminating [-1].

Quirks: Doesn't smile when she's working; Eats formally if at all possible; Likes raw fish delicacies; Switches mannerisms completely according to circumstances (a scientist in the laboratory, a warrior in battle, a polite outsider at court); Turns silent in combat (not used to opponents who she can talk to). [-5]

Skills: Area Knowledge (Environs of Atlantis)-16 [1]; Armoury (Body Armor)-15 [1]; Armoury (Electrified Weapons)-15 [1]; Armoury (Pulsator Weapons)-15 [1]; Armoury (Vehicular Weapons)-15 [1]; Biochemistry-12 [1/2]; Body Language-13 [1/2]; Brawling-14 [2]; Breath Control-14 [2]; Camouflage-15 [1/2]; Chemistry-14 [1]; Ecology-14 [1]; Electronics (Weapons)-14 [1]; Engineer (Atlantean Electrical Tech)-18 [8]; Engineer (Vehicles)-15 [2]; Geology-13 [1/2]; Leadership-14 [1/2]; Mathematics-13 [1/2]; Mechanic (Atlantean Electrical Motors)-16 [2]; Metallurgy-15 [2]; Navigation-13 [1/2]; Physician-18 [8]; Physics-14 [1]; Powerboat-14 [4]; Research-16 [2]; Savoir-Faire-16/18 [0]; Scuba-16 [2]; Seamanship-15 [1/2]; Shipbuilding-15 [2]; Spear-15 [8]; Swimming-16 [8]; Tactics-14 [1].

(Note: these skills are learned at whatever the GM determines is the TL of Atlantis. "Scuba" skill here represents training in the use of Atlantean underwater breathing equipment.)

Languages: Atlantean (Native)-16 [0]; Builder Language-15 [2]; "Water Speech"-15 [1].

Super Equipment: Protective Suit: DR 12, Gills (oxygen mask), and PD 3, all Breakable (15 hit points, uses own DR, -15%), Can Be Hit (-4 to target weak points on suit, -15%) [85]; Electrified Gauntlet: Shock, 3d fatigue damage in Close Combat, attack is at DX+2, Breakable (DR 12, 8 HP, -15%), Can Be Hit (-6 to target gauntlet, -10%) [30]; Sonic Wand: Sonar Vision, Breakable (DR 8, 4 HP, -15%), Can Be Hit (-6 to target wand, -10%), Can Be Stolen (Must win contest of ST, -20%) [14].

Oceania is an air-breather with an exceptional mental power for one of her race: curiosity. Born into a family of scholars, she grew up determined to study. However, as she advanced, she found herself forever discovering gaps and contradictions in what she learned. True, most of them were small, even negligible, but they irritated her.

And so she set out to resolve them. Most of her colleagues saw this as eccentric; to some, it verged on disrespect, even blasphemy. However, no one had quite managed to stop her before the year which saw the fourth return of Dark Rapture. (See p. 123.)

This time, the insane villain resorted to greater cunning than ever before, poisoning the Atlantean fish-farms and sending agents to sabotage the Atlantean vehicle fleets. Oceania helped fight back, working tirelessly to cure the sicknesses, repair the damaged craft, and improve defenses. She even piloted a modified shark-craft in the final battle.

With her eccentricities now generally tolerated, Oceania attempted to return to her research. However, new problems, not all of them involving Dark Rapture, forever seem to plague her. She has had to develop her combat skills, physical condition, and armory almost as much as her scientific knowledge. In effect, she is Atlantis's resident superheroine.

This, of course, means that she is likely to become involved in any scenario involving arrivals from the surface world. Thanks to her broad-minded curiosity, she will probably prove friendly to such people, but her first loyalty *is* to her homeland. If she suspects a threat to Atlantis, everyone will see a dedicated scientist transformed into an obsessive warrior.

If she is expecting combat, Oceania wears her lightweight personal armor and "electrified gauntlet," and often carries a "wand" which is actually a sonar detector. She may also have further gadgets; GMs can give her whatever they like and a scenario requires, provided that it is consistent with Atlantis's tech level. She pilots a personal submersible (p. 125) and wields a pulsator trident (p. 120).

