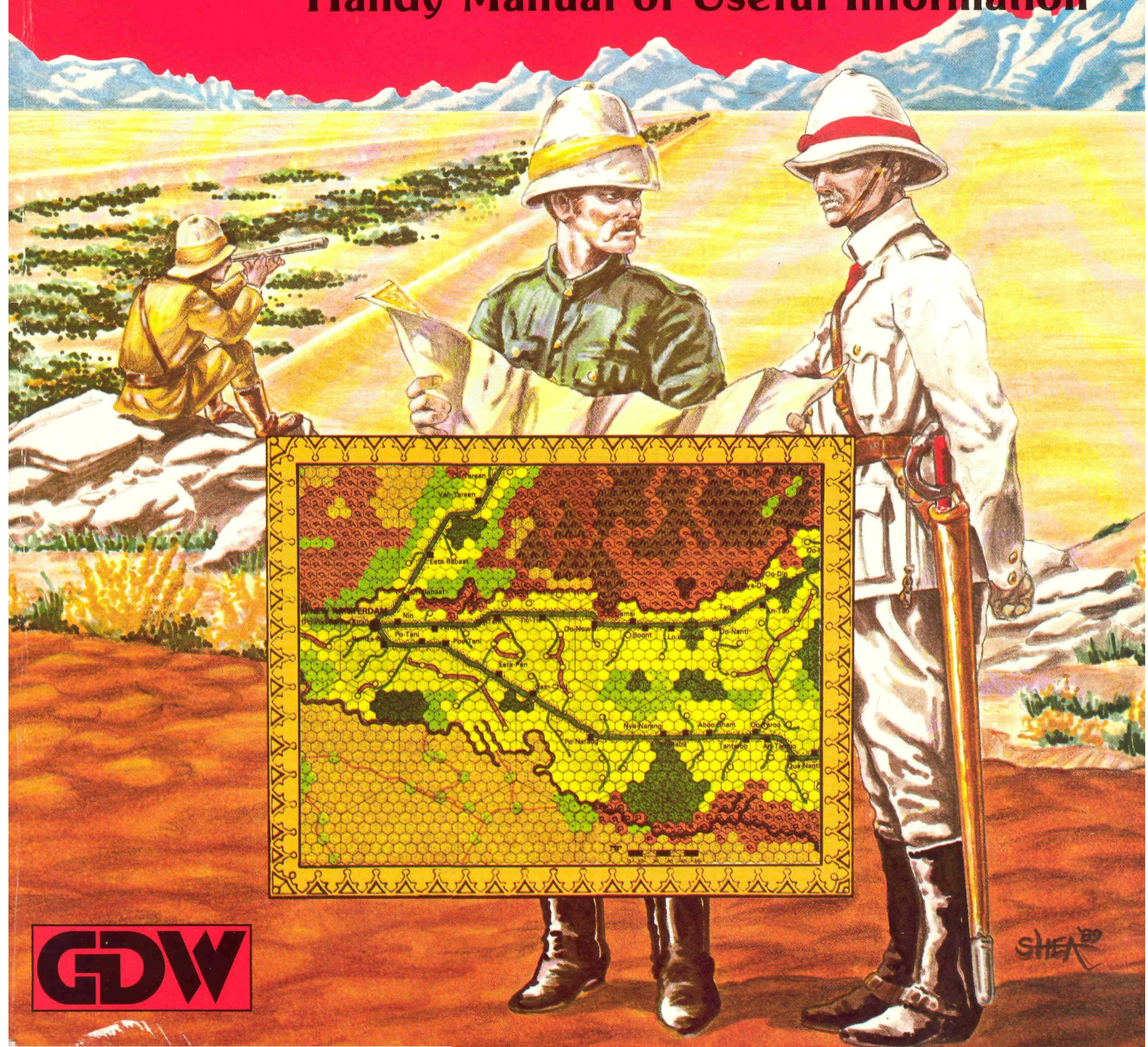




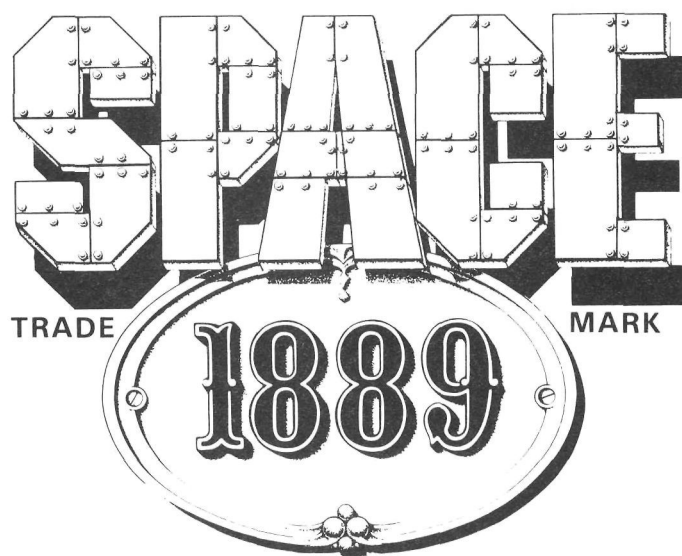
FRANK CHADWICK

CONKLIN'S ATLAS *of the* WORLDS

and
Handy Manual of Useful Information


GDW

SHEA '83



CONKLIN'S ATLAS *of the* WORLDS





CONKLIN'S ATLAS *of the* WORLDS

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Space: 1889 is GDW's trademark for its science-fiction role-playing game of adventure in a more civilized time.

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ERRATA: pgs. 50-51

Fezar should be **Fezan**

Aif should be **Air**

Wutia should be **Wulia**

The town of Masena is partially obscured by the Shari River

Durben should be **Durban**

The labels for Zanzibar(the island) and Dar-es-Salaam (the port) are reversed



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Table of Contents

Introduction	4	Venus	14	Mars	60
Ship Combat	5	Lizard-Men.....	14	The Coprates Valley.....	60
Chronology	6	Colonies.....	18	The Swamps of Gorklimsk....	62
The Solar System	8	Native Life.....	30	High Martians.....	66
Mercury	10	Mysteries.....	32	Languages.....	68
The World River.....	10	Earth	34	The Riches of Mars.....	70
Travel.....	12	Steamship Travel.....	34	Cities of Mars.....	72
Princess Christiana Station....	12	Europe.....	38	Luna	76
The Riches of Mercury.....	12	North America.....	42	Moon Men.....	76
		South America.....	44	Water Cycle.....	78
		Southeast Asia.....	48	Ship Combat.....	80
		Africa.....	50	City of Light and Science....	80

INTRODUCTION

WELCOME TO **Conklin's Atlas of the Worlds and Handy Manual of Useful Information, or Conklin's** for short. It is an extensive, but by no means exhaustive, collection of maps and essays concerning the worlds of the inner Solar System. It has been assembled with the adventurer and referee in mind, and should provide both the inspiration and background for dozens of adventures. As we assembled **Conklin's**, we had several specific goals in mind.

First, we deliberately limited our coverage to themes of interest to the adventurer. For example, there is extensive coverage of Africa in the book, but hardly anything concerning Europe, as Africa was judged to be a more fertile adventure area than Europe.

Second, we wished to avoid needless repetition. South America has many of the same attractions to adventurers as does Africa, but we limited our coverage to a general overview rather than a detailed treatment. Referees should be able to craft fairly good adventure settings in South America based on our descriptions of Africa, and they are encouraged to do so.

Third, we wished to provide certain minimum information necessary to open up the various worlds to referee-generated adventures. You should now have that necessary minimum framework upon which to begin building on each of the worlds covered.

Fourth, we wished to expand our definitions of the world without limiting the referee. While trying to give you adventure ideas, we have inten-

tionally left some information vague. The true location of King Solomon's Mines, and in fact whether or not they even exist, is entirely up to you, as referee.

So what you have in your hands is a potpourri of information on a variety of subjects. Some of it is presented in the form of background information for players. Other information takes the form of supplementary rules, equipment statistics, encounter charts, and animal descriptions for the referee's use. Some of it—the sidebar on the next page concerning travel on the Red Sea, for example—is purely to help build atmosphere. But we hope that all of it will prove useful in running your **Space: 1889** campaign.

BIBLIOGRAPHY

ALTHOUGH **SPACE: 1889** is a work of imaginative fiction, the world in which it is set was not made up from whole cloth, and we have made every attempt to remain faithful to the politics and geography of 19th-century Earth (except when it

interfered with a good adventure possibility). Although information was drawn from a wide variety of sources, the following four books were extremely handy reference works and are highly recommended to referees as sources of excellent background information.

- *The Odyssey World Atlas*. Golden Press, New York, 1966.

- Kinder, Hermann and Werner Hilgemann. *The Anchor Atlas of World History*. Anchor Books, Garden City, NY, 1978.

- Grun, Bernard. *The Timetables of History*. Simon and Schuster, New York, 1979.

- McEvedy, Colin and Richard Jones. *Atlas of World Population History*. Penguin, Bungay, Suffolk, 1978.

MAP KEY

THE FOLLOWING terrain symbols are used on the maps throughout the book. Separate terrain keys are provided with the maps which have unique symbology.



Mountain



Escarpment



Fort



Bog



Marsh/Swamp



Open Sea



Forest



Hills



Desert



Grand Canal



Road



Railroad



Icecap



Glacier



Minor Road



Track



River



Canal Locks

Sand Sea
(with desert)Steppe, Plains,
GrasslandsSettlement,
Village

Town

Clear,
Cultivated

Ruins



Dead Canal



Small Canal

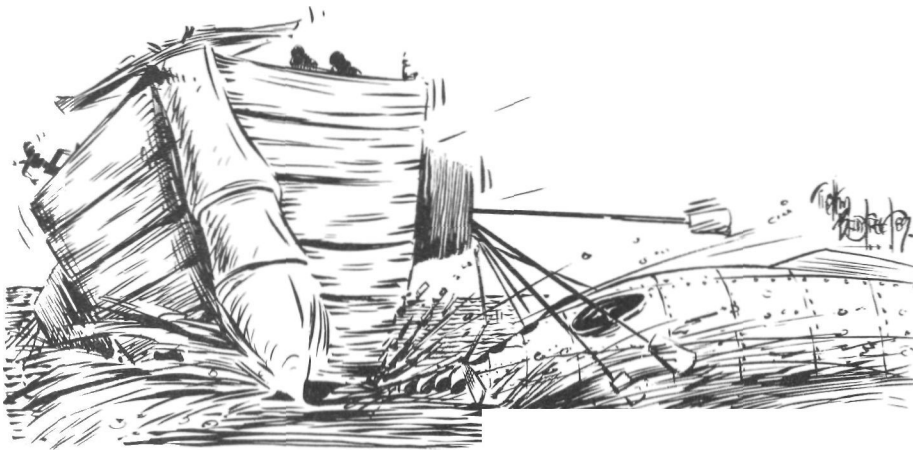
SHIP COMBAT

FROM TIME TO time there may be fights between aquatic vessels, particularly ones travelling down the canals of Mars or through the swamps of Venus. These brief rules are intended to provide a framework within which the referee can resolve such battles. A modified form of the aerial combat rules is used, with the obvious difference that altitude is ignored. In addition, the following modifications are made.

Damage: All boats have their speed halved (round down) once they have taken half their total allowed hull hits, and they sink once they have taken all their allowed hull hits.

Irrelevant critical hits (such as magazine or boiler hits) are rerolled.

A loss of trim critical hit becomes "uncontrolled flooding," a new type of damage result. Ships suffering an uncontrolled flooding result immediately take hull hits equal to the damage value of the round which caused the hit. In each subsequent movement phase the crewmembers may attempt to stop the flooding by conducting a normal damage repair attempt. If they succeed, the hit has no further effect. If they fail, the ship takes additional hull hits equal to the original damage value. This continues every turn until either the flooding is stopped or the ship finally sinks.



BY STEAMER DOWN THE RED SEA

(Reprinted from *Scribner's Magazine*, September 1891.)

AFTER LEAVING the Suez Canal the way lies through the Gulf of the same name, into the Red Sea, where the water is blue, the background light brown, the hazy atmosphere pink, and the temperature red-hot. Vessels spread double awnings and hang up side curtains, but there is no escaping the intolerable heat experienced day and night going down this sea with the wind aft. Far away to the left, in the dim distance, is the fast-receding brown peak of Mount Sinai; other well-remembered biblical places stretch along the indistinct coast line.

Ramming: Normal rules for ramming and collisions are used, except that any ship damaged by a successful ram (by a ram-equipped ship) automatically suffers an uncontrolled flooding critical hit.

Submarines: Submarines must declare whether they are surfaced or submerged during the initiative phase of each turn. They may not be fired at while submerged, but they may not ram while submerged either. As submarines are completely enclosed and are difficult targets, all gun and crew hits count as misses. Once a submarine has taken half its hull hits, it may no longer dive. Lifter critical hits against submarines are not rerolled, but instead prevent them from diving until repaired.

The statistics for several aquatic vessels are presented to the left.

AQUATIC VESSELS

Vessel	Speed	Ram	Hull	Crew	Armament
War Galley	2	Yes	20	20	1 heavy gun, 10 passengers
Merchant	1	No	30	10	None, 10 passengers
Barge	1	No	40	10	None, 20 passengers
Skiff	2	No	4	1	None, 5 passengers
Submarine	1	Yes	10	6	2 torpedoes
Steam Launch	3	No	10	3	None, 10 passengers
Hydrofoil	R x 2	No	10	3	1 machinegun, 2 passengers

Note: R x 2 means the speed of the vessel is twice its reliability number.

CHRONOLOGY OF SIGNIFICANT EVENTS OF THE LAST DECADE

1879

UTE INDIAN uprising in United States.

British fight Zulu War, occupy Khyber Pass. British legation in Kabul massacred.

Germany declares Alsace-Lorraine to be an integral part of the German Empire.

Alexander of Battenberg elected Prince Alexander I of Bulgaria.

Radical Egyptian elements depose Ismail, the Khedive of Egypt. He is succeeded by Tewfik.

The French Panama Canal Co. is organized and headed by Ferdinand de Lesseps.

1880

DISRAELI STEPS down as British prime minister; succeeded by Gladstone. Second War of the Parhoon Succession results in establishment of a British crown colony on Mars. Princess Christiana Station established on Mercury.

France annexes Tahiti.

The Pacific War breaks out: Chile versus Peru and Bolivia. The war drags on into 1884.

The Boers of the Transvaal declare their independence from Britain. A republic is established, with Kruger as president.

Garfield is elected president of the United States. Carnegie develops the first large steel furnace. Electricity replaces gaslights on New York streets.

Heidelberg expedition returns from Venus.

First Russian expedition lands on Venus.

First Italian expedition lands on Venus.

Canned fruits and meat widely available for the first time in stores.

1881

THE BOERS of the Transvaal repulse the British at Laing's Nek and inflict a stunning defeat on them at Majuba Hill. In the Treaty of Pretoria, Britain recognizes the independent Transvaal Republic.

HMS *Aphid*, first armored aerial gunboat, launched at Syrtis Major. Flogging abolished in the British Army and Navy.

Garfield is assassinated, and his vice president, Chester Arthur, succeeds him.

The Bey of Tunis accepts status as a French protectorate.

The first political parties are formed in Japan.

Serbia forms an alliance with Austria to strengthen the government's hand against internal unrest.

1882

PRINCE MILAN Obrenovich of Serbia proclaims himself king.

Triple alliance formed between Germany, Italy, and Austria-Hungary. First German colonial governor to Venus takes residence at Venusstadt.

British troops occupy Cairo, Egypt. Meepsoor and Moeris Lacus accept status as British protectorates.

Belgian legion involved in frequent fighting in the Coprates Valley on Mars.

Bank of Japan founded.

1883

PAUL KRUGER elected president of the South African Republic.

French troops control Tunis.

Russian intervention in Hecates Lacus civil war leads to Treaty of Cebrenia recognizing Russia's "special interests" in the region.

British fight aerial campaign against pirates in the Aerian Hills. Rebellion in the Sudan grows.

The "Orient Express" (Paris to Istanbul railroad) makes its first run.

1884

GENERAL GORDON reaches Khartoum as governor of the Sudan. The Mahdi refuses to negotiate and brings Khartoum under siege. Gold is discovered in the Transvaal. Liam O'Connor in the *Fenian Ram* makes first attack on British shipping on Mars. British aerial squadron bombards Shastapsh.

The first "deep tube" (underground railroad, or subway) opens in London.

Germany occupies Southwest Africa.

Grover Cleveland is elected president of the United States.

The Berlin Conference of 14 colonial powers partitions Africa.

Japanese make their first landing on Mars.

1885

THE DERVISH ARMY captures Khartoum and massacres the garrison, and two days later destroys the desert column. British evacuate the Sudan. Later in the year the Mahdi dies; a new leader takes his place.

The Congo and the Upper Coprates become the personal possessions of King Leopold II of Belgium.

Germany annexes Tanganyika and Zanzibar, renaming them German East Africa.

Great Britain establishes a protectorate over Northern Bechuanaland,

the Niger River region ("Nigeria"), and southern New Guinea. British troops occupy Port Hamilton, Korea.

King Alfonso XII of Spain dies; Queen Maria Christina becomes regent for her unborn child. (Early the next year she gives birth to the future Alfonso XIII.)

Japan establishes Unebi Station near Euxinus Lacus.

Bulgaria seizes Eastern Rumelia. Serbia and Trans-Balkania declare war on Bulgaria and Ruritania, but are quickly beaten and withdraw to prewar boundaries.

Posthumous publication of Karl Marx's *Das Kapital*.

1886

GERONIMO surrenders.

General George Boulanger becomes French war minister.

British Prime Minister Gladstone introduces bill for home rule in Ireland. The bill fails, and Salisbury becomes prime minister. Chamberlain becomes colonial secretary. HMS *Locust*, first armored aerial gunboat built on Earth, launched at Portsmouth. "Mylarkt Incident" (exchange of gunfire between German and British aerial vessels on Mars) begins steady deterioration in Anglo-German relations.

Alexander of Bulgaria abdicates after coup; Stephan Stambulov becomes regent.

First meeting of the Indian National Congress.

1887

QUEEN VICTORIA celebrates her Golden Jubilee. British besiege and capture the city of Shastapsh. "Avenel Incident" brings Britain and Oenotria to the brink of war. *Fenian Ram* destroyed by British aerial

gunboats in the Meroe Highlands, but O'Connor survives and escapes. Successful aerial campaign waged against High Martian pirates of the Astusapes Highlands, culminating in near-total destruction of Barrovaangian fleet.

Prince Ferdinand of Saxe-Coburg elected king of Bulgaria, with Stambulov as prime minister.

General Boulanger attempts coup in Paris, but fails. France organizes the Union Indo-Chinoise.

Leopold II declares the Lower Coprates a Belgian protectorate.

Construction begins on Tehuantepec Ship Railroad.

L. L. Zameenhoff devises the language "Esperanto."

1888

"RIPPER" MURDERS take place in Whitechapel district of London. *The Financial Times* first published in London. King Lobengula of the Matabele accepts British protectorate and grants Cecil Rhodes mining rights.

Kaiser (Emperor) Wilhelm I of Germany dies in March and is succeeded by his son Frederick III, who dies in June and is succeeded by his son Wilhelm II.

Sarawak accepts status of British protectorate.

General Boulanger is retired from the French Army and elected to the Chamber of Deputies. Ravachol escapes from prison.

Benjamin Harrison is elected president of the United States. Johnstown flood takes place. Sidney Boynton, United States ambassador to the Oenotrian Court, is kidnapped by Barrovaangian King Hattabranx, but he is later rescued by British gunboats. First recorded successful

assault on a large kraag.

Pedro II, emperor of Brazil, abolishes slavery.

1889

JAPAN ADOPTS modern constitution.

Tehuantepec Ship Railroad begins operation; French Panama Canal Company declares bankruptcy.

Pedro II, emperor of Brazil, overthrown by military coup backed by planters. Brazilian expansionist move north checked by the United States Navy in the Battle of Mona Passage.

First confirmation of existence of Selenite civilization beneath the surface of Luna.

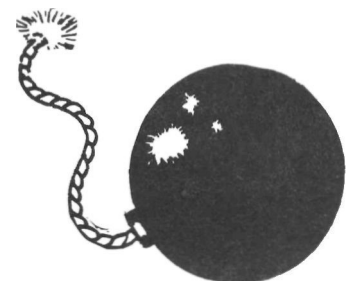
General Boulanger flees from France. Ravachol attempts to destroy orbital heliograph station HMS *Harbinger*.

Milan Obrenovich abdicates from Serbian throne in favor of his son, Alexander. Bulgaria and Ruritania mobilize.

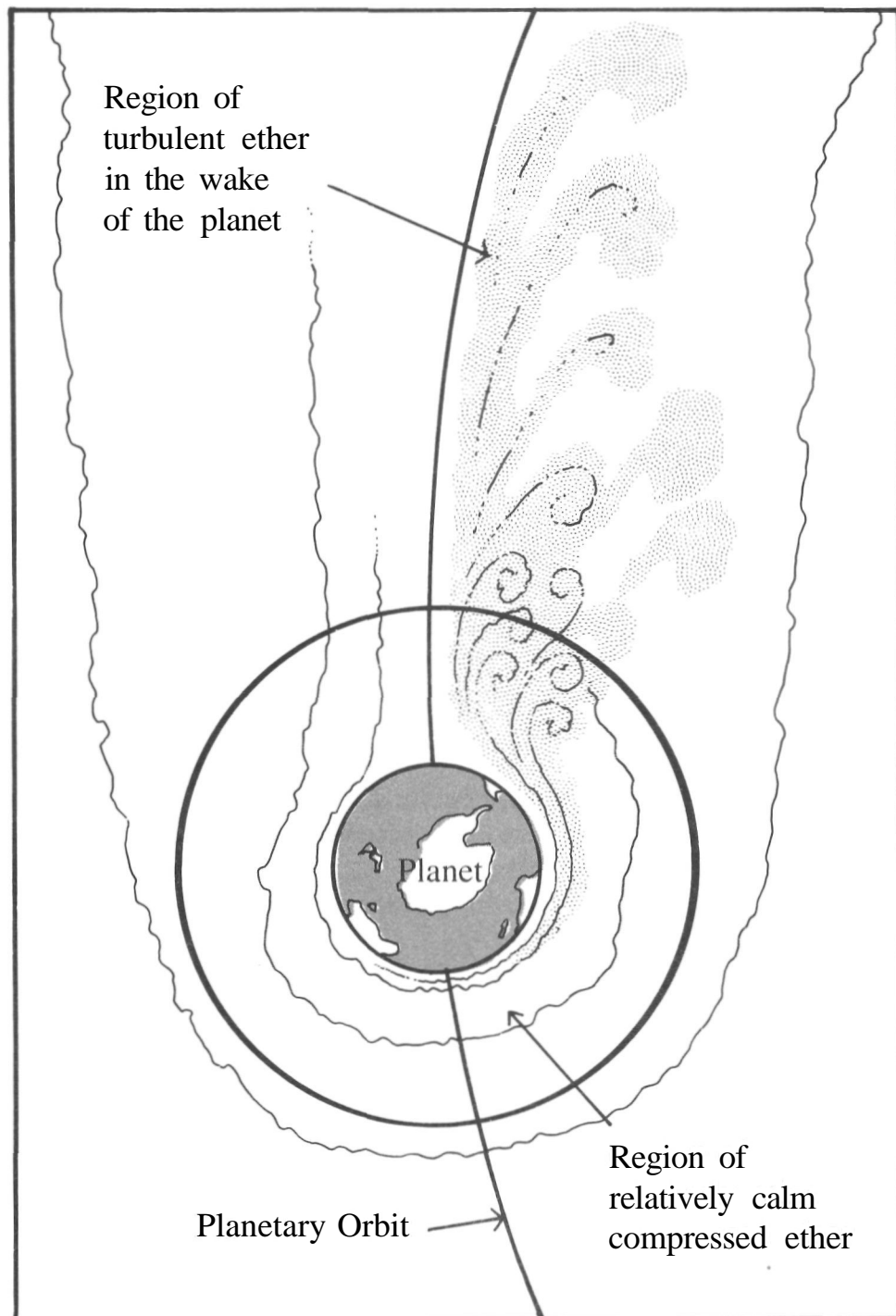
John IV, emperor of Abyssinia, dies and is succeeded by Menelik II. Italian troops mass on the Abyssinian borders in Eritrea and Somaliland.

Belgians complete conquest of the Coprates. Columns begin raiding outside the Coprates in pursuit of rebels. Antihuman riots break out in many cities on Mars.

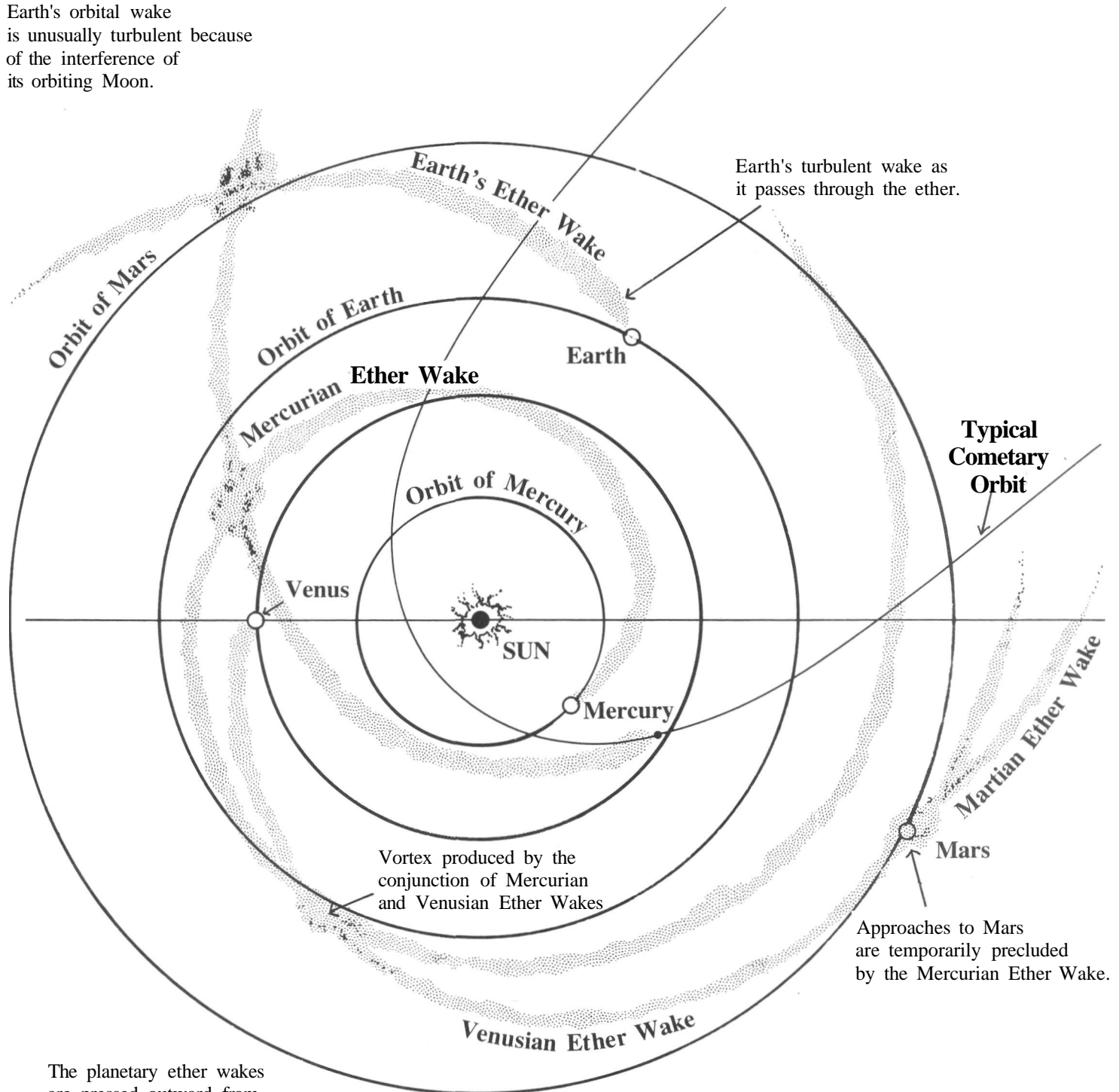
Oenotrian Empire declares war on Britain.



The Inner Solar System



Earth's orbital wake is unusually turbulent because of the interference of its orbiting Moon.



The planetary ether wakes are pressed outward from the Sun. When the wakes of two planets cross, violent ether vortexes are produced. When *three* wakes meet, the resulting ether storm is especially violent.

THE WORLD RIVER

WITH ONE FACE turned perpetually toward the Sun and the other face in endless night, only a relatively thin strip of Mercury's surface, the Twilight Zone, is inhabitable.

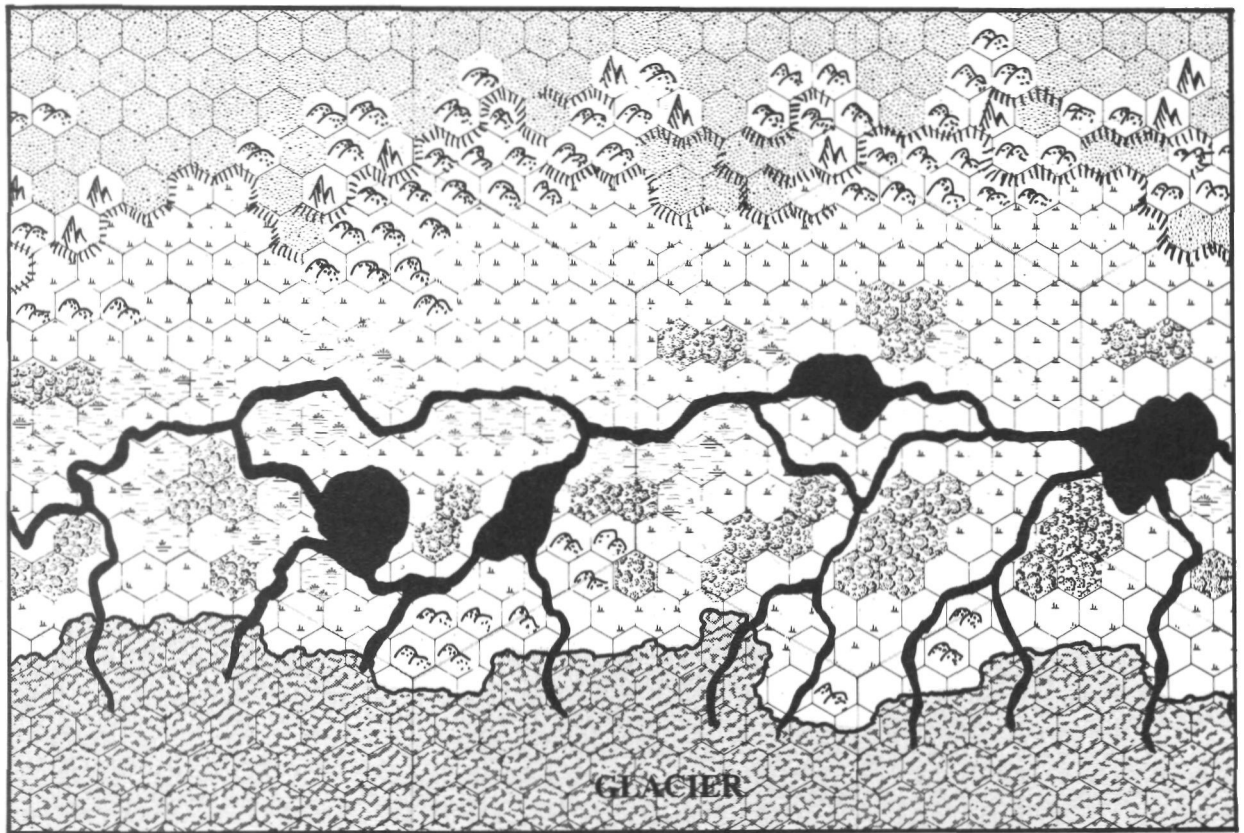
Mercury's Hot Side is forever under the steady rays of the Sun. It begins at the edge of the Twilight Zone as a desert with temperatures around 100 degrees F. This desert extends some 300 miles sunward, ending at the point at which water boils (212 degrees F). From this

point a zone known as the Wasteland extends an additional 600 miles, with temperatures ranging up to 450 degrees F. Next is the Tin Zone, so called because within its 600-mile range temperatures vary from 450 to 670 degrees F, sufficient to melt tin. The last 600 miles to the sunward center of the Hot Side are called the Lead Zone, with temperatures ranging from 670 to 900 degrees F. This zone may be characterized by lead-plated rocks, pools of molten lead, glass crystals, and intense light. Of course, this is purely speculation as

no human eyes have yet closely examined the terrain of the Lead Zone.

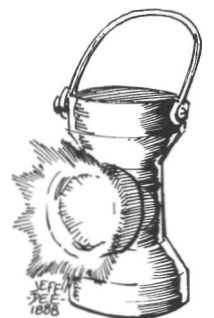
The Dark Side begins at the outer edge of the Twilight Zone and is divided into three zones: the Ice Sheath (300 miles deep, temperatures from 32 to -100 degrees F), the Dry Ice Zone (300 miles deep, temperatures to -200 degrees F), and Kelvin's land (1800 miles deep, with temperatures to -300 degrees F).

The hospitable Twilight Zone is Mercury's fabulous treasure trove. At the center of the Twilight Zone is the World River. This watercourse



The temperate climate of the Mercurian Twilight Zone means that simple, sturdy clothing is always appropriate.

The constant gloom of the Ice Sheath makes artificial illumination an essential item of the Mercurian explorer's inventory.

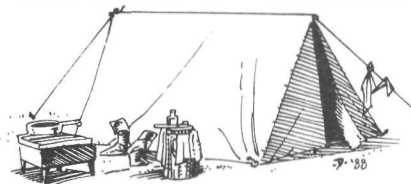
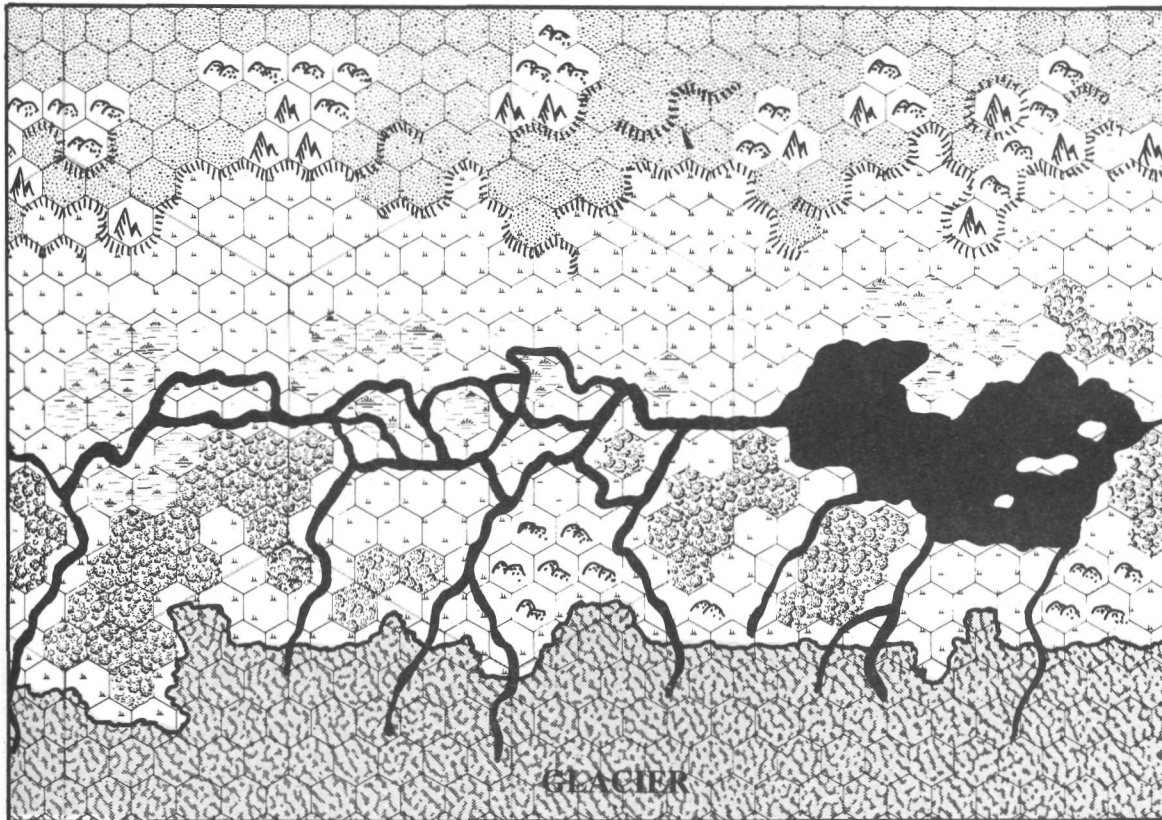


circles the globe, its flow driven by Coriolis effects rather than gravity. The World River is fed by rains and drainage from its watershed. And when the World River winds near the Ice Sheath, it is fed by the icebergs of continuously crumbling glaciers.

The left bank, lying between the river and the desert, is a lush tropical region which stretches for miles. Many low-lying areas within it are swamp or marsh. The right bank, between the river and the Ice Sheath, is a temperate region covered with forest and grassland.

The circumference of Mercury is nearly 4800 miles, which means the World River is 48 mid-scale hexes long. The map below shows a typical stretch of the World River several hundred miles in length and mapped on the small-scale map grid. Each large hexagon (which is 10 small hexes across) represents a single mid-scale hex, and 48 of these are in the river. Referees can use the sample hexes below to make additional maps of the World River. Alternatively, the large hexagons below are designed in such a way

that they can be placed in a different order, and the actual river sections will still match up. A quick and acceptable way to generate a stretch of river is to photocopy the map below several times, glue each one to a medium-grade cardboard sheet or artist board, and then carefully cut out each large hexagon. Place these hexagonal tiles in a pile facedown and mix them up. Now each time the players enter a new mid-scale hex, draw a tile and add it to the map. In this way you can create the river as the players go along.



The portable base camp lends both comfort and convenience to any exploratory expedition on Mercury.

Mercurian rain storms are both sudden and unpredictable. Every explorer should have a set of sturdy rain gear.



TRAVEL DOWN THE WORLD RIVER

TRAVEL DOWN the World River is done as normal travel on an inland waterway. However, the river has enough of a current to affect the distance travelled each day. When travelling downriver, add 10 miles to the distance travelled per day; when travelling upriver, subtract 10 miles from the distance travelled. This affects travel only when moving in the river channel itself; the current on the lakes is too mild to have any measurable effect. If a vessel travels both on the river and on a lake in the same day, the referee will determine whether they gain (or lose) the 10 miles of travel due to the current.

PRINCESS CHRISTIANA STATION

GREAT BRITAIN established its predominantly scientific outpost on Mercury—Princess Christiana Station—in 1880. It is situated at the Mercurian North Pole, and its scientists study the Sun and the local Mercurian environment. The small community is home to a faculty of 20 scientists, 50 servants and workers, six government officials, and a score of Royal Marines. Royal Navy ether

MERCURY: ENCOUNTERS ON THE WORLD RIVER

<i>Terrain</i>	River	Lake	Swamp	Plain	Hills	Forest
<i>Encounter #</i>	3	4	4	2	1	3
<i>Die Roll</i>	<i>EncounterType</i>					
1	Flyer	Flyer	Flyer	Flyer	Flyer	Centipede
2	Fish	Fish	Flyer	Runner	Flyer	Centipede
3	Fish	Crab	Snake	Runner	Runner	Runner
4	Bag	Bag	Snake	Gator	Runner	Runner
5	Squid	Squid	Gator	Gator	Gator	Gator
6	Serpent	Serpent	Gator	Centipede	Gator	Gator

flyers call on the outpost at irregular intervals, and a supply ship delivers equipment, provisions, and mail every six months.

No other permanent national bases are located on Mercury. Since the establishment of Princess Christiana Station in 1880, the British Royal Society has supported a number of small expeditions of scientific and economic importance within 100 miles of the Mercurian North Pole.

Princess Christiana Station is a sprawling complex of buildings, all of which are fairly small. Fewer than 100 people permanently inhabit the station, and their quarters and working facilities are housed in modest bungalows spread across a quiet meadow on the banks of the World River. There is a large cleared field on which an occasional ether flyer lands, and three small aerial steam launches are tethered there as well.

Several large, bushy trees remain standing interspersed between the buildings, which are connected by quiet, shaded gravel walks. The buildings are mostly stucco cottages, but several of the larger administration buildings are built of brown brick and are reassuringly English in appearance.

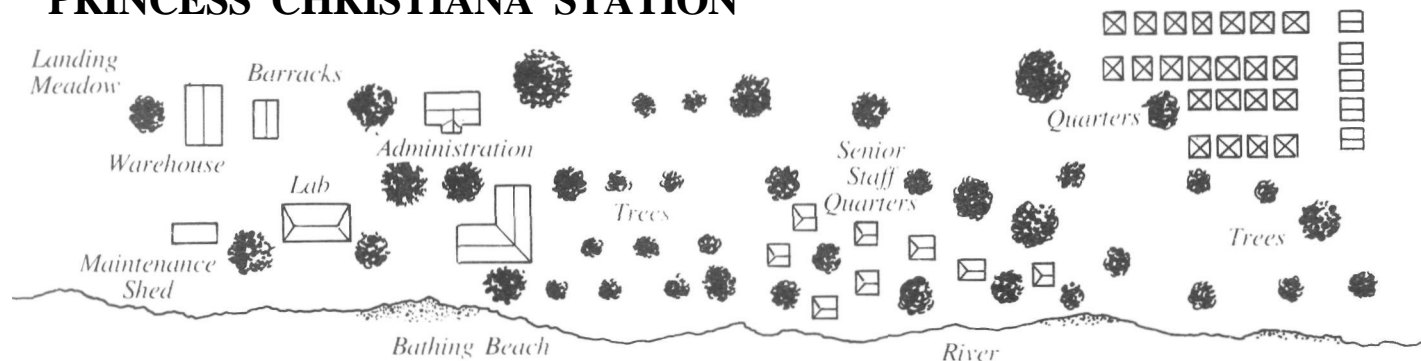
THE RICHES OF MERCURY

QUITE ASIDE from the mineral wealth of Mercury's Hot Side, there are treasures to be found along the banks of the World River as well. The following two items are meant to be illustrations and are not intended to exclude other forms of riches referees may wish to put in the path of players.

Glow Crystals

GLOW CRYSTALS can be found in the bottoms of swamps along the

PRINCESS CHRISTIANA STATION



left bank of the river. They are some unknown mineral crystal which apparently is able to absorb solar energy and convert it through an internal property inherent in their structure to electrical energy. Most crystals found are of value only as curios or jewelry. Extensive prospecting, however, may lead to the discovery of one or more crystals of remarkable size and power.

Players may prospect for large crystals in any swamp hex along the left bank of the river. Each week spent prospecting allows a player to attempt a formidable task using

Geology skill dice with Observation as a positive die roll modifier. Failure indicates there are no crystals present (or at least none that the player can find), and the player will have to move to a different hex to continue prospecting. Success indicates that the player has found an extraordinary crystal.

An extraordinary crystal weighs one die roll times 10 pounds, and acts as an energy cell (see page 66 of the **Space: 1889** basic rules) with a reliability rating equal to one die roll. An extraordinary crystal can be sold for 1D6x£500.

Shell Gland

THE LARGE CRABS of the World River are dangerous if encountered, but some adventurous types have taken to hunting them for their shell gland. This gland, which is about the size of a walnut, is found under the creature's shell in the center of its back. It is much in demand by the perfume industry, due to its unique and powerful musky odor. Each gland must be preserved in ice to prevent it from decaying, but if properly cared for it can be sold for 1D6x£100.

ANIMAL DESCRIPTIONS

Flyer: A flying fish with translucent, web-like wings, which is adapted to breathe air. Harmless but edible.

Squid: A variety of tentacled, Mercurian aquatic predators are collective-

ly referred to as "squids."

Runner: Small, herbivorous version of the gator. Harmless but edible.

Gator: This is a short-legged, awkward, alligator-like amphibian.

Larger varieties can be quite dangerous.

Fish: Any one of a variety of swimming, gilled animals which attack with teeth. Only larger versions pose a serious danger.

Bag: Bag fish are very similar to jellyfish and attack using long, trailing stingers. They are of no danger to anyone other than swimmers.

Crab: This term is used to refer to a variety of round, flat, shelled creatures. While small ones are harmless, large ones can tip over rafts and small boats.

Serpent: Giant serpents resemble the eels of Earth but can grow to very great lengths. They will attack savagely with their razor-sharp teeth.

Centipede: Giant centipedes inhabit the forests and grasslands of Mercury and attack by means of their poisonous bite, which counts as a stinger attack. Centipedes also tend to trample large animals and thrash about to keep them off balance, which is treated as a tail attack.

ANIMAL CHART: MERCURY

Type	#App	Size	Move	Wnds	Save	Wt.(lbs)	Weapons
Flyer	1D6	1x1	F40	1	—	2	None
Bag Fish	1	1x1	W10	2D6-1	2	5+20	Sting (2, 3, 0, 1)
Serpent	1	1x6	W20	3D6	—	Wx2000	Teeth (1, 3, 2, 4)
Snake	1	1x1	W20	1	1	10	Fangs (1, 2, 0, 1)
Crab	1D6	1x1	W10	2D6-1	2	10+100	Teeth (1, 2, 1, 4)
Squid	1	1x2	W20	1D6	—	10+50	Tentacles (6, 3, 3, W)
Fish	1D6	1x1	W20	1D6	—	10+50	Teeth (1, 2, 0, 1)
Centipede	1	1x4	L10	2D6	-1	Wx1000	Sting (1, 3, 1, 1) Tail (1, 2, 1, 2)
Gator	1D6	1x1	L10	1D6	—	10+50	Teeth (3, 2, 0, 1)
Runner	2D6	Tiny	L20	1	-1	5	None

Notes: Most of the general types of animals of Mercury come in a variety of sizes. These animals have a wound capacity expressed in dice rather than a fixed number. For example, if a serpent was encountered, the referee would roll three dice, the result being the number of wounds it takes to kill the serpent.