Dark Rapture 700 points

Age 55 (physically mid-20s); 5'11"; 165 lbs. Formerly a typical male Atlantean, now warped by biochemical mutations, with dark gray skin with an oily sheen and faint traces of scales, thin blue-black hair (but beardless), pale green eyes with slit pupils, sharp-pointed teeth, and webbed, clawed hands and feet; usually dressed in a few ragged scraps of black fabric.

Attributes: ST 14 [45]; DX 14 [45]; IQ 15 [60]; HT 15 [60].
Speed 7.25; Move 7.
Dodge 8; Parry 11 (Brawling).

Advantages: Ally Group (personal following of 18 75-point Dark Outcasts, 12 or less) [40]; Ambidexterity [10]; Amphibious [10]; Cast Iron Stomach [15]; Charisma +1 [5]; Combat Reflexes [15]; Cool [1]; DR 12 [36]; Extra Life ×4 [100]; Faz Sense [10]; Fit [5]; Gills [10]; Hard to Kill +5 [25]; High Pain Threshold [10]; Immunity to Disease [10]; Less Sleep 5 [15]; PD 3 [75]; Patron (The Black Smoker entity, as an extremely powerful individual with special abilities, 9 or less) [20]; Pressure Support [15]; Rapid Healing [5]; Sharp Claws [25]; Temperature Tolerance 5 [5]; Unaging [15]; Venom (2 levels, poisonous, delivered by bite) [30].

Disadvantages: Bully [-10]; Careful [-1]; Chauvinistic [-1]; Enemy (Defenders of Atlantis, as a large group, 6 or less) [-15]; Obsession (The destruction of Atlantis) [-15]; Reduced Manual Dexterity -1 [-3]; Reputation -4 (In Atlantis, as the embodiment of evil) [-10]; Sadism [-15]; Ugly Appearance [-10]; Unnatural Feature (Slit-pupil eyes) [-5]; Unnatural Feature (Scaly, oily skin) [-5].

Quirks: Curious; Disdains material wealth; Rarely raises his voice. [-3]

Skills: Acrobatics-13 [2]; Area Knowledge (Environs of Atlantis)-16 [2]; Biochemistry-15 [8]; Brawling-15 [2]; Camouflage-15 [1]; Chemistry-13 [1]; Demolition-14 [1]; Ecology-13 [1]; Escape-15 [8]; First Aid-15 [1]; Fishing-15 [1]; Geology-13 [1]; Interrogation-15 [2]; Intimidation-17 [6]; Leadership-17 [4]; Navigation-14 [2]; Physiology-13 [2]; Poisons-17 [8]; Psychology-14 [2]; Scrounging-15 [1]; Spear-13 [1]; Stealth-16 [8]; Stone Knapping-14 [1]; Tactics-15 [4]; Underwater Demolition-15 [2].

(Note: these skills are learned at whatever the GM determines is the TL of Atlantis.)

Languages: Atlantean (Native)-15 [0]; Builder Language-14 [2]; "Water Speech"-15 [2].

Once, many years ago, there was an air-breather Atlantean who displayed a most unusual curiosity. Unfortunately, there was a rather strange and perverse side to his nature, which turned what could have been a beneficial (if socially tricky) interest in the world into something much more dangerous.

Indeed, some would say it proved fatal.

For this young scholar ventured too close to the Black Smoker vents in a small transport craft. No one can say what he was looking for, but perhaps he found it; when he returned to Atlantis, it was without need for a vehicle, and at the head of a dangerously organized pack of Dark Outcasts. Fortunately, even with him at their head, this band was rash and ill-organized, but their leader not only escaped from his defeat at the hands of the military, he *learned.* He has been back many times over the years since, more deadly every time. Even the ingenuity and skill of Oceania may not be enough to parry his next attack.