The size of the animal affects its weight as well. Serpents weigh 2000 pounds for every wound capacity number, while centipedes weigh 1000 pounds per wound capacity number. Other animals have a base weight and an addition made to the weight for every wound number in excess of 1. The crab, for example, has a weight of 10+100. Crabs with a wound capacity of 1 weigh 10 pounds, those with a wound capacity of 2 weigh 110 pounds, those with a 3 weigh 210 pounds, and so on.

Finally, a squid's ability to constrict with its tentacles is affected by its size, so the attack strength of tentacles is equal to the wound capacity of the squid.

NOTES

1. Lizard-men of the western Ishtar Highlands comprise about a third of the native population of the German colony and about five percent of the British colony. These tribes were well on their way to the development of an agricultural lifestyle before the arrival of humans and have adapted well to work on human plantations. Currently, villages of these tribes have been established throughout the German colony, mostly as plantation workers.

2. The highland tribes of the Kaiser Wilhelm Mountains form the second major group of Lizard-men, accounting for half the aboriginal population of the German colony and about five percent of the British colony. The villages of this group tend to be less permanent affairs than those of the western Ishtar group. The cultural distinction of the hill tribes is in their burial customs. The religion of the hill tribes requires that the dead must be sealed in a subsurface chamber along with tools, weapons, and trade goods sufficient to allow them a good life upon their arrival in paradise (which is believed to be located in the center of the planet). The deceased must disgorporate (a process which takes several months) and journey to paradise by swimming through the bedrock of the planet.

3. The tribes of the eastern Ishtar Highlands comprise the bulk of the population of the British colony and are characterized by their extremely nomadic lifestyle. For this reason, they do not adapt as well to plantation life, and, consequently, the British plantations tend to be smaller than their German counterparts. A larger proportion of British settlements tend to be trading posts rather than organized plantations.

4. The tribes of the western Mackenzie Sea are primarily seagoing, and their village groupings tend to be more or less permanent features of the Mackenzie Sea's littoral zone.

5. The Lizard-men of the Gula Mountain range on the Eisila Peninsula are among the most primitive thus far discovered. They have no village structure, no noticeable religion except belief in a few animistic nature spirits, and a primitive tool-manufacturing technology. The Italians have been largely unable to exploit them in the cultivation of cotton trees, and trading posts among them deal mainly in the rare flora of the region and in leather made from the skins of the local fauna, which tend to be multicolored and very striking.

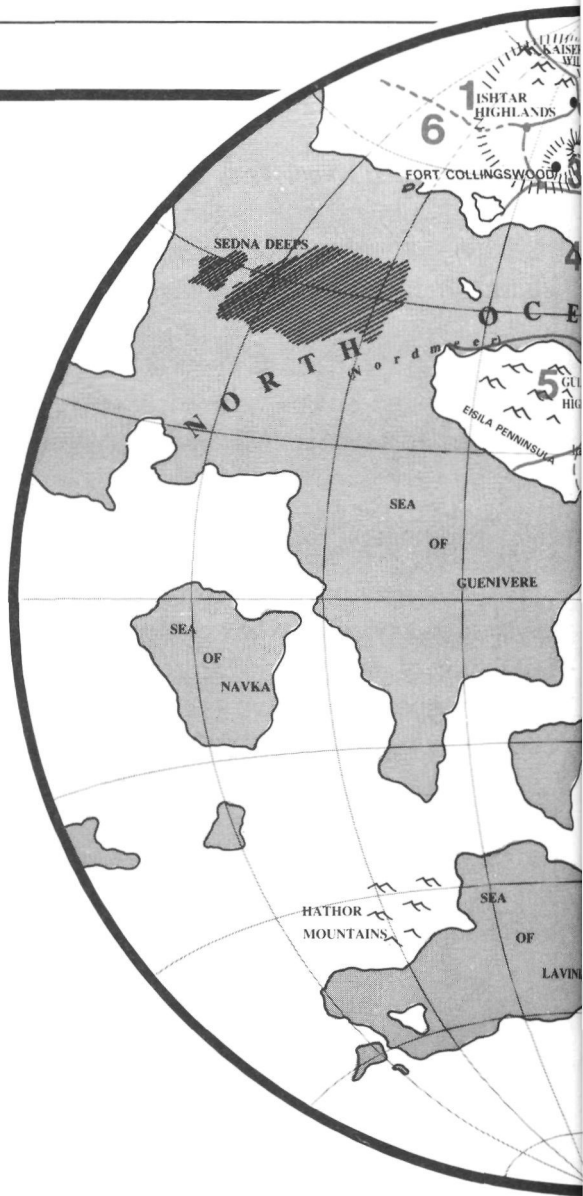
6. The less developed tribes of the western coasts have suffered greatly at the hands of their more advanced brethren from the Ishtar Highlands, especially since the latter have superior weaponry obtained by trade with humans. Before the coming of humans, these tribes wandered throughout the Ishtar Highlands, raiding the more sedentary tribes of the plateaus. War parties occasionally penetrate to the settled areas of the German and British colonies.

7. The eastern MacKenzie Sea (in the area north and slightly east of the Italian colony) and the western edge (at least) of MacKenzie's Island is home to a distinctive culture of Lizard-men. It was a tribe of this grouping that adopted James MacKenzie after he washed up on their shore.

8. The Lizard-men of the Sappho Plateau managed to develop a primitive agrarian economy before the arrival of the Italians and presently make up fully 90 percent of the native population of the *Colonia di Veneri*. They have adapted well to plantation life, and large tracts of jungle have been converted to cotton tree production.

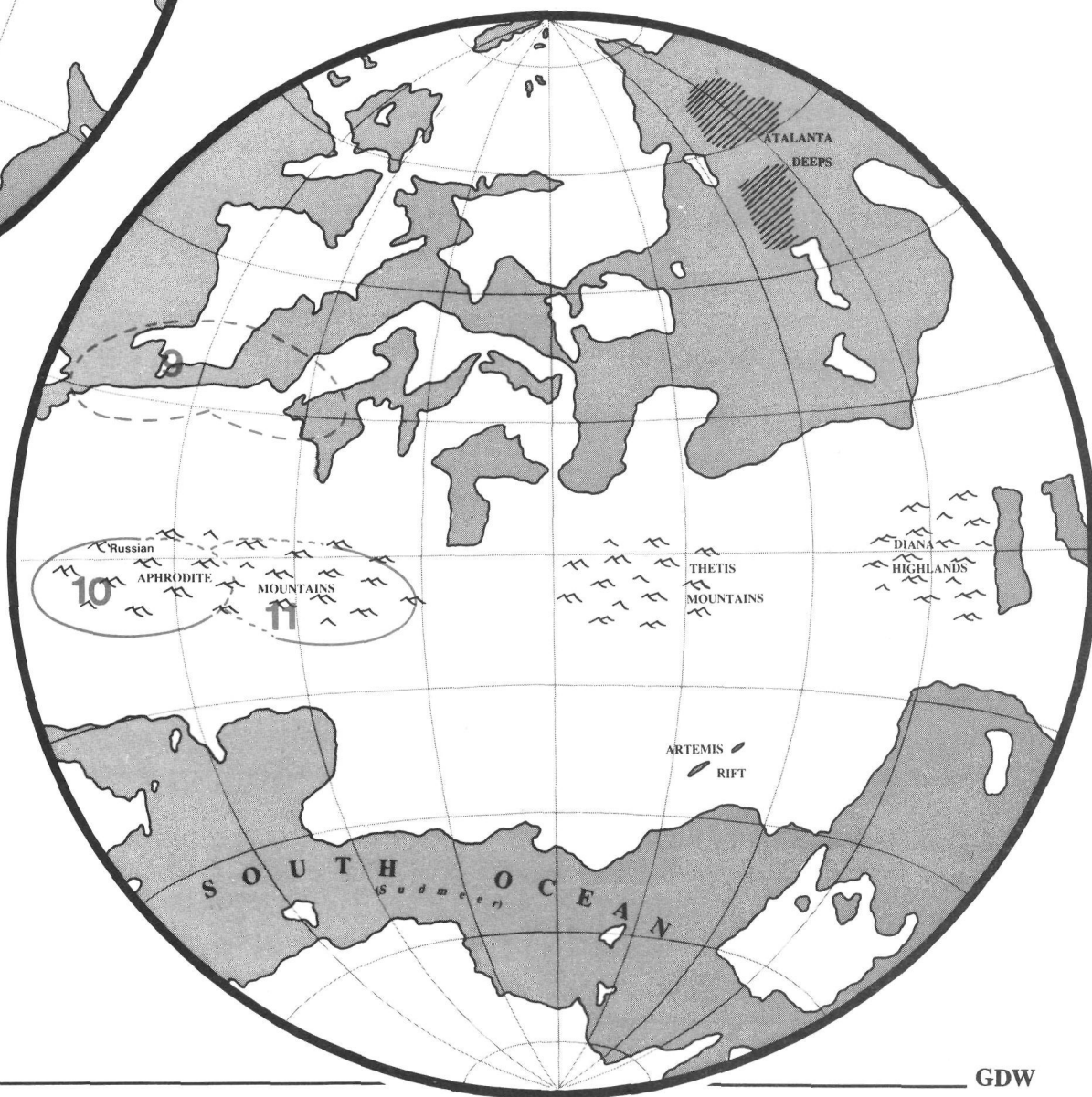
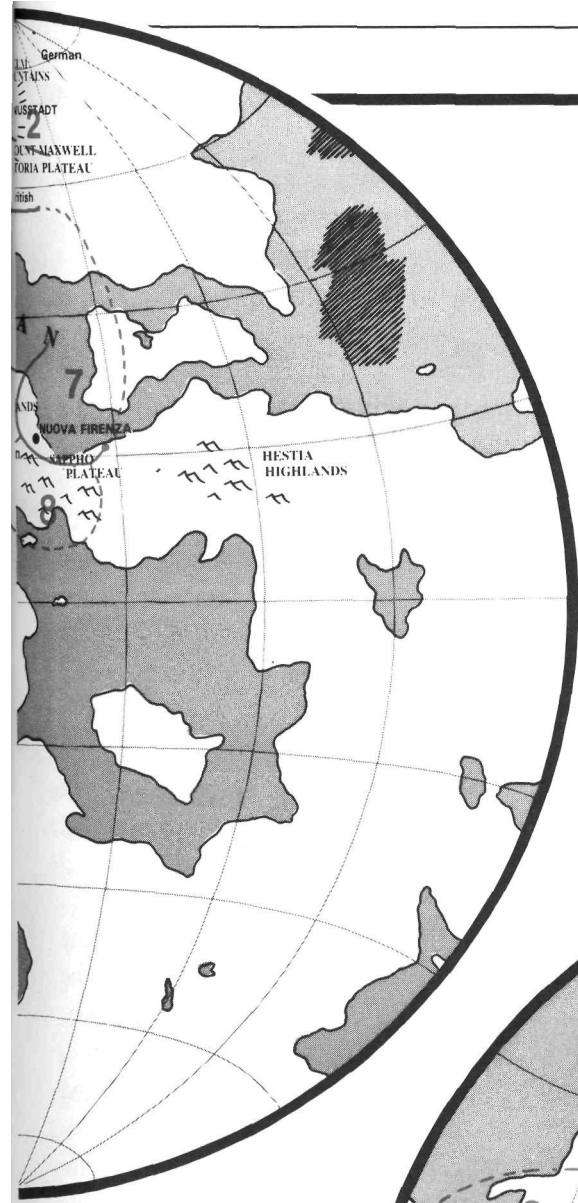
9. Little is known about the littoral tribes of the coastal area north of the Aphrodite Mountains. They are primarily a seafaring people who build large hut/rafts which they anchor in the shallows to form temporary villages. When the time comes to move on, the tribes simply up anchor and unfurl the sails of these "houseboats."

10 & 11. The nomadic highland tribes of the western Aphrodite Mountains have been at war with the more agricultural tribes of the eastern plateau (marked 11 on the map) for generations. Neither side was able to gain an advantage until the arrival of the Russians, who upset the balance of power by trading edged weapons of metal for local products. Several plantations have been started using captured eastern tribesmen as laborers and western tribesmen as overseers.



Notes on the Cultural and Social Details
Of the Lizard-men of
VENUS

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LIZARD-MEN

TO THE UNTRAINED eye of the visitor from Earth, the Lizard-men might at first seem identical. In reality, there are many subtle differences and distinctions in their culture, society, religion, and lifestyle. Many beliefs are common to all and will only be discussed in connection to a particular group, saving space for the unique aspects of other groups. All the tribal groupings discussed below are human classifications; the natives have no notion of any political or social entity other than their own village or (in some cases) their own tribe.

Western Ishtar Tribes

THESE TRIBAL groups make up a sizable minority of the native population of the German colony, and a small percentage of the British colony. The tribes had developed a primitive form of agriculture before the arrival of humans, and have adapted well to work on human plantations. Currently, Ishtar villages have been established throughout the

German colony, mostly to house plantation workers.

The basic unit of life is the village, ruled by a group of *Nupapa Kumama* or "esteemed elders." These elders are natives whom their peers hold in respect, and they may be warriors, shamans, craftsmen, or (very rarely) a native whose belly skin augurs leadership. The elders adjudicate disputes, set customs and taboos, lead in time of war, and administer the day-to-day life of the village. Often, one elder will be acknowledged as supreme, and this elder is usually labeled the "chief" by humans.

Each village has a shaman, a keeper of the mystic secrets and ceremonies of the race, who occupies a centrally located hut in each village. The shaman's hut is the central meeting place of the village, and is where the rituals and ceremonies of the natives are performed. Chief among these is the *Tonumutola*, the augury from the belly skin.

Surrounding the shaman's hut are the huts of the village craftsmen. In the plantation villages, there are

fewer of these, as the natives who work the plantation obtain tools from humans. The nomadic villages have as many as 12 craftsmen, making the weapons, tools, and other items required for daily life. A primitive system of barter is used to distribute these goods throughout the village.

The huts of the more sedentary tribes (and those living on plantations) are solidly built, and often raised on stilts to lift them above the surface of the muck and mire. Stout reeds, saplings, and strips of wood from local trees (if available) are woven and tied together to form a shelter, roofed with vegetation in a manner almost identical to thatching.

Highland Tribes

THE HIGHLAND tribes of the Kaiser Wilhelm Mountains form the second major group of Lizard-men, accounting for half the aboriginal population of the German colony and about five percent of the British colony. The villages of this group tend to be less permanent than those of the western Ishtar group. Their huts are more ramshackle affairs, and are usually smaller and not as well built. "If one collapses," the inhabitants say, "it is a few hours' work to build another, and we will probably move on before it is built."

These nomadic wanderers can often be found working plantations where they have had a little trouble adapting to the sedentary lifestyle. The bulk of them, however, are unsettled wanderers, earning their living by hunting and gathering. During their travels, they collect wild plants and other items, which they trade to humans for tools and trinkets at the numerous trading posts scattered throughout the colonies.

RELIGION

RELIGION IS ONE of the few things that all groups of Lizard-men have in common. While there are individual variations, of course, all Lizard-men share the same basic animistic religion, which holds that the world is full of spirits called *Timu*. Each class of inanimate object has its own spirit, and each individual living thing likewise. *Timu* are relatively weak spirits compared to the more powerful spirits called *Natimu*, which are personifications of the forces of nature, such as the wind or lightning. Greatest of the *Natimu* is *Homa*, the spirit of life and death. *Homa* grants the belly pattern, sets the course of each native's life, and determines when death shall come. Lizard-men do not worship spirits as such; there are simply a bewildering number of ceremonies which must be performed. Each tribe has its own ceremonies and its own shamans to keep them and pass them on.

The main cultural distinction of the hill tribes is their burial customs. The religion of the hill tribes varies in certain details, but generally they all believe in an afterlife. Their paradise is located in caves deep in the bedrock of the planet, and the deceased must disincorporate (a process which takes several months) and journey to paradise by swimming through the bedrock of the planet. The dead are sealed in a subsurface chamber along with tools, weapons, and trade goods sufficient to allow them a good life upon their arrival. These tombs are often looted by unbelievers from the lowland nomadic tribes, a process which causes some friction between the lowland and highland Lizard-men.

Eastern Ishtar Tribes

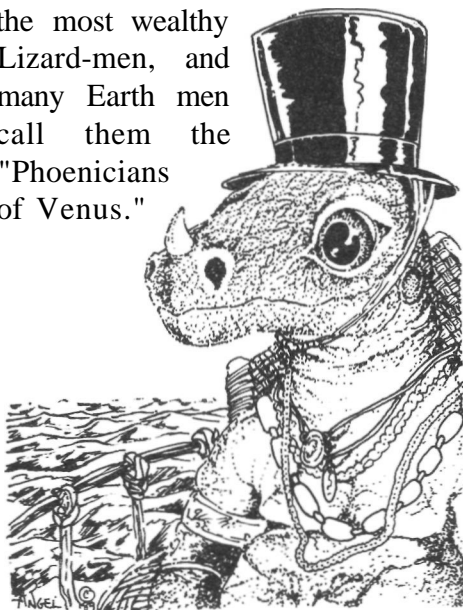
THE TRIBES OF the eastern Ishtar Highlands comprise the bulk of the population of the British colony and are characterized by their extremely nomadic lifestyle. They have fewer and less complicated religious ceremonies, and are more primitive than the natives of the other regions. They have not adapted to plantation life very well, and for this reason they tend to run away more often than their western brethren. British plantations tend to be smaller than the German ones for this reason. The border tribes of the eastern Ishtar group are less affected by the civilizing influence of the human presence, and they tend to turn to brigandage more often than other groups.

Coastal Tribes

LIZARD-MEN are very much adapted to a semiaquatic lifestyle, and those living in coastal regions are often as highly developed as the most

civilized groups of the western Ishtar Highlands.

The tribes of the western MacKenzie Sea are primarily seagoing, and their village groupings tend to be permanent features of the MacKenzie Sea's littoral zone. Access to the humans' metal tools has enabled them to build radically larger craft, and they are currently a culture in transition as they range farther out to sea on longer and more profitable trading voyages. They are becoming the most wealthy Lizard-men, and many Earth men call them the "Phoenicians of Venus."



Aphrodite Coast Tribes

LITTLE IS known about the littoral tribes of the coastal area north of the Aphrodite Mountains. They are primarily seafaring people, who build large hut/rafts which they anchor in the shallows to form temporary villages. When the time comes to move on, the inhabitants of these "houseboats" simply up anchor and unfurl their sails. They have not had the same access to human tools as those tribes closer to the British and German colonies, and consequently are not as capable of sophisticated marine construction as their western counterparts.

Gula Tribes

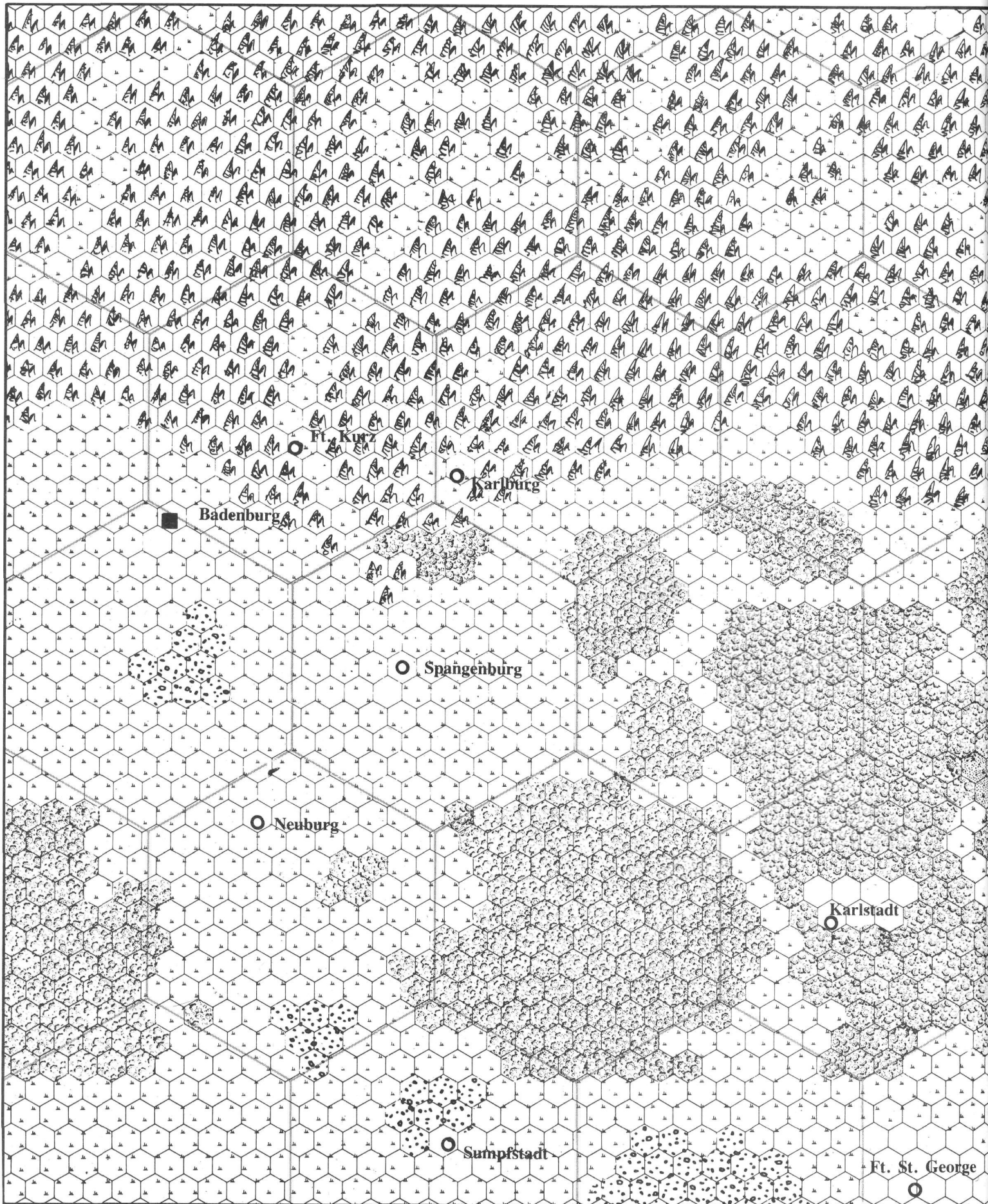
THE LIZARD-MEN of the Gula mountain range on the Eisila Peninsula are among the most primitive discovered thus far. They have no village structure and no noticeable religion, except belief in a few animistic nature spirits; however, they do have a primitive tool-manufacturing technology. The Italians have been largely unable to exploit them in the cultivation of cotton trees. Trading posts among them deal mainly in the rare flora of the region and in leather made from the skins of the local fauna, which tend to be multicolored, striking, and very beautiful.

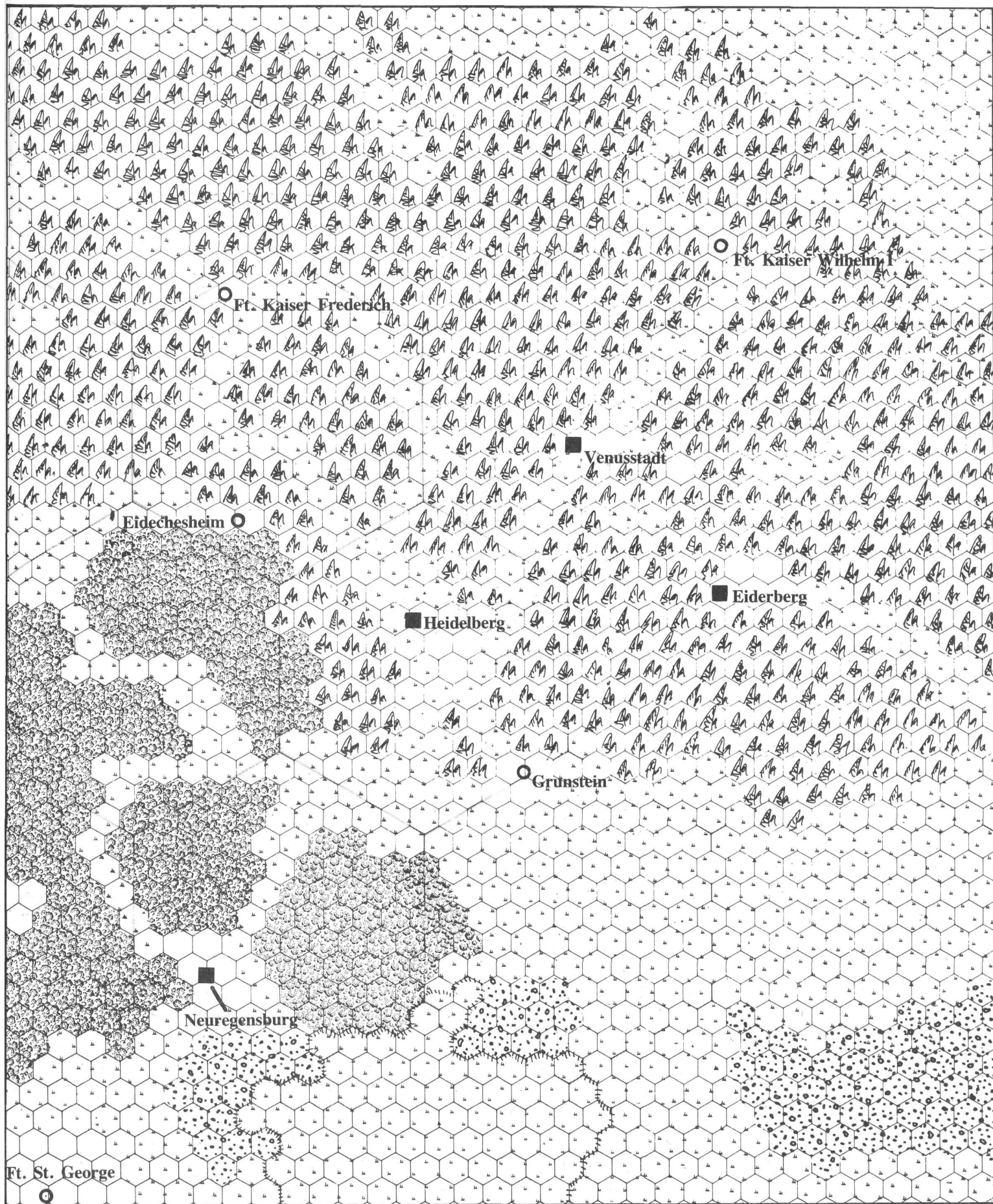
Sappho Tribes

THE LIZARD-MEN of the Sappho plateau had managed to develop a primitive agrarian economy before the arrival of the Italians, and they presently make up 90 percent of the native population of the *Colonia di Venusi*. They have adapted well to plantation life, and large tracts of jungle have been converted to cotton tree production.

Aphrodite Mountain Tribes

THE NOMADIC highland tribes of the Western Aphrodite Mountains have been at war with the more agricultural tribes of the eastern plateau for generations. Neither side was able to gain an advantage until the arrival of the Russians, who upset the balance of power by trading edged weapons of metal for local products. Several plantations have been started using captured eastern tribesmen as laborers and western tribesmen as overseers.





FUEL SOURCE

ONE ASPECT of Venus that applies to all settlements is the need for fuel (heating is not required, but the machinery of civilization requires energy). On Venus, energy comes in the form of bog weed. Bog weed is the only source of fuel on Venus, other than the small deposits of petroleum found in the lowlands near the German colony (which are reserved for use in dirigibles). The water must be extracted from bogweed before it can be burned, however. The bogweed is gathered up, compressed to remove most of the water, and moved into special drying houses. The main purpose of these buildings is to shelter the bogweed from the near-

perpetual rainfall. Once inside, the bogweed is stacked in huge mounds and inoculated with a starter culture of dead bogweed. The center of the mound begins to decay, and the heat produced by the growing bacteria kills more of the weed and causes the decay to spread. Within a few days, the mound has "cooked" almost all of the remaining moisture out of itself, and the mound must be cut apart or the growing heat will set it on fire by spontaneous combustion. The "cooked" bogweed is compressed into bricks and can be burned like peat.

THE GERMAN COLONY

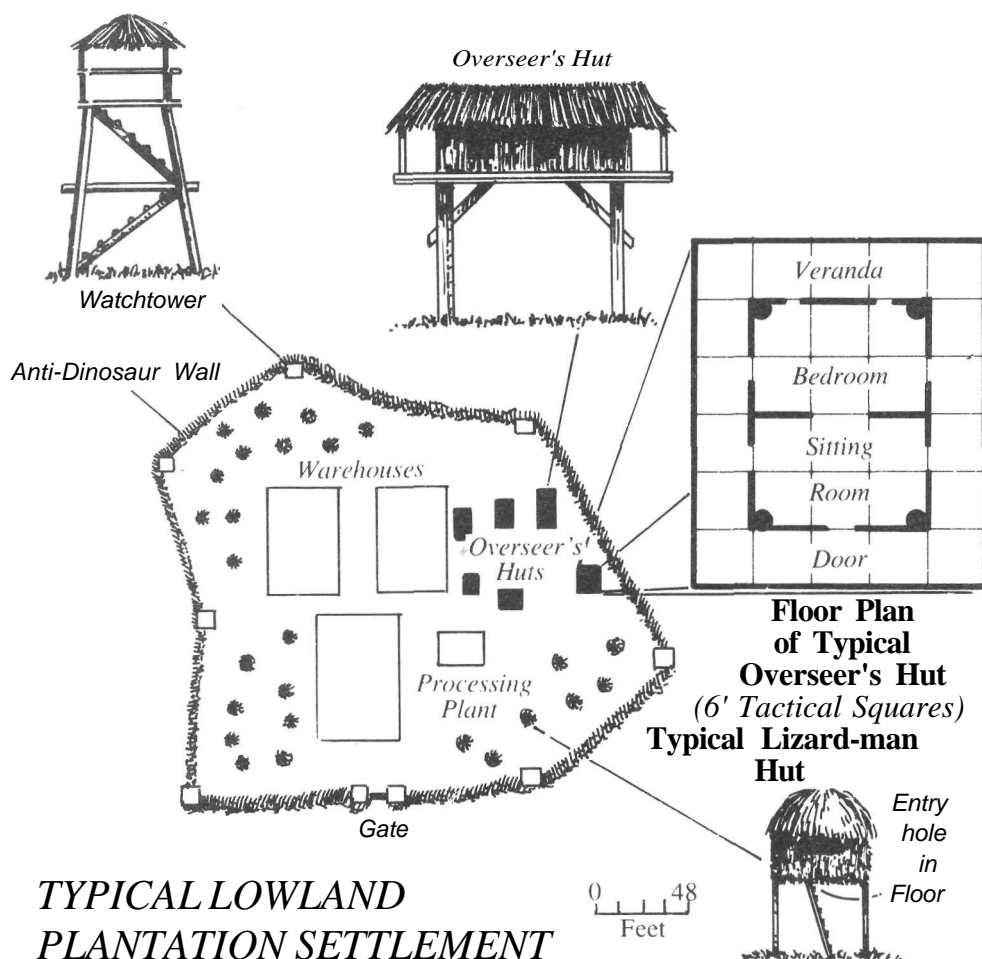
OUTSIDE THE urban centers, which account for almost three-

fourths of the German colony's human population, the colony consists primarily of plantations and trading stations.

Plantations: Because the German colony is populated largely by the relatively more agriculturally sophisticated Western Ishtar tribes, German plantations can be larger and more efficient (that is, they can be operated using a very low ratio of humans to natives). A typical German plantation is at least three times larger than a typical British or Italian plantation. Only the Russians, with their captive labor and Lizard-men overseers, approach the German operations in efficiency.

Plantations in the German colony can be several hundred miles across. They consist of a central human settlement (with quarters for the overseers, processing machinery, and warehouse facilities for the various crops), along with several dozen native villages scattered throughout the plantation. A native village is responsible for growing its own food on land set aside for this purpose, and for producing a certain amount of other produce on an annual basis. A village will usually concentrate on one particular type of crop to the exclusion of others, gaining proficiency in its cultivation. Internal government of the individual villages is usually left up to the locals; relations between villages are the responsibility of the plantation overseers who travel a circuit of several villages.

Each plantation produces a variety of crops. These are usually plants which serve as the raw material feedstocks for the growing German chemical and pharmaceutical industries.



**TYPICAL LOWLAND
PLANTATION SETTLEMENT**

Trading Posts: Throughout the German colony are vast areas unsuitable for cultivation which contain natural products of value on Earth. Tribes of nomadic natives wander these areas, leading a hunter-gatherer existence and harvesting the natural bounty of the wilderness for trade with humans.

A trading post is usually a semi-permanent community for the purpose of barter. A trading post houses a handful of humans and 100 or so trusted natives. Traders exchange tools and trinkets for valuable produce (usually at exorbitant prices). The most substantial building in a trading post is the fortified warehouse, which also serves as home for human inhabitants of the post. Other than these general details, each post is built to the taste of its owner/operator, and they vary tremendously.

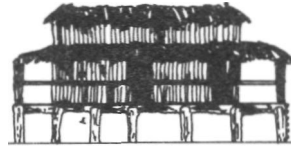
Forts: Since all human settlements are fortified to a greater or lesser extent, the label of fort does not carry much real meaning. Usually it indicates the presence of human soldiers.

THE BRITISH COLONY

THE BRITISH colony has a larger proportion of nomadic Lizard-men, and their plantations tend to be smaller than the German ones. Otherwise, the British plantations are much the same as their German counterparts, except that each plantation will contain only six or seven native villages, and each village has two or three humans permanently assigned for its administration.

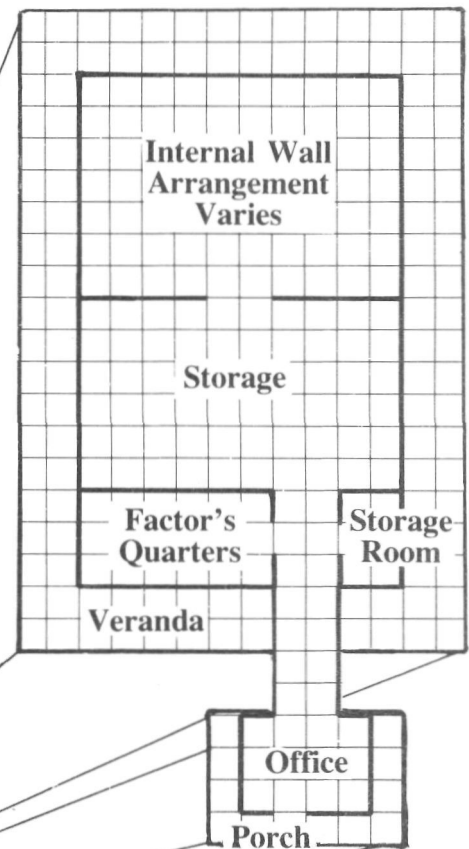
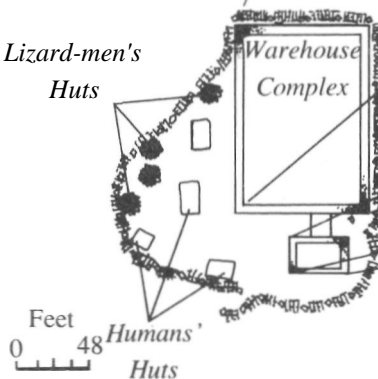
A greater proportion of the British colony consists of unfarmed territory with trading posts scattered throughout. These trading posts are almost identical to German ones.

AN AVERAGE TRADING POST



Most warehouses have a second floor: the same dimensions as the first, but without the veranda. Some have a third floor.

Lizard-men's Huts



THE RUSSIAN COLONY

RUSSIAN COLONIZATION efforts have been primarily focused on the establishment of trading stations, although an increasing number of plantations are using captive labor. The Russians came down in the middle of a war (actually more of a long-standing feud) between two rival tribal groups of Lizard-men (the eastern and western Sappho tribal groupings) and were quick to exploit the situation to their profit. The growing number of Russian plantations (each under the administration of a semimilitary governor) are

worked by captive eastern natives, under western native overseers. It is a situation that is stable over the short term, but has real potential for rapid and violent change.

THE ITALIAN COLONY

THE ITALIAN plantations are a fairly new thing, almost exclusively for cultivation of the Venusian cotton tree. These plantations are closer to the British model than to the German. Italian colonization efforts have been directed primarily at the establishment of trading posts in their enclave, among the relatively docile Lizard-men of the Sappho Plateau.



VENUSSTADT

MAIN FEATURES

KEY

- Paved Street
- Zeppelin Mooring Pylon
- Military Fence

1. Government House: This building houses the governor and his family (in the special wing called the *Eispalast*, or Ice Palace) and the German colonial administrative offices for the *Venus Kolonie*. The building also contains the central exchange for the capital's telephonic communications system, and the main station in the German telegraph system.

2. Government Warehouse: This building houses goods of particular value or importance to the colonial government

3. Zeppelin Landing Field: This is the landing port for interplanetary vessels on Venus. The large hangers surrounding the field provide protection for the fragile ether craft during the planet's infrequent storms.

4. Fort Bismarck: This is the main military base for the German Army on Venus. The two regiments of German troops on Venus alternate duty between Venusstadt and the bush on a monthly basis.

5. The Warehouse District: The warehouses of this quarter of the city contain both cargoes from Venus awaiting shipment to

Earth and cargoes from Earth awaiting sale on Venus. The large buildings labeled W are the warehouses; smaller buildings in and around the district contain shipping company offices.

6. Pension Venus: The largest and most luxurious hotel on Venus, the *Pension* has recently concluded an agreement with Mr. Josephus Martin to cool two of its largest suites using machinery like that in the Ice Palace. The hotel management expects to be able to charge a premium for these rooms once the cooling machinery is installed.

7. Harbormaster's Office: This building is the headquarters for the operation of the Venusstadt port facility.

8. British Legation: This building houses the British envoy to the German colony (a post of less than full ambassadorial status) and his offices. Other staff of the legation rent quarters in various other buildings scattered around the city.

9. Venusbank: Although there are other smaller financial institutions on the planet, the *Venusbank* is the largest and handles fully three-fourths of the mercantile volume of the world.

10. The Exchange: This building houses the commodities exchange for the world. Plantation owners bring their harvests here to sell them, and representatives of the large trading companies operate out of this building.

11. Hotel Brandenburg: The second largest hotel in the city, the Hotel Brandenburg is less expensive than the *Pension Venus*. The building houses the only brewery in town and does considerable trade in beers and ales.

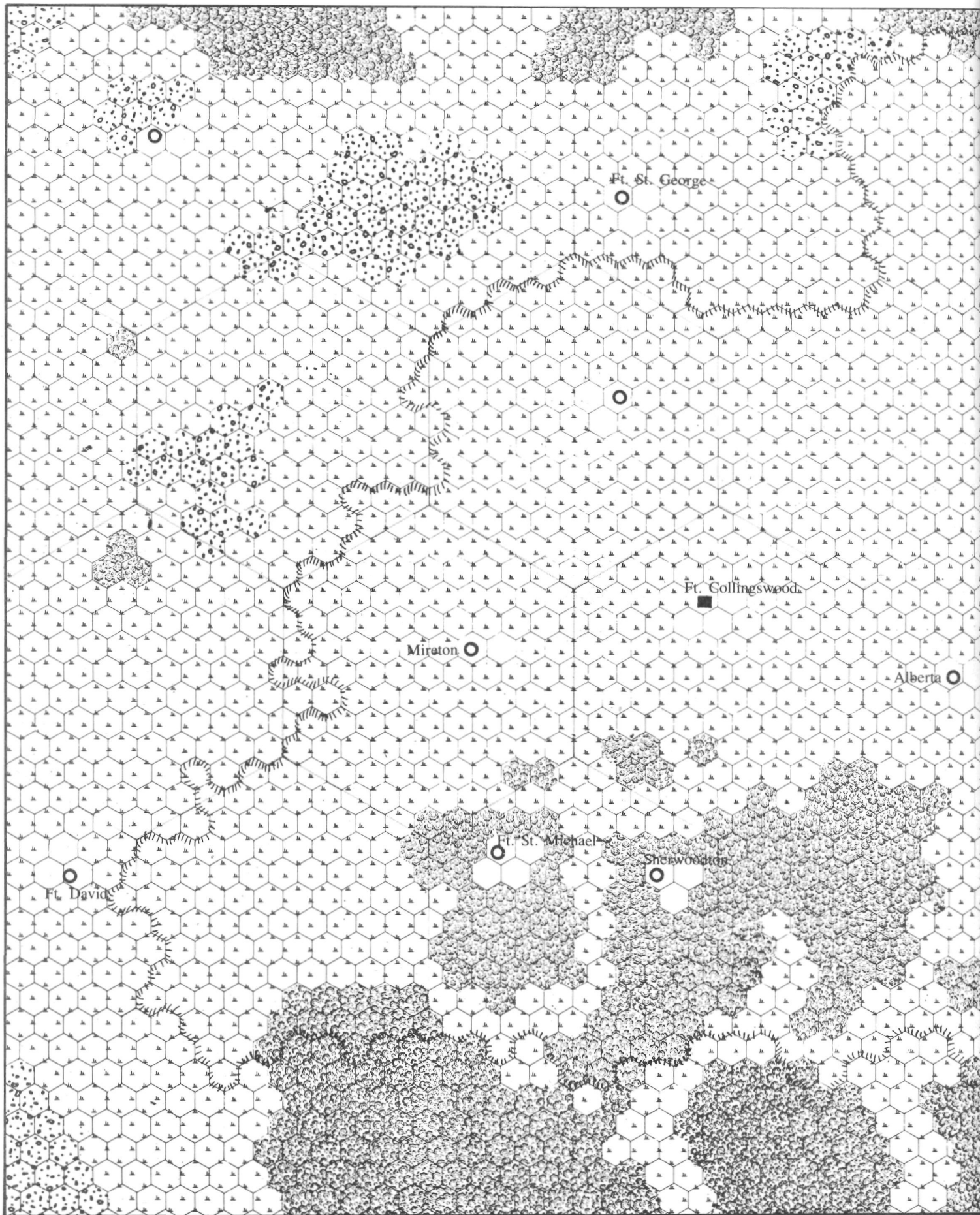
12. Martin's Ice Factory: Mr. Josephus Martin is in the process of building a factory for the production of ice and an insulated warehouse facility for storage of this commodity. Upon its completion, Mr. Martin can expect to become extremely wealthy, as ice is much in demand on Venus.

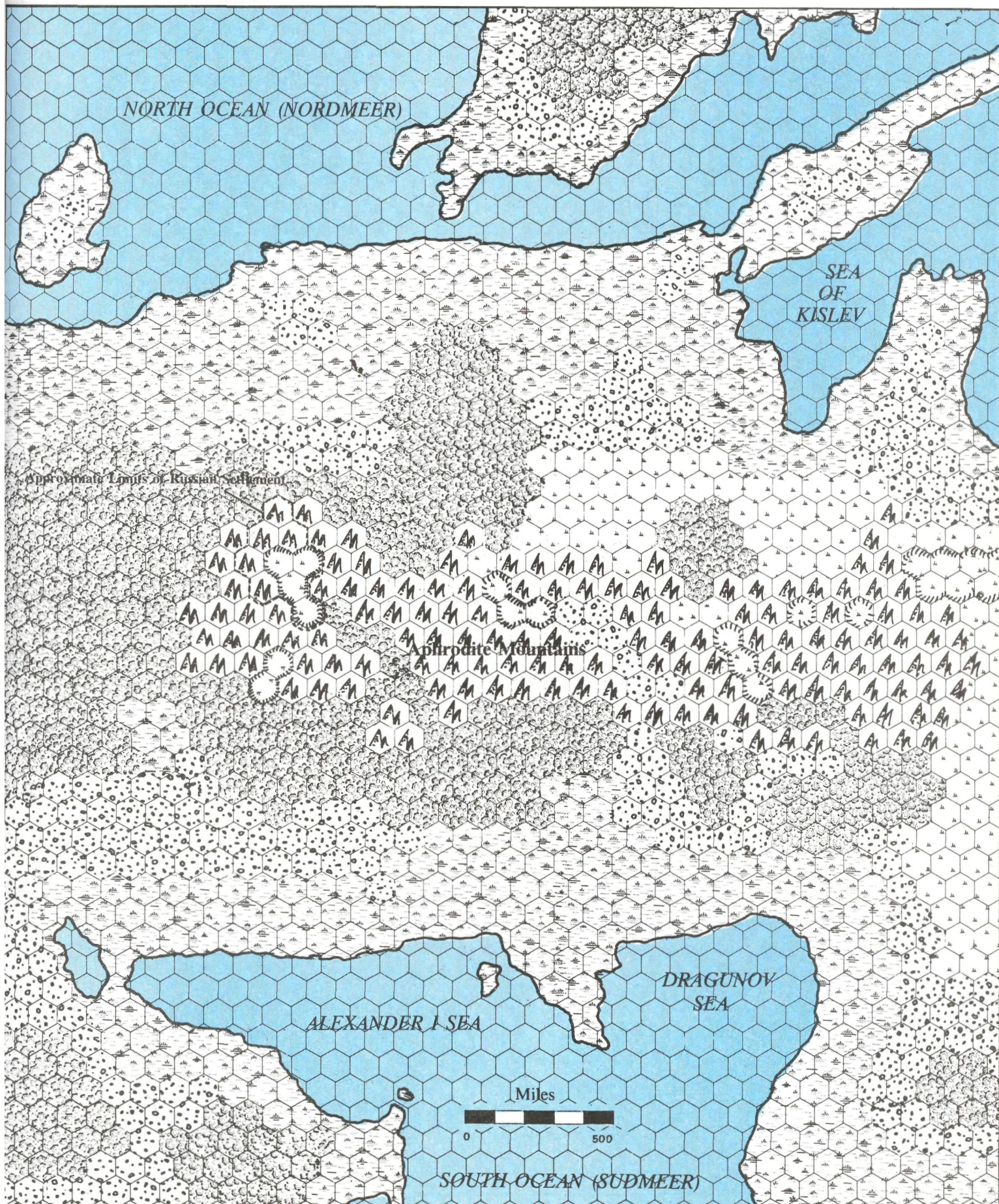
13. Merchants' District: This quarter of the city houses the various shops, stores, and trade establishments that service the colony.