Dark Rapture is a menace who will lurk on the edge of any continuing plot involving Atlantis. Worse, he may well turn his attention to the surface world. He is a master villain through and through, well able to make trouble for any group of heroes, with substantial resources as well as unique personal powers. Where he goes during the months or years when he disappears is unknown; Atlanteans might theorize that he returns to his "creator" in the Black Smokers, to report, commune, and perhaps be granted new mutations. In melodramatic campaigns, he might well be a former teacher (or lover) of Oceania's, or an old friend of Atlarestes – perhaps even a relative of one or the other. Atlanteans would see him as an object lesson in the dangers of curiosity.

Adding Magic or Psionics

For GMs who want to increase the weirdness level in this version of Atlantis, it's easier to add psionics than spell-based magic. In fact, the application of psionic powers could be yet another thing to do with orichalcum, and might even help explain some details of Atlantean history. Such powers would surely be a monopoly of either the royal family or an austere air-breather "priesthood," who use them to monitor society and keep the water-breathers in line.

In a steampunk version, psychic powers probably work through the ether, and so orichalcum can be used to build devices that either block psychic effects or amplify them. In a supers game, orichalcum could similarly be said to have a molecular structure which acts as a superefficient conduit for psionic power as well as electricity. In either case, orichalcum-alloy helmets and armor might provide some level of Psionic Resistance (perhaps only effective against telepathy), while psychokinetic Atlanteans ("Adepts of Mind Over Matter" in steampunk-psychic terms) might wield orichalcum-laced weapons which they can reinforce with their mental powers, making them the equivalent of Very Fine quality (+2 damage, never break when used to parry). This would be a skill available to characters with the power of Psychokinesis; activating the effect would require a round of concentration, and it would last a number of rounds equal to three times the amount the skill roll was made by. The largest weight of orichalcum that a character could enhance would be equal to five times his power level in pounds. When the islands originally sank, a number of psychokinetic adepts worked together to reinforce the orichalcum-plated walls of various Atlantean buildings, enabling them to survive the onrush of water and the stress of the plummet into the deep. Needless to say, the creatures of the Black Smokers would also have to have their own twisted psychic powers.

Spell-based magic does not really fit the "weird science" feel of the setting, although it would at least help paper over some of the weirder features of the whole thing. It would again certainly have to be a monopoly of a small group. Perhaps the alien builders were fighting *magic-wielding* enemies, and the Black Smoker entities are the only spell-casting force in this ocean, and are dark indeed?

Vehicles

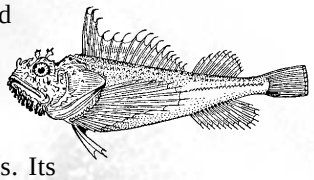
Atlantis constructs undersea vehicles using a combination of robofacs and advanced "hand-craftsmanship." The basic designs were established centuries ago, and no Atlantean (except Oceania) would think of changing them. See p. 64 for the meanings of items in the details below.

In ***GURPS Vehicles*** terms, Atlantean craft are built at TL8. They do *not* have submersible hulls, as they are not built to withstand pressure (their internal pressure is maintained the same as external), and they lack ballast tanks (they are designed to have neutral buoyancy). They are sealed, but only those which have both air-filled and water-filled sections have compartmentalization. As the cost of a submersible hull usually covers underwater control systems, and these craft have to maneuver underwater *more* than most submarines, 20% of their propulsion systems' thrust is considered to be diverted to lateral jets rather than forward movement. They have banks of TL8 rechargeable power cells and TL8 MHD tunnel turbojets (referred to as "ethero-magnetic hydro-motors" in steampunk games). Other systems tend to the primitive, with TL5-standard mechanical controls and no communicators or sensors. TL7-standard searchlights are sometimes fitted; these have severely restricted range underwater (how much they are affected depends on local conditions), but they can be very useful at short ranges. Air-filled compartments have TL8 life support, although this is often switched off on short trips; the systems are noisy, and the air in the passenger cabin is usually enough for a few minutes. Water-breather sections, which are flooded at all times, are treated as weighing 62.5 lbs./cf, occupied or not. All Atlantean craft are short-occupancy.

Costs are calculated for comparison only; although Atlantis has some limited internal trade, construction of this type is authorized and managed by royal command.

Atlantean "Carriage"

This is a small non-military transport, designed to carry up to six air-breather Atlanteans (including the pilot). There is no airlock; the vehicle is intended just to shuttle between air-filled buildings. It has 18 hours of endurance at maximum speed, or slightly less if the life support system is switched on. Most vehicles of this design are heavily decorated and embellished; some royal transports are downright gaudy.



Design Notes

This design has mediocre lines. Its armor may seem excessive, but in fact mostly takes the form of cheap metal plating that serves as ballast, keeping this air-filled craft from floating toward the surface.

Subassemblies: Body +4.
Power & Propulsion: 4500 kWh power cells; 250 kW MHD hydrojet.
Occupancy: 1 RCS, 5 RS *Cargo:* 10 cf

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	4/80	4/80	4/80	4/80	4/80

Equipment
Body: Limited life support (6 man-days).
Statistics
Size: 7'×5'×10' *Payload:* 1,400 lbs. *Lwt.:* 21,700 lbs.
Volume: 347 cf *SizeMod:* +4 *Price:* $225,600

HT: 12 *HP:* 1800 [Body]

uSpeed: 13 *uAccel:* 4 *uDecel:* 5 *uMR:* 0.25 *uSR:* 4

Atlantean Military Shark-Craft

This small troop transport patrols the borders of Atlantean territory; the military have several more in reserve than they normally deploy. It has an air-filled compartment for the pilot and up to three officers or observers, and a water-filled section for up to a dozen troops. It is distinctly over-armored for fighting spear-armed barbarians, but Atlanteans tend to err on the side of caution, especially when the Black Smoker entity may be involved, and in any case the extra mass is needed to preserve its neutral buoyancy. The Shark-Craft has 30 hours endurance at maximum speed; the endurance is reduced if life support is engaged. The name comes from the somewhat shark-like (if bulbous), streamlined hull configuration.

Design Notes

This design has submarine lines, with an expensive-quality frame, standard-quality armor, and compartmentalization. The airlock permits air-breather crew or passengers to leave the vehicle when "in the field," if necessary.

The torpedo tube has a TL6-equivalent slow autoloader, giving it SS 14 and RoF 1. It fires standard Atlantean mini-torpedoes (see below), of which the Shark-Craft carries 12. The twin searchlights are often used when searching for barbarian infiltrators or to illuminate the scene of a fight.

Subassemblies: Body +4.
Power & Propulsion: 15,000 kWh power cells; 500 kW MHD hydrojet.
Occupancy: 1 RCS, 3 RS, 12 CS *Cargo:* 10 cf

Armor	**F**	**RL**	**B**	**T**	**U**
Hull:	4/82	4/82	4/82	4/82	4/82

Weaponry
44 mm slow autoloader torpedo launcher [F].

Equipment
Body: One-person airlock; Limited life support (12 man-days); 2 searchlights (nominal 1-mile range, reduced by water conditions).

Statistics
Size: 7'×7'×25' *Payload:* 1,000 lbs. *Lwt.:* 48,700 lbs.
Volume: 780 cf *SizeMod:* +4 *Price:* $978,626

HT: 12 *HP:* 3600 [Body]

uSpeed: 24 *uAccel:* 3 *uDecel:* 5 *uMR:* 0.25 *uSR:* 2

Oceania's "Chariot"

This is the least conventional vehicle in Atlantis, built by the empire's scientist-heroine (see pp. 122-123) as a personal transport, research craft, and, when necessary, combat platform. It looks deceptively innocuous, but the slim, rounded design is efficiently streamlined, and the on-board energy cells are more than enough to power the propulsion system and just about any equipment Oceania might install. (The "cargo" space is frequently crammed with her inventions.) An external robot arm allows her to investigate some things without having to don breathing apparatus. The "chariot" has 72 hours' endurance at maximum speed; the endurance is reduced by the use of other equipment.