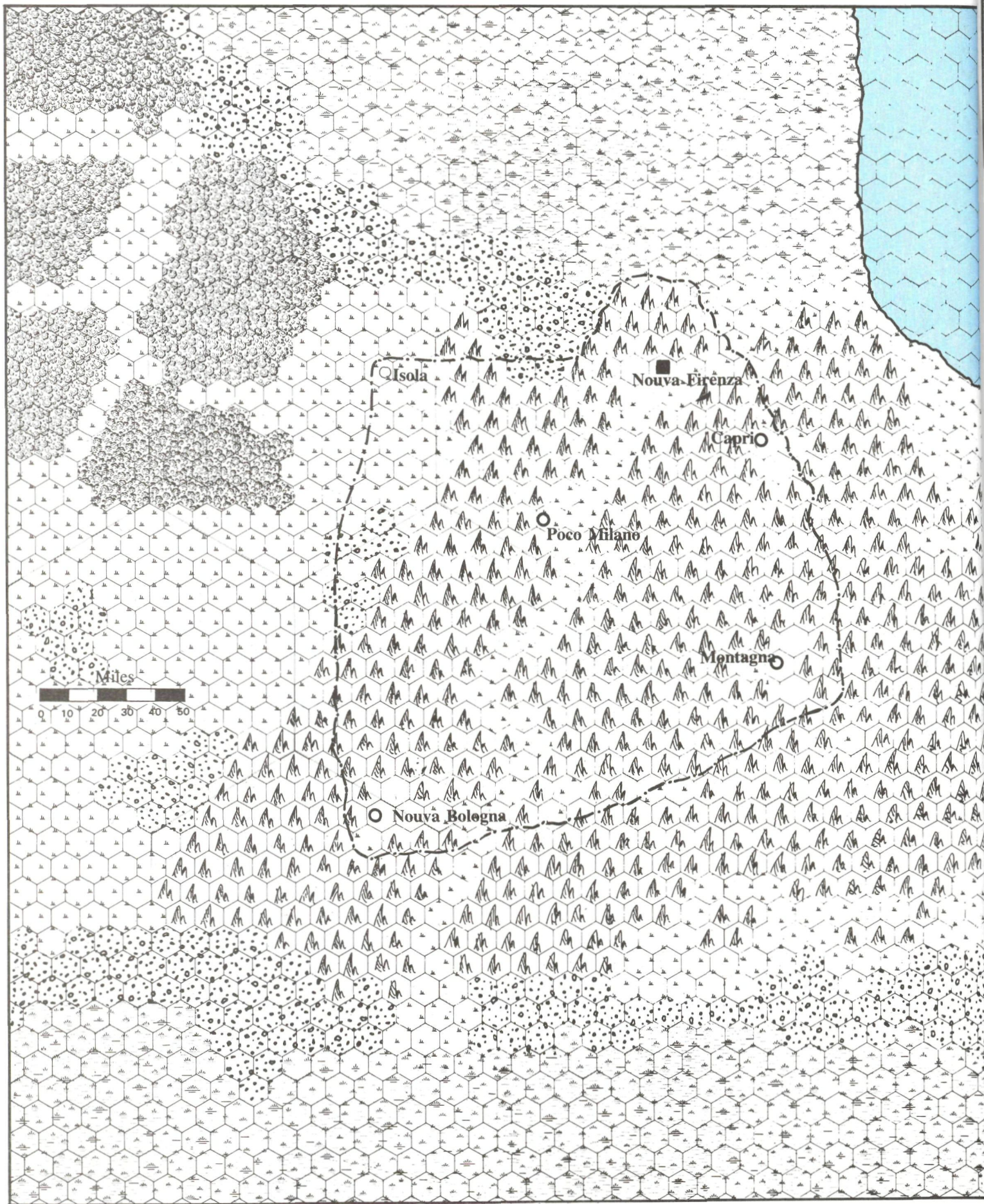
14. Offices: The buildings in this section of the city hold the offices of the major shipping firms and trading companies that do business on Venus.

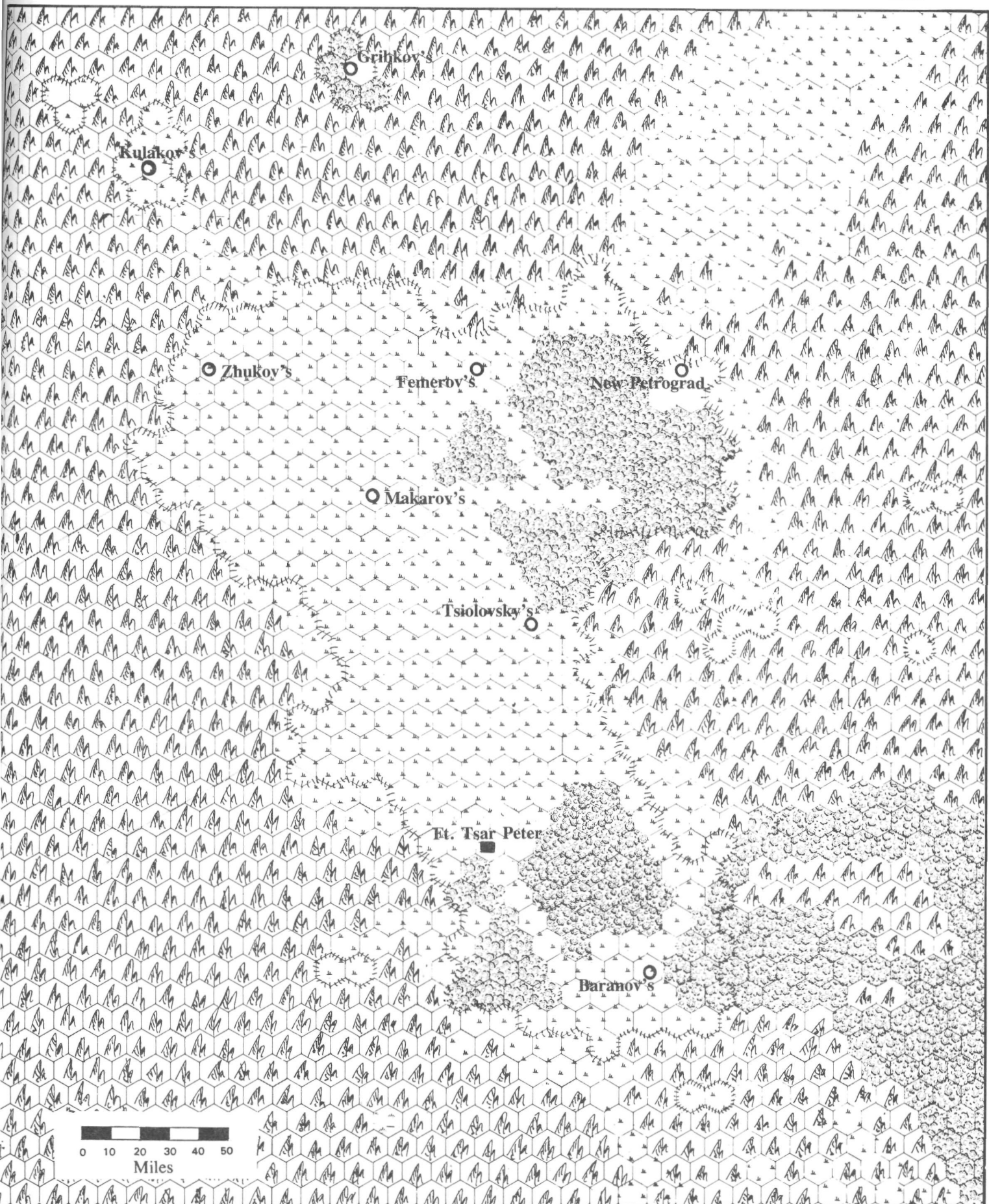
15. The Prison: The prison building is a converted warehouse and is much larger than it needs to be.











NOTES

The known range of the rare plant called the Cytherian Orchid is marked on the map at the left. The eastern and southern limits of this plant have not been fully explored for a number of reasons, primarily its scarcity.

1. Steller's Dragon (*Megalosaurus stelleri*) is one of the exceptions to the general rule that large dinosaurs cannot live in the thinner climate of the highlands. Although the beast can be found throughout the Ishtar Highlands, it is most common in the western and southern reaches of the British colony. The creature is smaller than the average carnosaur, but it is still more than 25 tons in weight and can be a formidable opponent.

2. The largest herbivorous dinosaur on the Ishtar Plateau is the ceratopsian called *Opano* by the natives (*Monoclonius ishtarensis*) and called the *Baumdrängeler* (tree-crusher) by the German colonists. Tree-crushers inhabit the forests along the edge of the Kaiser Wilhelm Mountains, but herds often wander onto German plantations and cause considerable problems. Their large size and heavily armored skulls, coupled with their tendency to travel in herds, make them extremely difficult to deal with.

3. The lowland bogs and jungles are inhabited by much larger creatures than those of the highlands. The largest of these beasts is *Tyrannosaurus giganticus*. *Tyrannosaurus* is the largest of the carnivorous dinosaurs on Venus and presents considerable danger to parties seeking the Cytherian Orchid, whose range overlaps that of the fierce meat-eater.

4. The marshes and wetlands of Venus are not without their dangers, of which the marsh devil (*Diabolus campestris*) presents the greatest hazard to unwary travellers. Resembling a terrestrial crocodile in shape, the marsh devil waits in ambush, lying doggo just below the surface of the marsh. Only the creature's eyes and nostrils are exposed, and these are almost the same color as myriad clumps of bogweed which dot the surface of the creature's habitat. The devil's jaws are almost two feet across and possess rows of sharp teeth capable of severing a limb with lightning speed. Marsh devils are a major danger to travellers anywhere in the coastal marshes of the settled north, but they seem particularly prevalent in the littoral region west of Lake Heidelberg.

5. Heidelberg's expedition collected a number of specimens of a large flying reptile which he named *Wurger* (butcher-bird). This pterosaur was later classified *Truciornis raptor* and is the largest known flyer on the world. It weighs about 35 pounds and has a wingspan of nine feet.

6. A large creature called the sailback (*Dimetredon gulensis*) inhabits the lowlands south and southwest of the Gula Highlands on the Eisila Peninsula. Precise relationships have not been established, but the creature is carnivorous, and its large size (about 16 feet in length) makes it a nasty customer.

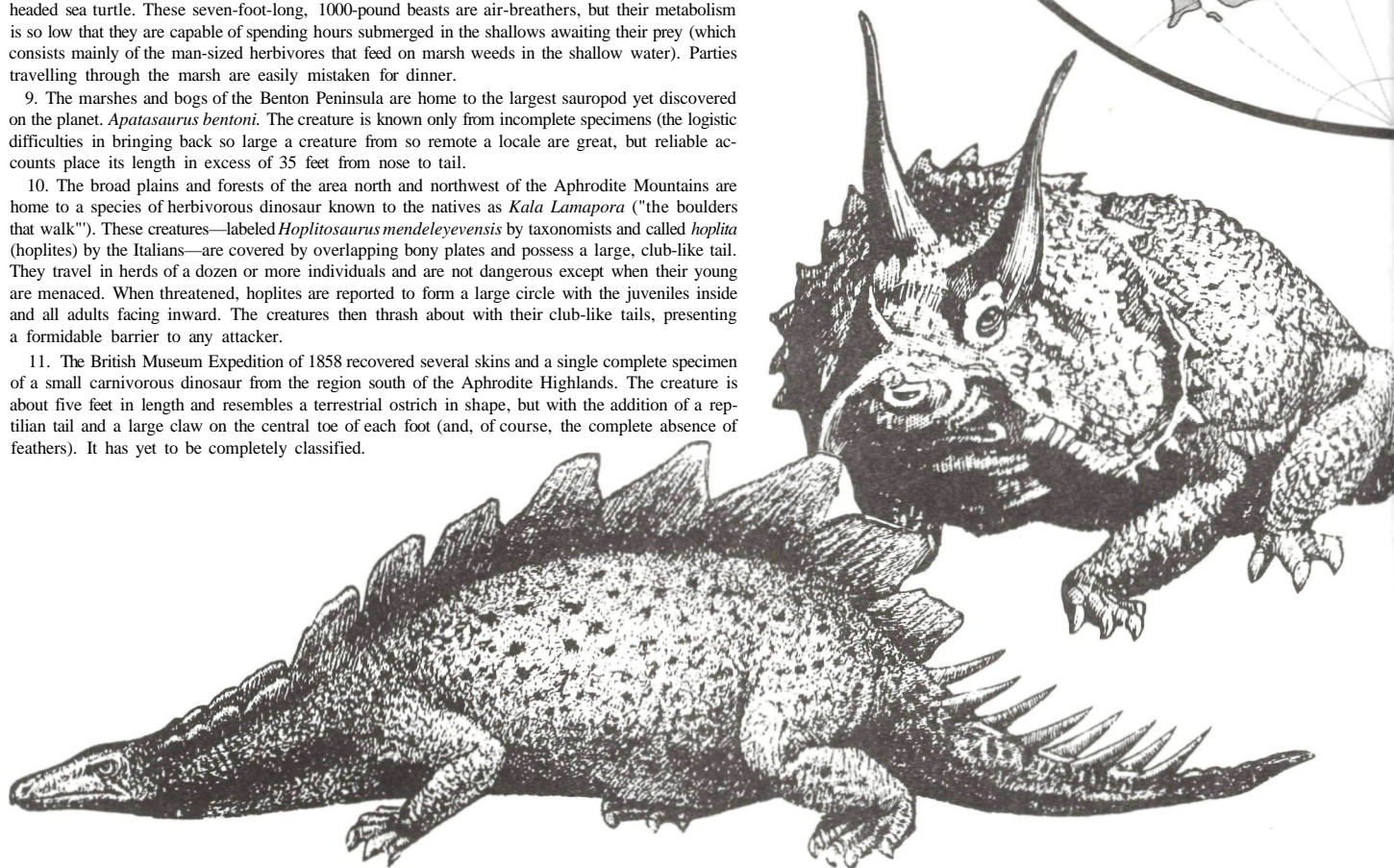
7. The North Ocean is the habitat for Mackenzie's Leviathan, a large plesiosaur which is quite rare but, nevertheless, is extremely dangerous to surface ships when it is encountered. Bodies of the creatures occasionally wash up on shore, and several complete skeletons were recovered in 1885 by the Carnegie Museum Expedition of that year.

8. The shallow waters northeast of MacKenzie's Island are home to *Chelonia laticephala*, the white-headed sea turtle. These seven-foot-long, 1000-pound beasts are air-breathers, but their metabolism is so low that they are capable of spending hours submerged in the shallows awaiting their prey (which consists mainly of the man-sized herbivores that feed on marsh weeds in the shallow water). Parties travelling through the marsh are easily mistaken for dinner.

9. The marshes and bogs of the Benton Peninsula are home to the largest sauropod yet discovered on the planet. *Apatasaurus bentoni*. The creature is known only from incomplete specimens (the logistic difficulties in bringing back so large a creature from so remote a locale are great, but reliable accounts place its length in excess of 35 feet from nose to tail).

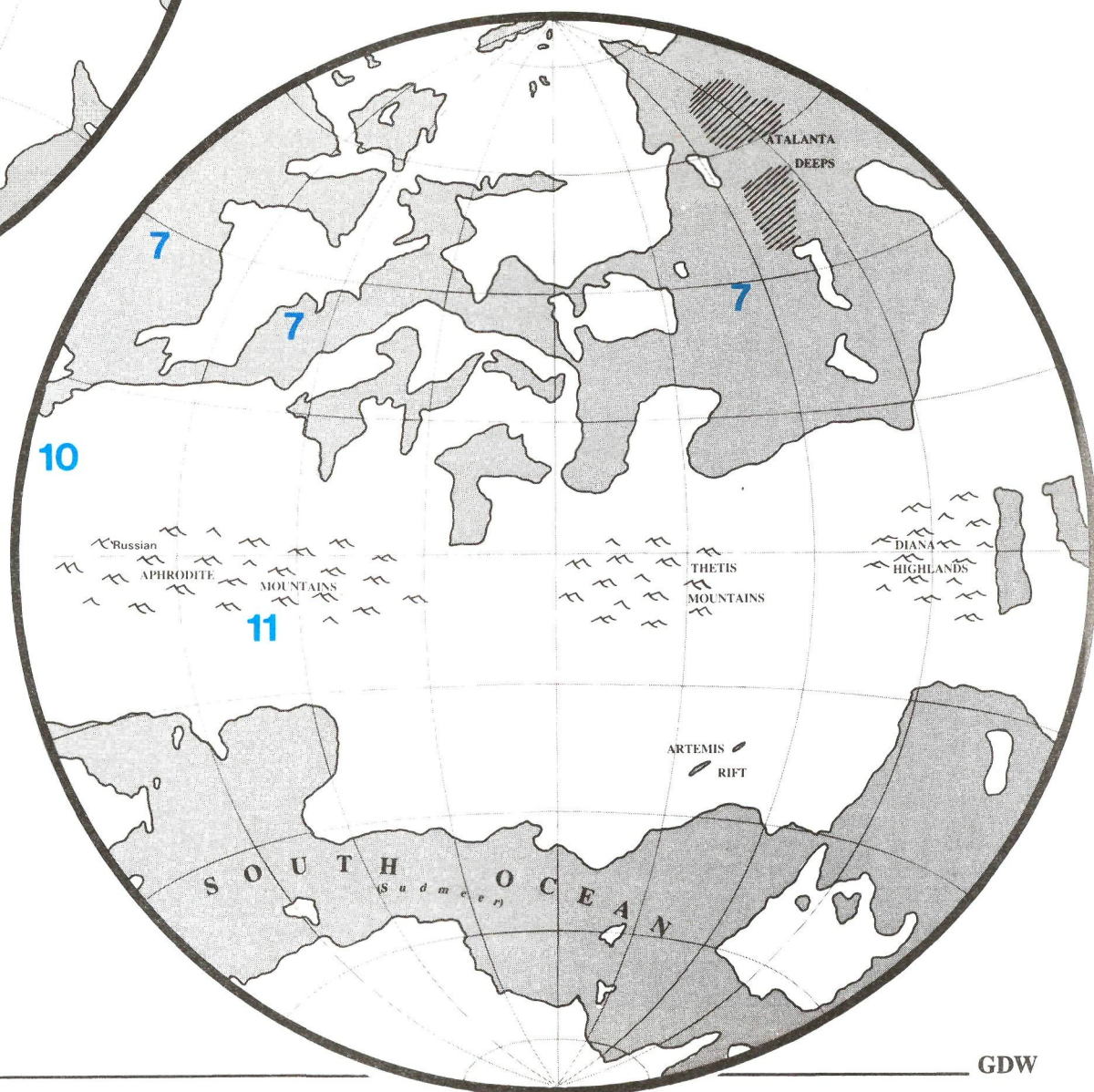
10. The broad plains and forests of the area north and northwest of the Aphrodite Mountains are home to a species of herbivorous dinosaur known to the natives as *Kala Lamapora* ("the boulders that walk"). These creatures—labeled *Hoplitosaurus mendeleyevensis* by taxonomists and called *hoplita* (hoplites) by the Italians—are covered by overlapping bony plates and possess a large, club-like tail. They travel in herds of a dozen or more individuals and are not dangerous except when their young are menaced. When threatened, hoplites are reported to form a large circle with the juveniles inside and all adults facing inward. The creatures then thrash about with their club-like tails, presenting a formidable barrier to any attacker.

11. The British Museum Expedition of 1858 recovered several skins and a single complete specimen of a small carnivorous dinosaur from the region south of the Aphrodite Highlands. The creature is about five feet in length and resembles a terrestrial ostrich in shape, but with the addition of a reptilian tail and a large claw on the central toe of each foot (and, of course, the complete absence of feathers). It has yet to be completely classified.





The Flora and Fauna of VENUS



LIFE ON VENUS: A TREATISE ON FLORA AND FAUNA

IN GENERAL, life on Venus is simpler, more primitive, and less well developed than life on Earth. There are no higher forms (such as mammals or birds), and flowering plants are more primitive than their terrestrial counterparts.

Plants

THE PLANTS OF Venus are very similar overall to those of the jungles and rain forests of Earth, although, of course, they differ in particular details. Several varieties are of economic value to humans, but those cultivated on plantations are not likely to be of overwhelming interest, and we have not described these.

Cytherian Orchid: Famed for its beautiful colors and surprisingly delicate fragrance, the Cytherian orchid is also quite scarce. Many travellers have perished in search of this rare blossom, which has not proven amenable to cultivation. The known range of the Cytherian orchid is marked on the map on page 28. The eastern and southern limits of this plant have not been fully explored.

Oma Jolima (Mother-of-Weapons): This plant has been found throughout the explored areas of Venus. Six different species have been identified, but these are of interest only to botanists.

Land Life

LIKE THE continent of Africa on Earth, the world of Venus is not completely explored. Here we briefly discuss a few of the more interesting animals of the wet planet.

Steller's Dragon: Steller's Dragon (*Megalosaurus stelleri*) is one of the exceptions to the general rule that large dinosaurs cannot live in the (relatively) cooler climate of the highlands. Although the beast can be found throughout the Ishtar Highlands, it is most common in the western and southern reaches of the British colony.



Tree-Crusher: The largest herbivorous dinosaur on the Ishtar plateau is the ceratopsian called *Opano* by the natives (*Monoclonius ishtarensis*), and called the *Baumdrangler* (tree-crusher) by the German colonists. Tree-crushers inhabit the forests along the edge of the Kaiser Wilhelm Mountains, but herds often wander onto plantations and cause considerable problems. Their large size and heavily armored skulls, coupled with their tendency to travel in herds, make them extremely difficult to deal with.

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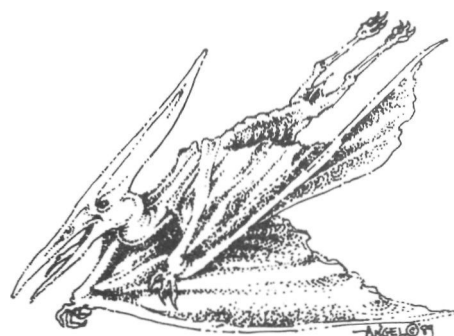
Apatosaurus: The marshes and bogs of the Benton Peninsula are home to the largest sauropod yet discovered on the planet, *Apatosaurus bentoni*. The creature is known only from incomplete specimens (the logistic difficulties in bringing back so large a creature from so remote a

locale are great), but reliable accounts place its length in excess of 35 feet from nose to tail.

Hoplites: The broad plains and forests of the area north and northwest of the Aphrodite Mountains are home to a species of herbivorous dinosaur known to the natives as *Kala Lamapora* ("the boulders that walk"). These creatures (labeled *Hoplitosaurus mendeleyevensis* by taxonomists and called *hoplita* (hoplites) by the Italians, are covered by overlapping bony plates and possess a large, club-like tail. They travel in herds of 12 or more, and are not dangerous except when their young are menaced. When threatened, hoplites are reported to form a large circle, with the juveniles inside and all adults facing inward. The creatures then thrash about with their club-like tails, presenting a formidable barrier to any attacker.

Aerial Life

Butcher-Bird: Heidelberg's expedition collected a number of specimens of a large flying reptile which he named *Wurger* (butcher-bird). This pterosaur was later classified *Truciornis raptor* and is the largest known flyer on the world, with a wingspan of nine feet and weight of about 35 pounds.



Aquatic Life

MacKenzie's Leviathan: The North Ocean is the habitat for MacKenzie's Leviathan, a large plesiosaur which is quite rare, but nevertheless is extremely dangerous to surface ships when it is encountered. Bodies of the creature occasionally wash up onshore, and several complete skeletons were recovered in 1885 by the Carnegie Museum expedition of that year.