Design Notes

This design has submarine lines, with an advanced frame and expensive-quality armor. The TL8-equivalent torpedo launcher fires standard Atlantean mini-torpedoes (see below); it has SS 14 and RoF 3, and the magazine holds 24 shots.

The robot arm is mounted just under the bow of the vessel, and folds flat against the hull when not in use. Its ST 15 motor uses 0.075 kW from the energy banks when employed at full strength.

Subassemblies: Body +5, Arm -4.
Power & Propulsion: 108,000 kWh power cells; 1500 kW MHD hydrojet.
Occupancy: 1 RCS, 2 RS *Cargo:* 40 cf

Armor	**F**	**RL**	**B**	**T**	**U**
Body:	4/155	4/105	4/105	4/130	4/130
Arm:	4/20	4/20	4/20	4/20	4/20

Weaponry
1× 44 mm light automatic torpedo launcher [F].

Equipment
Body: One-person airlock; TL8 compact fire suppression system; Limited life support (12 man-days); Searchlight (nominal 1-mile range, reduced by water conditions).

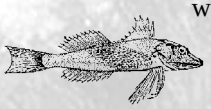
Statistics
Size: 8'×6'×60' *Payload:* 1,400 lbs. *Lwt.:* 87,650 lbs.
Volume: 1,400 cf *SizeMod:* +5 *Price:* $6,597,582

HT: 12 *HP:* 4800 [Body] 3 [Arm]

uSpeed: 30 *uAccel:* 5 *uDecel:* 2 *uMR:* 0.1 *uSR:* 3

Atlantean Torpedo

The best vehicle weapon that Atlantean engineers have designed is an unguided 44 mm short-range anti-personnel torpedo with a 5.5-ounce high-explosive warhead – rather feeble by most standards, but more than adequate to deal with the military's usual opponents. However, it is fairly difficult for Atlantean science to synthesize explosives or chemical fuels, and Atlanteans are loath to use orichalcum-based power cells in disposable devices. Hence, warhead costs (for bookkeeping purposes) are multiplied by 10, and the torpedo uses compressed air (in ***GURPS Vehicles*** terms, a TL6 motor) for propulsion.



The torpedo has a speed of 20 yards/second, and endurance (running time) of 2.5 seconds, giving it a range of 50 yards. The warhead does 15d explosive concussion damage, and also 4d fragmentation (see p. B121-122), but in water, the fragments spread only 7 yards from the blast point. Each torpedo weighs 4.1 lbs. and costs $76 for bookkeeping purposes.

Torpedoes are mostly used to break up large groups of enemies or destroy their cover before the water-breathing "infantry" move in. Given the dangers of underwater shockwaves, the troops habitually remain within their transports until all torpedo fire is complete; although Atlantean vehicle armor can withstand the shock of a nearby explosion, such a close-quarters blast can leave a Shark-Craft ringing like a bell.

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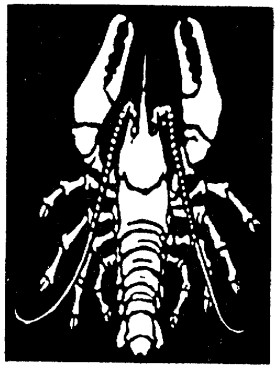

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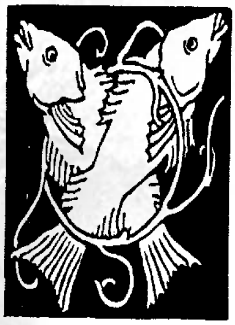

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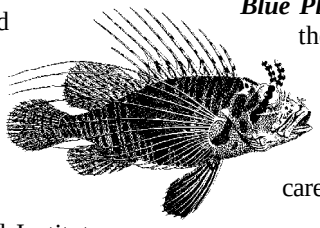

Fiction

Merely listing all the novels and stories which have involved Atlantis, let alone those which mentioned Lyonesse, or Ys, or Lemuria, would take more space than this book has available; covering all those which explore themes such as lost lands or undersea life would require a book in itself. Specific instances are mentioned in the body of this book; many others can be found in any bookshop or library.

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