White-Headed Sea Turtle: The shallow waters northeast of MacKenzie's Island are home to *Chelonia laticephala*, the white-headed sea turtles. These seven-foot-long, 1000-pound beasts are air-breathers, but their metabolism is so low that they are capable of spending hours submerged in the shallows awaiting their prey (which consists mainly of the man-sized herbivores which feed on marsh weeds in the shallow water). Parties travelling through the marsh are easily mistaken for dinner.

Type	#App	Size	Move	Wnds	Save	Wt. (lbs)	Weapons
Steller's Dragon	1	1 x 3	L24	20	—	25 tons	Teeth (3, 2, 0, 3) Tail (1, 2, 3, 1)
Tree-Crasher	1D6x3	2 x 4	L10	30	2	20 tons	Horns (1, 2, 3, 3)
Tyrannosaurus	1	2 x 4	L16	40	1	40 tons	Teeth (2, 2, 2, 6) Tail (1, 2, 3, 3) Crush (1, 1, 3, 6)
Marsh Devil	1	1 x 3	L10	15	1	500	Teeth (1, 2, 0, 1) Tail (1, 1, 1, 1)
Sailback	1	1 x 3	L12	25	1	10 tons	Teeth (2, 1, 0, 2) Tail (1, 2, 2, 1)
Apatosaurus	1D6x3	2 x 5	L10	40	1	40 tons	Teeth (1, 2, 2, 3) Tail (1, 2, 3, 3) Crash (1, 1, 1, 6)
Hoplite	1D6	2 x 4	L12	30	2	18	Tail (2, 2, 3, 3)
Butcher-Bird	1D6x1	2 x 2	F30	1	—	35	Talons (2, 3, 1, 1)
MacKenzie's Leviathan	1	2 x 6	W20	30	1	20 tons	Teeth (1, 2, 1, 3) Tail (1, 1, 3, 3)
White-Headed Sea Turtle	1	2 x 2	W12	20	2	1000	Teeth (1, 1, 0, 3)

James MacKenzie, sole survivor of the ill-fated 1873 Expedition, reported several encounters while adrift on one of the ocean areas south of the area which now contains the British and German colonies. These creatures are noted in items 1-3 inclusive.

1. MacKenzie reported several encounters with a large sea turtle, with a shell over 18 feet in diameter. Although the creature never attacked MacKenzie's floating craft, the description of its teeth and jaws leads Professor Champion of the British Museum to believe it to be carnivorous. Lizard-men report that such a creature does exist (they call it *Nomele Paleinnu* "overturner of rafts") and presents a serious hazard to long-distance marine navigation, but no specimen has yet come to light.

2. MacKenzie reported being attacked by a large serpentine monster over five rods (18 feet) in length. The beast was frightened off by the noise of several rifles discharged in volley and was never seen again. No mention of this creature has been uncovered by students of Lizard-man lore, and no specimen has been discovered, leading some experts to pronounce it extinct. Others believe its natural range is elsewhere on the planet.

3. MacKenzie states that two members of his party were snatched from their drifting conveyer by a giant tentacled creature similar to a squid or octopus. Quick action by the remainder of the party saved another man by cutting him loose before he could be dragged under by the monstrosity. The tentacles were reported to be at least two hand-spans across and of a rubbery consistency.

4. While MacKenzie was living among the Lizard-men of his island namesake, he saw teeth and a skull from a very large flying creature, which he named the Venusian Roc (Lizard-men call it *Opeme u Mola*, "screamer in the sky"). Subsequent expeditions to MacKenzie's Island were unable to locate any trace of the creature other than a few fragments of teeth, leading some experts to pronounce it extinct. Others believe its natural range is elsewhere on the planet. Local legends credit the creature with the ability to carry off beings as large as an adult Lizard-man.

5. Lizard-men tell of a giant crocodile inhabiting the waters south of the Hestia Highlands.

6. An American trader recently returned from the region of the Hathor Mountains with a unique war club he had acquired in trade from the local natives. This club had been inset with several diamond fragments of incredible size, which the native claimed had been in his family for generations and were supposed to have been found by an ancestor in the mouth of a nearby volcano.

7. Native legends speak of extensive subsurface caves in the bowels of the Ganis Mountains.

8. Natives from the region north of the Russian enclave report the existence of a large carnivorous plant capable of swallowing a human victim.

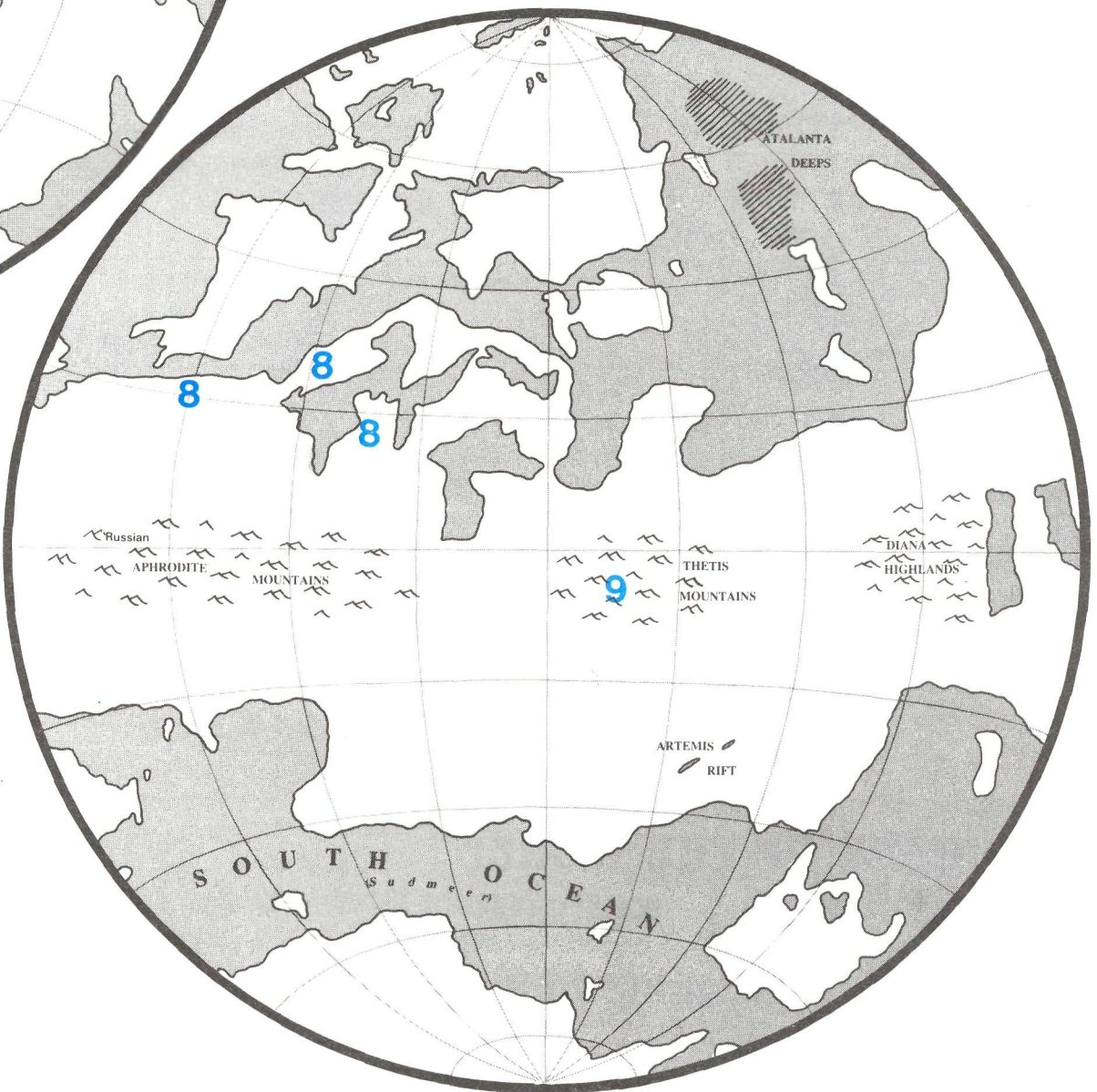
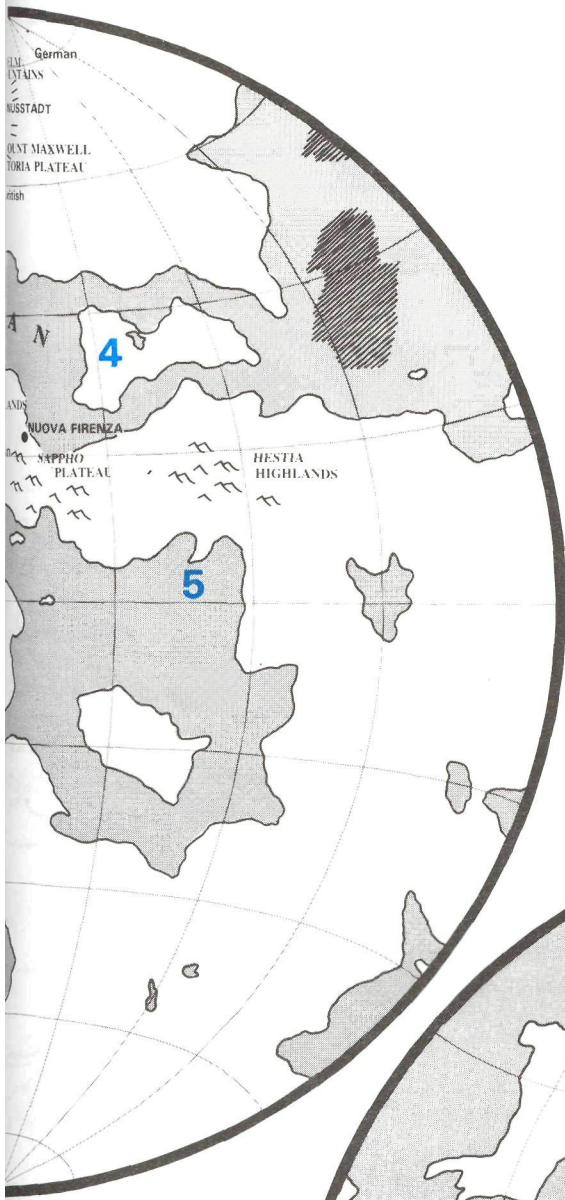
9. A Russian trading expedition to the Thetis Mountains brought back a legend of huge ruined cities of stone, supposedly built by a race called *Nahe Gadewalu*, "the old ones."

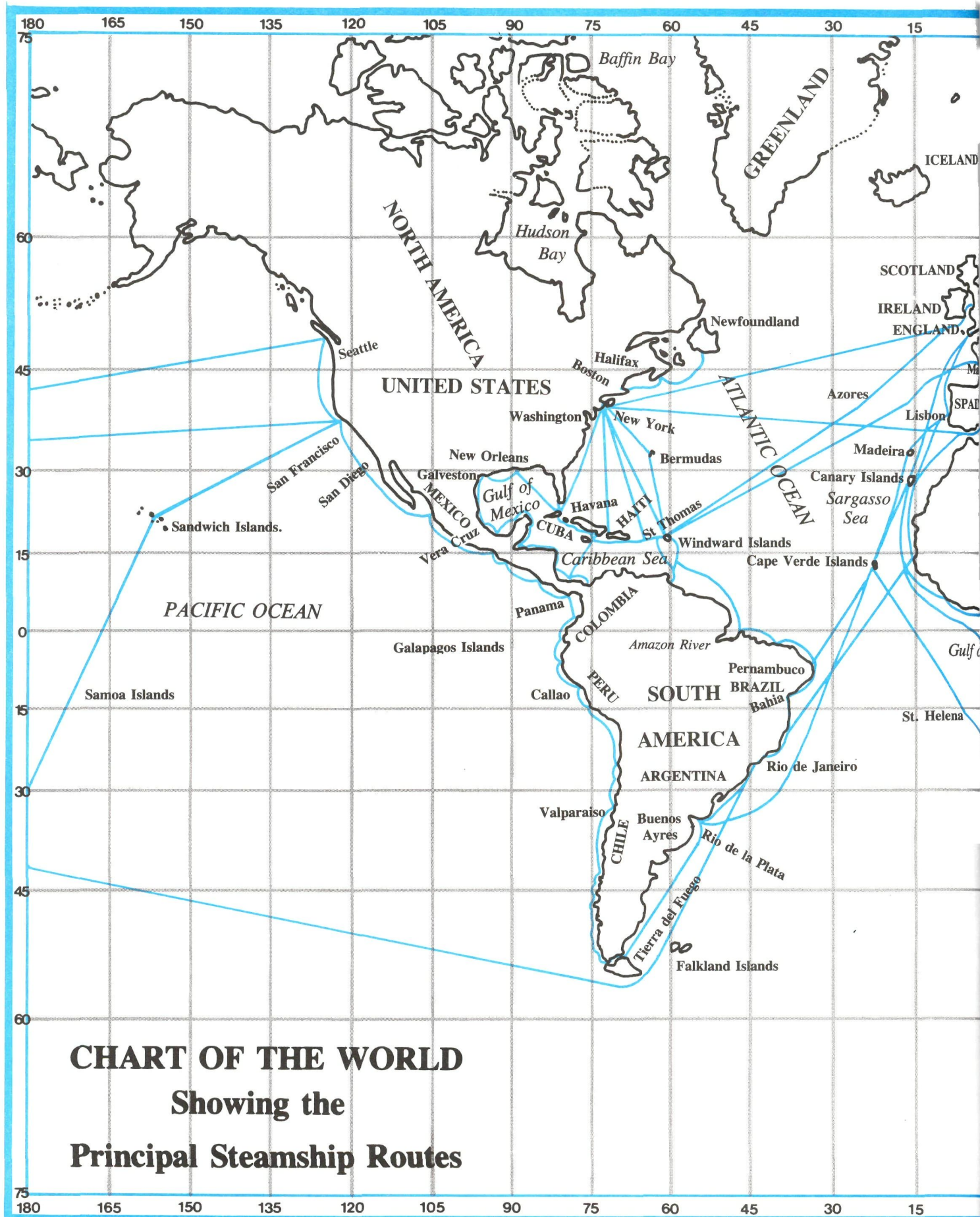


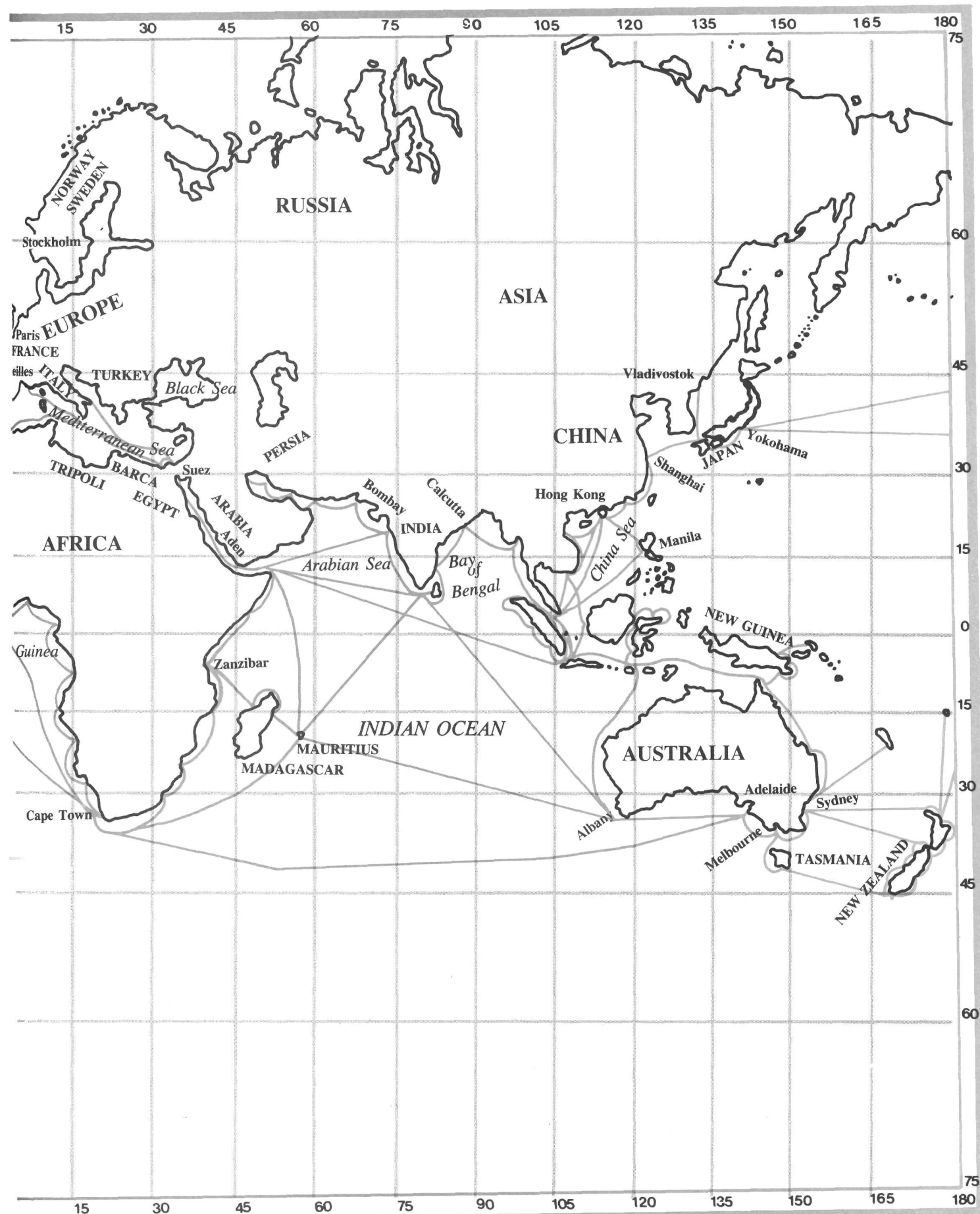
Enigmas, Legends, and Mysteries of

VENUS

0 1000 2000 3000
Miles







STEAMSHIP TRAVEL

THE MAP ON page 34 shows the major steamship routes of the world. Despite the advent of hydrogen dirigibles and liftwood flyers, steamships remain the most common means for long-distance travel on Earth. A measure of their importance to the commerce of the world can be gathered by examining the numbers of ships in the service of the six greatest mercantile nations of the world and the annual volume of trade carried (as shown in the accompanying table located at the bottom of the page).

Given the excellent state of American transcontinental railroads and regular steamship service, it is now possible for a traveller to leave London, circumnavigate the globe, and arrive back at London in 85 days (not far off the 80 days considered a nearly-impossible feat only a few years ago). The major parts of this voyage consist of a 71-day steamer voyage from London to San Francisco by way of the Suez Canal, a six-day transcontinental train trip from San Francisco to New York, and an eight-day steamer voyage from New York to London. The steamer passage for the first leg of

this voyage will cost approximately £120, the train fare will be \$200.00 (£40), and the steamship fare from New York to London will be £20, for a total of less than £200. The times and prices of the individual segments of the voyage from London to San Francisco are given in the sidebar on the facing page to the extreme right.

PORTS OF CALL

THE FOLLOWING brief notes are reprinted from *Scribner's Magazine* and represent a brief commentary to the casual traveller on some of the more exotic ports of the world. The list is by no means exhaustive, but it is hoped that these colorful comments will enable travellers to anticipate the sorts of experiences they are likely to encounter at various ports.

Gibraltar

A STAY OF 4 hours will allow a short run on shore. A drive around the superb Rock is worth the taking, also a visit to the battery, where the 16-inch guns keep watch over the threshold of the blue sea. Loquacious guides tell of an under-the-sea tunnel between the fortress and Apes Hill, Africa, through which monkeys

have passed, and that once upon a time five venturesome sailors started down this subway; three of them soon turned back, the others never being heard from again.

Port Said

PORT SAID, the product of the canal, is built on the flat sands at the entrance of the Suez Canal. Its harbor, formed by two long breakwaters, contains one of the largest coaling depots in the world, where vessels are supplied at the rate of 200 tons an hour. The place is noted for its wickedness; it abounds in French cafes and dance-halls where wine, women, and music continue the night long. The traveller should purchase a white helmet at Port Said; these hats are cheap, and add considerably to personal comfort.

Aden

ADEN, ON its rocky and bare volcanic peninsula, is the Gibraltar of the Red Sea. It interests the traveller because of the powerfully built Somali natives, Arab and Jewish merchants, and the thin, ungainly camels moving up and down the streets. The town is far too hot for enjoyment; it is better to stay on board ship, buy an imitation ostrich feather from a cheating street vendor, and throw coppers into the water for native boys to dive after.

Bombay

IMMEDIATELY UPON arrival the traveller should hurry ashore to gaze with wonder at the infinite variety before him. For here are congregated Indian princes dressed in flowing robes of richest colors, Brahmins and Buddhists with turbans of softest texture bound about their

ANNUAL VOLUME OF TRADE

Country	Number of Steam Vessels	Gross Tons	Value of Vessels (£)	Value of Trade Carried in Vessels (£)
Great Britain	6403	8,235,854	110,000,000	6,953,000,000
Germany	741	928,911	12,700,000	324,000,000
France	526	809,598	9,700,000	294,200,000
United States	416	517,394	8,400,000	292,500,000
Italy	212	300,625	4,400,000	83,000,000
Russia	236	106,155	2,500,000	12,000,000

brows; Parsees in long white full-skirted coats and odd-shaped high hats; Turks in fezes; Chinamen in silks; Persians in white trousers, loose alpaca coats, and shako astrakhan hats; Cinghalese, Jews, Mohammedans, and Europeans from England, France, Germany and Russia.

Colombo, Ceylon

COLOMBO HAS much to attract the traveller during the 24 or 48 hours the steamer stays, but usually the Oriental Hotel claims his time and attention, for this is the place of meeting of all who go upon the waters, and high wassail is apt to be the order of the night. The dining room of the Oriental is the refreshment-room at the intersection of the chief steam lines of the world. It is, as it were, the restaurant of a Union depot where everyone must go for a meal; at its tables travellers from opposite points of the world meet, Chinese bound for Europe, Englishmen to report for Indian duty, French soldiers en route for Saigon, and Australians making the grand tour.

Singapore

SINGAPORE IS the half-way house on the great highway between India and China, where all ships, large and small, stop. Its position is an important one, not only as a large coaling and docking station, but to a greater extent as an immense entrepot for goods, the trade being largely one of transit. The shipping business done is enormous; the docks and streets are full of bustle and activity, of hurrying, running, hard-working Chinese, Javanese, Moluccans, and Europeans, unmindful of a temperature averaging 86 degrees Fahrenheit.

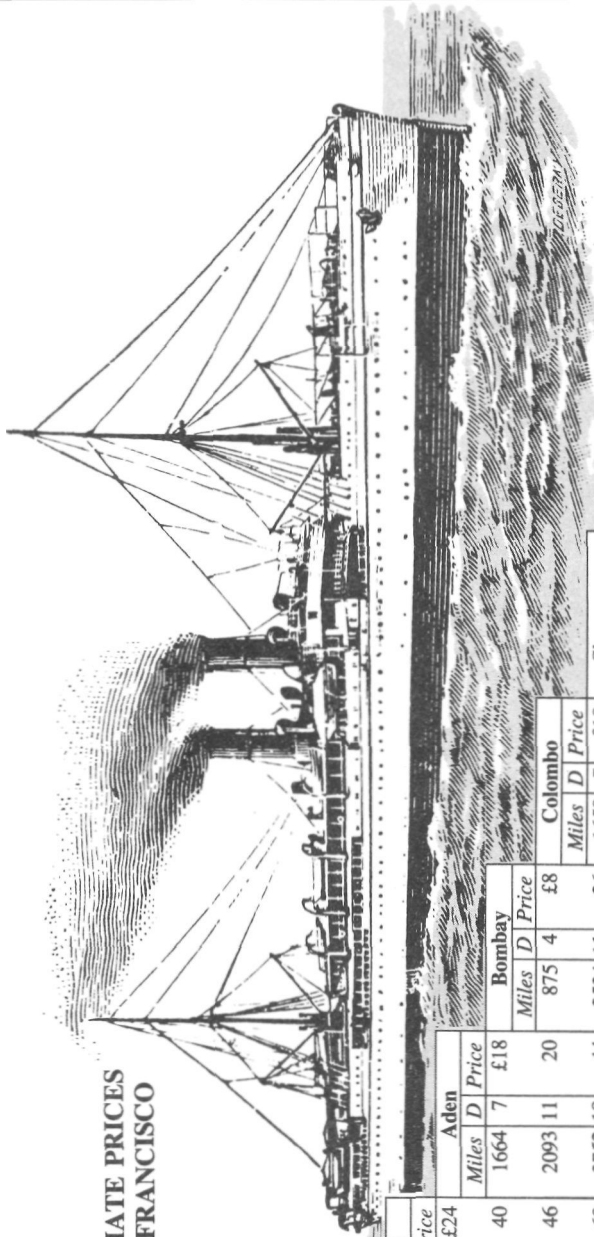


TABLE OF DISTANCES, DAYS, AND APPROXIMATE PRICES FROM LONDON EASTWARD BY SEA TO SAN FRANCISCO

London		Gibraltar		Malta		Port Said		Aden		Bombay		Colombo		Singapore		Hong Kong		Yokohama		San Francisco	
Miles	D	Miles	D	Miles	D	Miles	D	Miles	D	Miles	D	Miles	D	Miles	D	Miles	D	Miles	D	Miles	D
1299	5	981	4	935	4	1395	7	1664	7	875	4	1659	7	1437	7	1802	8	5000	18		
2280	9	1916	8	2330	11	3059	14	2093	11	2534	11	3096	14	3239	15	6800	26				
3215	13	3311	15	4423	22	3488	18	3752	18	3971	18	4898	22	8240	33						
4610	20	4975	22	6082	29	5147	25	5189	25	5773	26	9900	40								
6274	27	5404	26	7519	36	6584	32	6991	33	10,775	44										
6703	31	7063	33	9321	44	8386	40	12,460	51												
8362	38	8500	40	14,800	62	13,860	58														
9799	45	10,302	48	18,000	70	15,780	66														
11,601	53																				
16,600	71																				

Notes: D stands for days.
From New York to London is 3000 miles, seven or eight days, and £20.
From San Francisco to New York by rail is 3000 miles, six days, and £40.





THE BALKAN POWDER KEG

BELOW IS A key to the European map. The numbered provinces on the map are shown below. Important cities of the province are shown in parentheses.

1. Montenegro.
2. Sandjak (Novi Pazar).
3. Serbia (Belgrade).
4. Albania.
5. Graustark (Uskub).
6. Ruritania (Nish).
7. Wallachia (Bucharest).
8. Moldavia (Iasi).
9. Dobrujda.
10. Bulgaria (Sofia).
11. Trans-Balkania.
12. Eastern Rumelia (Stara Zagora).
13. Epirus.
14. Macedonia.
15. Rumelia.
16. Thrace (Adrianople).
17. Greece (Athens).
18. Thessalonika (Salonika).
19. Bessarabia.
20. Herzegovina (Sarajevo).
21. Bosnia.
22. Croatia.
23. Banat.
24. Transylvania.
25. Dalmatia.

THE STATES OF EUROPE

THE FOLLOWING nations comprise the European body politic.

The United Kingdom

THE UNITED KINGDOM is arguably the most powerful nation on the face of the planet. The reigning monarch of the United Kingdom is, of course, Queen Victoria. In addition to vast colonial holdings in India, Africa, Mars, and Venus, Britain retains smaller territorial enclaves in the West Indies, the South Seas, the Middle East, and the Mediterranean. A signatory (along with Italy and Austria-Hungary) of the Mediterranean Agreements of 1887, Britain maintains important naval bases at Gibraltar, Alexandria, and Malta, and obtained sovereignty over the island of Cyprus as a result of the Congress of Berlin. However, Germany's overseas expansionist aims, coupled with Austrian designs on the Balkans, are a source of increasing concern.

Population: (England, Scotland, Wales) 37 million.

Allies: None of any importance.

Enemies: At various times and in different areas—Russia, France, Austria-Hungary, and Germany.

Aims: Stability.

France

FOLLOWING CRUSHING defeat in the Franco-Prussian War of 1870, the 2nd Empire of Napoleon III fell and was replaced by the 3rd Republic, with the current president being M. Sardi-Carnot. While public sentiment was strongly in favor of recovery of the lost provinces of Alsace and Lorraine, Chancellor Bismarck's skillful policy of alliances

meant that France would stand alone in any conflict with Germany and would certainly lose (although increasing friction between Germany's ally Austria-Hungary and the Russian Empire have made Russia increasingly open to French diplomatic overtures). In reaction to continental frustration, the military has undertaken a vigorous policy of colonial expansionism in Africa and Asia, and on Mars.

Population: 41 million.

Allies: Russia, under certain limited circumstances.

Enemies: Britain, Germany.

Aims: Reestablish France as a respected world power.

Italy

ITALY HAS only existed as a unified state since the middle of the century. The reigning monarch is King Umberto I, and the government under Prime Minister Crispi is currently pursuing a vigorous colonial policy for reasons similar to those of France. Although France assisted Italy in gaining its independence from Austria, France is in an eclipse while the German star shines brightly. Crispi has deliberately sought an alliance with Germany (and thus also with Austria-Hungary), but needs foreign adventures to distract the attention of the Italian citizenry from the northern borders. Austria-Hungary still holds territory inhabited by ethnic Italians, and irredentist sympathy (a desire for the return of these territories to Italy) runs high. The fighting in Eritrea and Abyssinia, and on Venus is intended to counter this.

Population: 34 million.

Allies: Germany, Austria-Hungary.

Enemies: None.

Aims: Expansion of colonial empire, particularly in Abyssinia and Tripoli.

Germany

THE POLICIES of crafty old Chancellor Bismarck have provided the German empire with a dense web of alliances which have virtually isolated France, her traditional enemy. The centerpiece of this system is the Triple Alliance consisting of Germany, Austria-Hungary, and Italy. Several smaller countries have joined the treaty system as well, most notable among them being Romania. Although Russia and Britain are becoming increasingly hostile, traditional animosity between them prevents formation of a genuine alliance, as does the traditional hostility between Britain and France.

Population: 57 million.

Allies: Austria-Hungary, Italy, Romania.

Enemies: France, United Kingdom.

Aims: Expansion of the colonies.

THE BALKAN POWDER KEG

THE FOLLOWING states exert sovereignty over part of the Balkans.

Bulgaria

BULGARIA IS an independent principality formerly part of the Ottoman Empire, but it gained considerable autonomy following the Russo-Turkish War of 1877-78. By the terms of the Treaty of San Stephano (March 1878), Bulgaria became independent and also gained the territories of Macedonia, Rumelia, Eastern Rumelia, and Trans-Balkania. All additional territories were then stripped from Bulgaria

four months later at the Congress of Berlin, but Bulgaria retained its independence. In 1885 Bulgaria seized Eastern Rumelia and (along with its ally, Ruritania) fought a short, victorious war against Serbia and Trans-Balkania in defense of its new territory.

The ruler of Bulgaria is King Ferdinand I (the Saxe-Coburg dynasty), and his prime minister is the talented Stambulov, "The Bulgarian Bismarck." Although Bulgaria owes its independence to the Russian attack on Turkey, Stambulov has steered the country in a pro-western and anti-Russian direction, and is responsible for "Europeanizing" the government, army, economy, and administrative bureaucracy. But a strong pro-Russian sentiment remains among the people.

Population: 4 million.

Allies: Ruritania.

Enemies: Turkey, Russia, Serbia, Trans-Balkania.

Aims: Recovery of Macedonia, Rumelia, and Trans-Balkania.

Romania

THE ROMANIAN state was established in 1861. It consisted of the former Turkish territories of Moldavia and Wallachia, and later the Dobrujda, but Romania resented Russia's seizure of Bessarabia following the Russo-Turkish War. In 1881 it became a kingdom and chose Carol I (of the house of Hohenzollern-Singamaringen), then 15 years old, as its first king. In 1883 it joined the Dual Alliance (of Prussia and Austria-Hungary).

Population: 7 million.

Allies: Prussia, Austria-Hungary.

Enemies: Russia.

Aims: Acquisition of Bessarabia.

Serbia

THE LAST Turkish garrisons withdrew from Serbia in 1862, and afterward Serbia was ruled by the autocratic King Milan Obrenovic (1882). A liberal constitution was introduced in 1869 and has been ignored by the regime ever since. In 1885 an unsuccessful war was fought against Bulgaria and Ruritania. The main opposition to the regime is by the Radical party, led by the Slavic nationalist, Nikola Pasic. Milan Obrenovich has recently abdicated in favor of his son, who was crowned King Alexander I. While the king courts Austrian favor to strengthen his hand against his internal enemies, the popular sentiment for south Slavic freedom grows.

Population: 3 million.

Allies: Austria-Hungary, Trans-Balkania.

Enemies: Bulgaria, Ruritania.

Aims: Acquisition of Ruritania.

Greece

GREECE HAS been independent since 1830, and in 1863 the National Assembly chose George I (Glucksburg dynasty). Greek ambitions are centered on Macedonia and Thessalonika, as well as the Aegean islands currently held by Turkey.

Population: 3 million.

Allies: Great Britain.

Enemies: Turkey, Bulgaria.

Aims: Macedonia, Salonika.

The Lesser Principalities

A NUMBER OF independent principalities were created to fill the vacuum left by the collapse of Ottoman rule following the Russo-Turkish War. Graustark, Montenegro, Ruritania, and Trans-Balkania

all fall into this category. Ruritania has a population of 1 million. Each of the others has a population of about half that.

The Ottoman Empire

LONG IN A period of decline, the Ottoman Empire has, if anything, accelerated its disintegration since the current sultan, Abdul Hamid II, came to power in 1876. The Russo-Turkish War (1877-78) stripped Turkey of most of its European territory, although much was restored by the Congress of Berlin in 1878. Since then the Turks have played a waiting game, attempting to turn the hungry, young Balkan states against each other. Turkish holdings in the Balkans currently consist of Thrace, Rumelia, Macedonia, Epirus, Albania, and Thessalonika.

Population: 25 million.

Allies: None.

Enemies: Bulgaria, Greece, Russia.

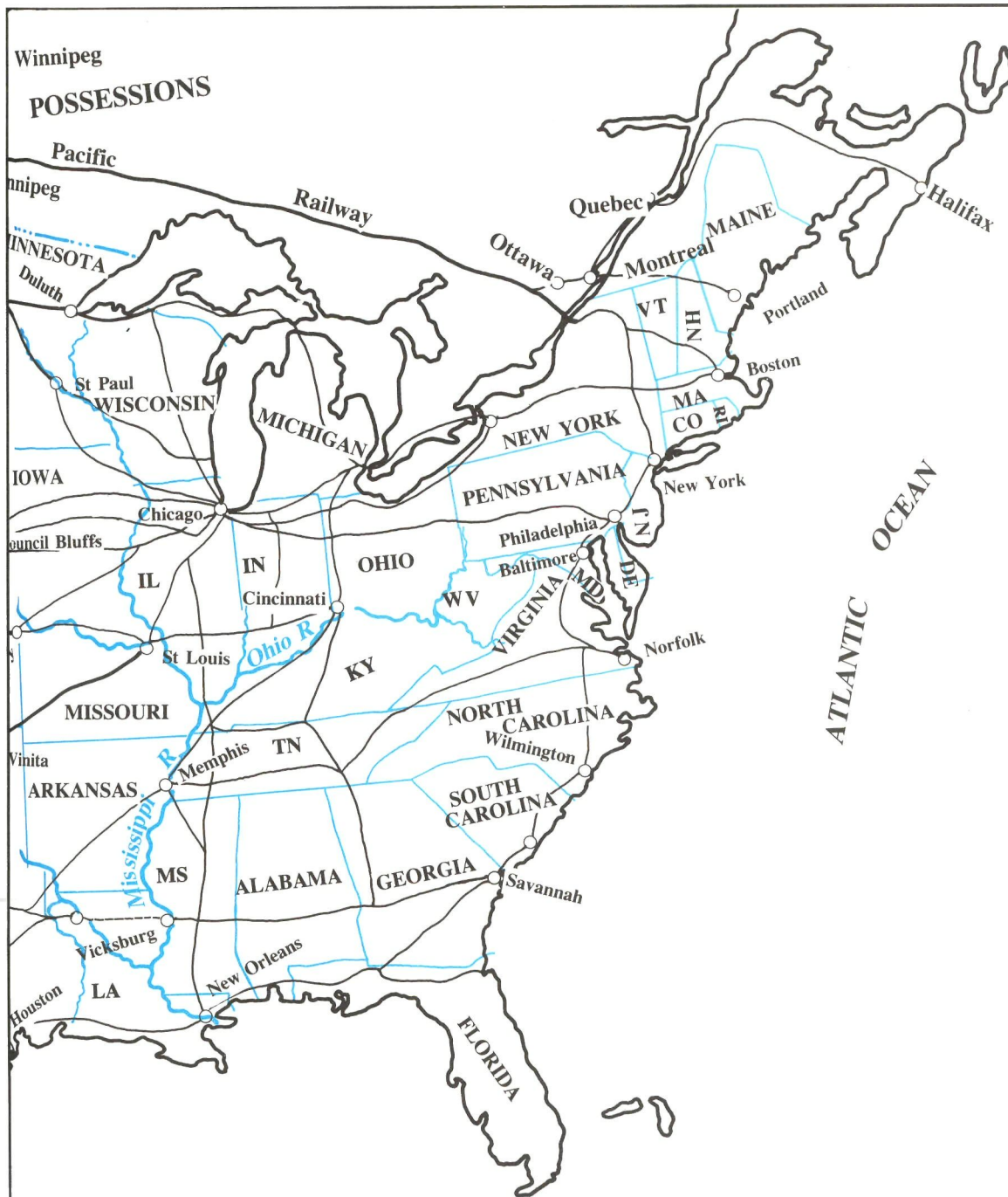
Aims: Retain territory.

Russia and Austria-Hungary

NEITHER Russia nor Austria-Hungary is a Balkan state per se. But both are intimately involved in Balkan politics, and they are increasingly at odds with each other. Russia under Czar Alexander II has acquired Bessarabia and is beginning to actively court the Pan-Slavist radical movement in the Balkans. Austria-Hungary has held the provinces of Dalmatia, Croatia, Banat, and Transylvania for years, and Emperor Franz Joseph has also acquired Bosnia, Herzegovina, and Sandjak since the Russo-Turkish War. Russia has a population of about 130 million; while Austria-Hungary has a population of 45 million.



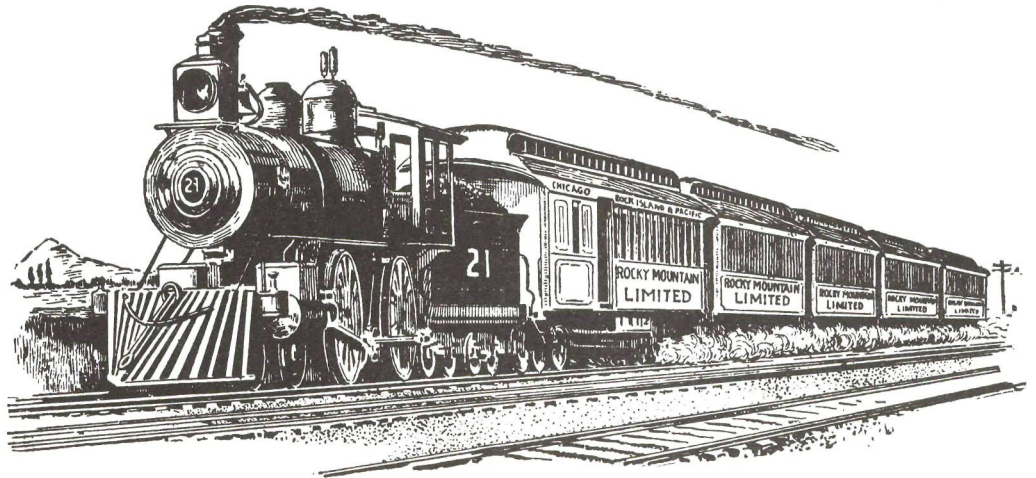
Railroads of North America



GULF OF MEXICO

Tehuantepec

YUCATAN



SOUTH AMERICA

HAVING ONLY gained their independence from their European colonial masters early in the 19th century, the nations of South America have yet to establish a stable tradition and habit of orderly government. Continued clashes—between the Catholic church and social reformers, between the propertied class of Spanish ancestry and the poor class of Indian ancestry, and between the advocates of strong central government and loose confederation—plague these countries. Their political history has become a succession of revolutions and military coups. All these states are run by military strongmen who differ greatly in their honesty and commitment to the welfare of their people, but hardly differ at all in the manner in which they came to and remain in power.

Even while the nations of South America struggle to put their internal political houses in order, vast tracts of countryside remain uncharted wilderness, populated (if at all) by savage native tribes, some of which are headhunters. The most famous regions are the virtually impenetrable headwaters of the Amazon and Orinoco rivers. But similar, albeit less famous, areas can be found all across the continent.

Unexplored Territory

THE LARGEST area of unexplored territory on Earth is the vast basin of the Amazon River, comprising nearly half the territory of Brazil. All this area is dense, trackless jungle rain forest, inhabited only by savage Indian tribes, many of which are headhunters. Although rumors suggest the characteristics of the terrain

and tribes in the main basin area, virtually nothing is known of their existence in the headwaters region.

Most of the continent south of the mouth of the River Platte (near Buenos Aires) is only sparsely settled but has at least been visited occasionally by explorers. The rolling grasslands of the Pampa, the area directly south of Buenos Aires, have been the scene of much fighting between the Pampas Indians and the central government, although that area now seems subdued. The vast, barren scrub desert of Patagonia further south remains something of a mystery. In addition, its exact ownership has never been determined, although Argentina vigorously presses its claim to the region.

The South American Nations

Brazil: The only nation to peacefully separate from its European colonial past, the empire of Brazil was established in 1822 when Pedro, the heir to the Portuguese throne, refused to return to Portugal and instead declared Brazil to be an independent empire. The emperor abdicated in 1831 in favor of his son, Pedro II, who has only recently been overthrown by a military coup. Brazil fought and lost a war against Argentina in 1828 over the future of Uruguay. From 1865 through 1870 Brazil was allied with both Argentina and Uruguay against Paraguay in the War of the Triple Alliance. The new military government has taken an aggressive and expansionist stance, which is quite a source of growing concern to Brazil's neighbors.

Population: 15 million (including aboriginal Indians)

Allies: None.

Enemies: United States, Venezuela, Columbia, Ecuador.

Columbia: Originally established as the Republic of Gran Columbia in 1819 under the patriot and hero Simon Bolivar, the nation quickly disintegrated after Bolivar's death in 1830. The eastern part of the nation became Venezuela, while the southwest became Ecuador. The remnants of the country briefly took the name the United States of New Granada, but after 1861 again assumed the name Columbia. The country is beset by nearly constant civil war between those who believe in a strong central government and those more liberal elements of the society. Meanwhile, a separatist movement in the state of Panama is beginning to gain some support.

Population: 4 million.

Allies: None.

Enemies: Brazil.

Venezuela: Originally part of Gran Columbia (see above), Venezuela nominally has a federalist constitution but in fact remains under dictatorial rule.

Population: 2 million.

Allies: None.

Enemies: Brazil.

Ecuador: The third part of the original state of Gran Columbia, Ecuador made strides toward stability under President Moreno but suffered increasing domestic strife following his assassination in 1875.

Population: 1 million.

Allies: None.

Enemies: Brazil.

Peru: Peru was the last state of South America to gain its independence (in 1821). Since then, Peru has suffered a long civil war (1842-1845) and was defeated by Chile in the Pacific War (1879-1883). As a result,

the Atacama Strip, a territory formerly belonging to Bolivia and rich in nitrates, was ceded to Chile. There is still considerable bitterness over the loss.

Population: 3 million.

Allies: Bolivia.

Enemies: Chile.

Bolivia: In 1883, Bolivia lost the province of Atacama to Chile as a result of the Pacific War (also called the Nitrate War). However, discovery of substantial mineral reserves, particularly tin, made the economic loss bearable. Of far greater impact was the recent Tin Panic, which left the government temporarily insolvent and resulted in its overthrow by a military coup.

Population: 1 million.

Allies: Peru.

Enemies: Chile.

Chile: Relatively prosperous and stable by South American standards, Chile won the Pacific War in 1883 against Peru and Bolivia, gaining a pronounced naval ascendancy in the process. The overland conquest of nitrate-rich Atacama province was confirmed by the peace treaty.

Population: 3 million.

Allies: None.

Enemies: Peru, Bolivia, Argentina.

Paraguay: Due to the mad dreams of conquest of the dictator, F. Solano Lopez, Paraguay found itself in a war against Brazil, Uruguay, and Argentina simultaneously (the War of the Triple Alliance). By the war's conclusion in 1870, the tiny country had lost 70 percent of its male population and is still recovering from the catastrophe.

Population: 500,000.

Allies: None.

Enemies: None.

TEHUANTEPEC SHIP RAILROAD

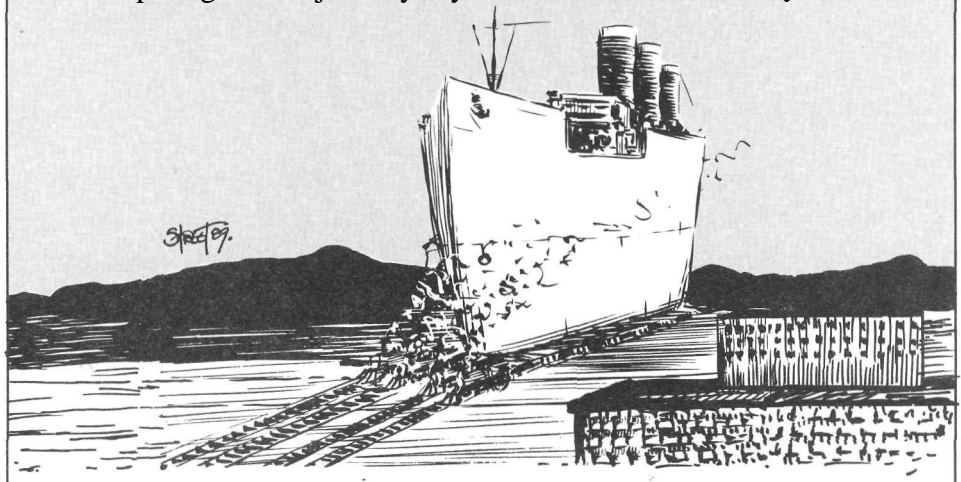
THE NORTH AMERICAN continent is well known for the marvelous state of its rail communications, particularly in the United States. Travel by rail from the shores of the Atlantic to the Pacific is by means of a number of lines: the Canadian Pacific in the north; the Northern Pacific, Union-Central, and Southern Pacific in the United States; and the Tampico-San Bias, the Vera Cruz-Manzanillo, and the Tehuantepec in Mexico. Of all of these magnificent lines, though, the famous Tehuantepec Ship Railroad is the most interesting.

The ship railroad was proposed and championed by the American engineer James Buchanan Eads. Simple in concept, the railroad required engineering feats heretofore never attempted. The result is a means by which very large ocean-going ships can be raised from the ocean, placed onto large railroad cars, moved across the isthmus of Tehuantepec, then returned to the ocean, and from there complete their voyage.

A ship begins its journey by

entering a large dry dock which contains a submerged railroad car. The railway begins 35 feet below the normal water level of the dry dock, and a slope of 1:100 brings the rail line up to sea level 1000 yards from the dock. The ship is maneuvered into its berth on the rail car, and the water is evacuated from the dock. The rail car is coupled to the four large locomotives which will draw the vessel across the isthmus and which have sufficient motive power to complete the journey in 12 hours.

The car is made of cross girders of plate iron, designed to move on 12 rails spaced the standard width apart. Its wheels are placed as close together as their diameter will allow (or three feet from axle to axle), with each wheel bearing on an independent axle, and with a separate set of springs. A car 300 feet in length—such as would carry a ship of 4000 tons—has 100 wheels on each rail, or 1200 wheels under each car. This gives a pressure of five tons on each wheel, which is not as great as is borne by the roadbed of an ordinary railroad.





Argentina: With the best-educated population in South America, Argentina comes closest to being European in outlook and accomplishments. Fortunately for Argentina, most of its internal strife ended in the 1830s. Argentina fought a successful war with Brazil in 1828 to guarantee Uruguayan independence but was forced to surrender the Malvinas (Falkland) Islands to Britain in

1833—a continuing source of bad feelings between the two nations. From 1865 through 1870, Argentina fought the War of the Triple Alliance against Paraguay.

Population: 4 million.

Allies: Uruguay.

Enemies: None.

Uruguay: After gaining its independence in 1828, Uruguay has remained a close ally of Argentina.

Population: 500,000.

Allies: Argentina.

Enemies: Brazil.

The Guianas: The three Guianas are the only remaining colonial enclaves on the continent of South America. They are ruled by (viewing them from west to east) Great Britain, The Netherlands, and France. They have a combined population of 500,000.

THE MAJOR PORTS OF SOUTH AMERICA

(Reprinted from *Scribner's Magazine*, September 1891.)

CALLAO, THE SEAPORT OF PERU, is in itself unattractive, the town and its people are dirty; the empty docks, the lazy inhabitants, the atmosphere of *laissez aller*, confirm the opinion that the place and all around it have had their day. From Callao the traveller should go to Lima, 7 miles distant by rail, and take the Oroya railway to the top of the Andes, 15,000 feet above the sea-level; the wonderful engineering ability displayed in constructing this road will prove quite as impressive as the truly magnificent mountain scenery. Two days will suffice to make the excursion and bring the traveller back to Lima, an old Spanish city with many interesting corners.

Leaving Callao en route to Valparaiso, Chile, the steamer makes several ports; some of them interesting because of the recent war operations, but otherwise they had better be viewed from the ship's deck, for the same low adobe dwellings and squalid existence characterizes them all. After 11 days of pleasant weather Valparaiso is reached. Valparaiso is built on several hill slopes running to the water from a high ridge back of the city. It is a place of great activity; the docks are piled high with freight, the people move about with spirit, the harbor is full of ships, and there is a general air which betokens financial soundness and commercial prosperity. The streets are noticeably clean, the buildings of good architecture, the stores are inviting, and the frequently recurring signs in English, French, and German, and the people met, are indicative of the cosmopolitan nature of the inhabitants.

Both Montevideo and Buenos Ayres, the two ports at the mouth of the River Platte, are attractive cities of regular streets, many substantial houses, public buildings with Italian marble facades, Spanish cathedrals, and extensive suburbs of handsome residences surrounded by beautiful gardens. The mean temperature of the two places, 63 degrees, corresponds with that of Palermo and Rome. The business of Montevideo is good, the imports of merchandise, machinery, and manufactured articles exceeding \$22,000,000 and the exports of hides, horns, wool, and beef being valued at \$15,000,000. The trade of Buenos Ayres is much larger, the imports being valued at \$88,000,000 and the exports at \$65,000,000.

The port of Rio de Janeiro, large, deep, and the most beautiful in the world, is entered by a channel a mile and a half wide, defended by forts. Inside the bay is 17 miles long by 10 miles broad. The town is most attractive from the water. It is especially picturesque at night, when the arrangement of the innumerable gas-lights distinctly outline the entire city, built on a gentle incline toward the bay. The streets are narrow, badly paved, and not over-clean. The traveller will find that he can get on well enough if he can talk French, for there is a certain French air about the community. Many of the stores have French signs, nearly all the shopkeepers speak French, it is the language of the hotel clerks, the opera bouffe sings it, and the black-eyed *senoritas* murmur it.

COLONIALISM IN SOUTHEAST ASIA

THREE PRINCIPAL colonial powers were active in southeast Asia in the 19th century: Britain, France, and the Netherlands.

The Netherlands

PERHAPS THE least conspicuous of the three colonial powers in the area also held the largest expanse of territory. In addition to Sumatra and Borneo, which are shown on the map, The Netherlands also ruled the islands of Java, Celebes, the Moluccas, and the western half of New Guinea. The Dutch were, at this time, uninterested in expanding their colonial empire and were instead trying to make the most of it. Commercially valuable spices grew throughout the islands, and Sumatra also boasted ivory and rubber.

Although the Dutch did not make any aggressive moves in the region at this time, they were forced to fight a number of small actions against popular uprisings, particularly in northern Sumatra. These would not abate until much later, when the native populations were given a meaningful role in the colonial government. The total population of the Dutch East Indies is well in excess of 25 million.

France

ALTHOUGH INVOLVED in the affairs of the Indo-Chinese nations since the middle of the 18th century, France did not actually obtain its first colony in the area until 1862 with the occupation of the western province of Cochin China, the area around Saigon. At that time the Khmer Empire (Cambodia) was in a state of

drastic decline, with Siam and Annam fighting over the spoils. In 1863 Norodon, the Khmer emperor, petitioned to the French to be made a protectorate, and the request was granted. Cambodia, therefore, voluntarily lost its independence, but was spared the trauma of conquest and partition.

Nearly two decades passed without further adjustment, but in 1883 the French seized Annam and in the following year occupied Tonkin as well. In 1887 the French united these territories under a single administration, the Union of Indochina, and seems prepared to add Laos to the union.

The principal products of the area are rice from the delta regions of the Red River and the Mekong River, silk from northern Annam, tin from northern Tonkin, and rubber from Cambodia and Cochin China. The population of Indochina (including Laos) is approximately 12 million.

Great Britain

BRITAIN ACTUALLY had no genuine interests in southeast Asia, but the need to defend the eastern borders of India gradually dragged Britain into the area. The Burmese Empire made several attacks on Indian states early in the century—the second attack leading to the the First Burmese War (1824-1826). This ended with the British annexing most of the coastal provinces of Burma, specifically Assam, Arakan, and Tenasserim. The Second Burmese War (in 1852) resulted in the annexation of Lower (or Pegu) Burma, and the Third Burmese War of 1885-1886 resulted in the incorporation of Upper (or Ava) Burma into the Indian colony.

Meanwhile, Malaya had become a British possession in 1874 (although Singapore has been British since 1819), and just a year ago (1888) the northern coast of Borneo was occupied.

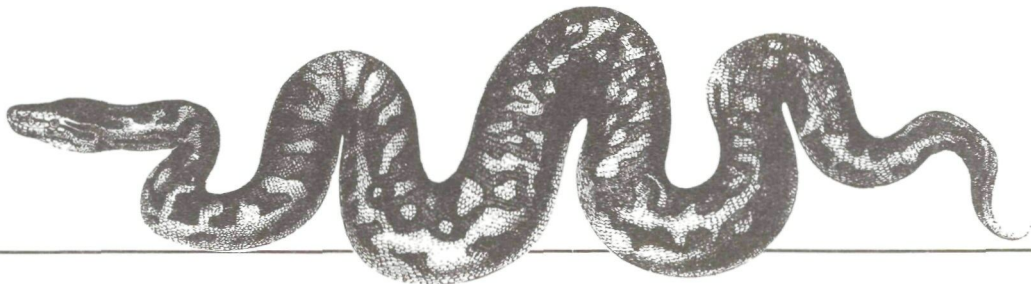
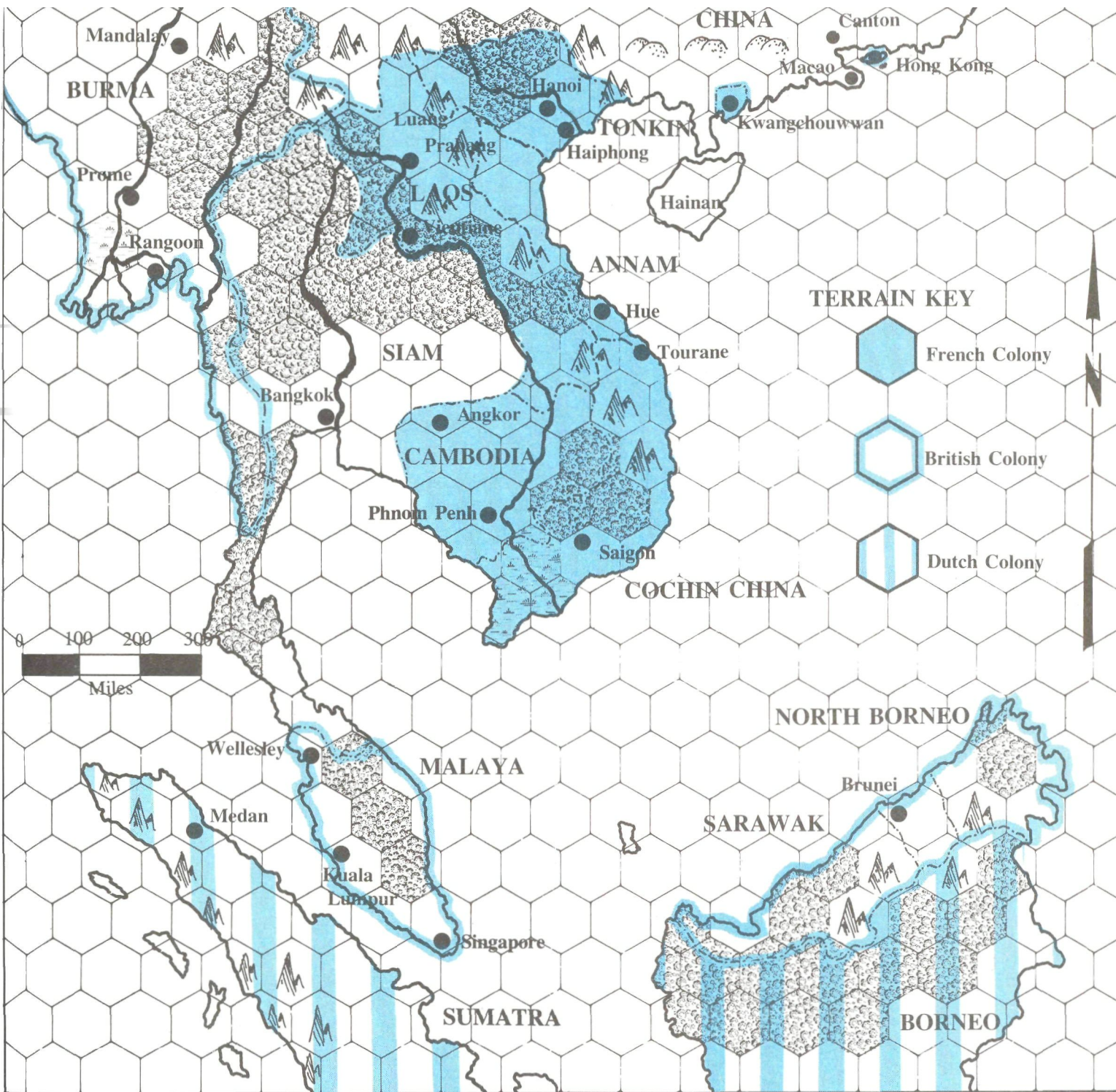
As to the economics of the British holdings, North Borneo provides rubber. Malaya does likewise, as well as having substantial deposits of tin. Burma provides mostly rice and tea, although important tin reserves are worked in Tenasserim. Burma has about 10 million inhabitants, and the population of the other British holdings in the area are nearly the same.

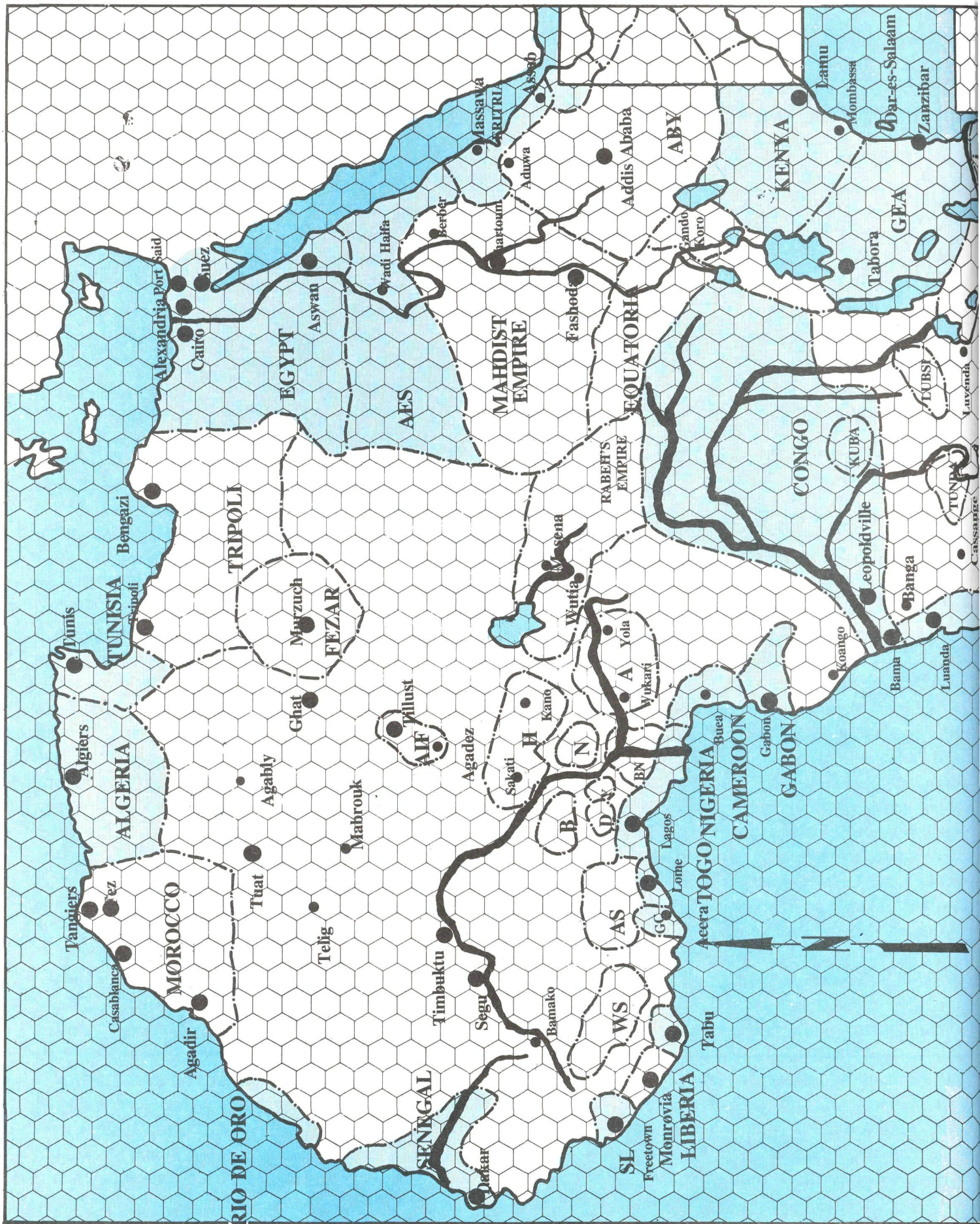
Siam

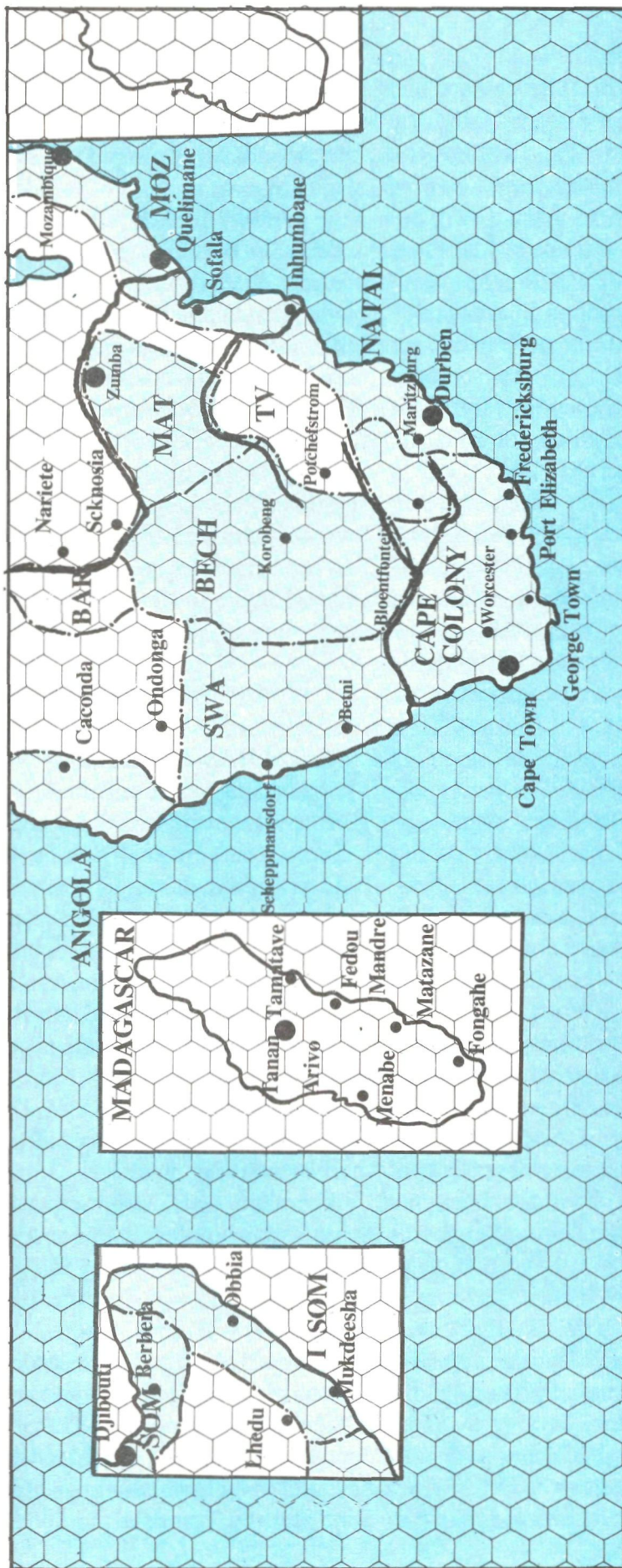
NOT A COLONIAL power by any means, Siam shares with Laos the distinction of being one of only two states in the region which still retain their independence. As Laos is increasingly falling under the attention of the French, it is likely that soon Siam will share that honor alone. There is every prospect of Siam remaining independent, due largely to its remarkable ruler, King Chulalongkorn. An adept diplomat, Chulalongkorn also began a sweeping program of reform and westernization in 1880 which is already bearing considerable fruit. Alone among the noncolonial powers of the Earth, Siam maintains embassies in several prominent capitals of Mars. More importantly, alone among the states of southeast Asia, Siam is well on the road to becoming a truly modern state.

Siam's principal products are rice, rubber, tea, tin, and ivory. It has a population of about 6 million and a modern army equipped and organized along European lines.

COLONIALISM in South East Asia







Area Controlled by Colonial Powers.

KEY TO ABBREVIATIONS



B: Bornu	TV: Transvaal	AES: Anglo-Egyptian Sudan
D: Dahome	SWA: Southwest Africa	Som.: Somaliland
Y: Yoruba	Bech: Bechuanaland	I Som: Italian Somaliland
Bn: Benin	Bar: Barotse	Aby: Abyssinia
N: Nupe	GC: Gold Coast	GEA: German East Africa
H: Hausa	SL: Sierra Leone	Moz: Mozambique
A: Adamaua	WS: Western Soodan	O: Orange Free State
Mat: Matabeleland	As: Ashanti	

AFRICA: THE POLITICAL LANDSCAPE

THE EXISTING native governments of Africa are on the verge of collapse under an avalanche of European colonial expansion, but this is not immediately apparent. Although the coasts of Africa have been visited for years and numerous colonial enclaves have been established, it is only now that a major effort is being made to push inland and bring the native inhabitants under European rule. For the most part, these drives are with European-led native troops armed with modern firearms who are able to deal with most threats posed by the local irregular warriors.

COLONIAL HOLDINGS

MUCH OF AFRICA is already controlled, at least nominally, by European colonial powers.

Great Britain

GREAT BRITAIN currently holds the territories of Sierra Leone, Nigeria, and the Gold Coast in western Africa; Somaliland and Kenya in east Africa; and the Cape Colony and Natal in south Africa. Great Britain also occupies Egypt and the Anglo-Egyptian Sudan in the north. In addition, the South Africa Company, headed by Cecil Rhodes, has authority to govern the swath of territory north of the Orange and Limpopo rivers, comprising Bechuanaland and Rhodesia. While some authority has been established in Southern Rhodesia, Northern Rhodesia (north of the Zambezi River) still has to be brought under British administration.

While Rhodes pushes north from Rhodesia, there is considerable move-

ment inland from the Gold Coast and Nigeria, as well. The corrupt and despotic African rulers of Dahomey and Ashanti are the first targets. However, claim to a broad tract of land stretching to Lake Chad has been ceded to Britain by the other European powers, and rapid expansion in that direction is inevitable.

Britain's foremost concern in Africa, however, is the southern Sudan, currently held by forces of the Mahdi's rebellion. In 1885 the Mahdi ("Expected One") led a revolt in the Sudan which ended in the destruction of the garrison at Khartoum and one wing of the relieving British Army. As a result, the British have left the Sudan to the Mahdi for the present but will undoubtedly launch a campaign for its reconquest soon.

Germany

ARCHITECT OF the Congress of Berlin which partitioned Africa among the European powers, Germany has recently acquired considerable holdings there. In addition to the fairly small enclaves of Togo and Cameroon, Germany also controls the large territories of southwest Africa and German East Africa. Separate companies of native riflemen (*Schutztruppen*) have been raised in all of the colonies to enforce German rule, although there has been no organized resistance to date.

France

FRANCE CURRENTLY occupies Algeria and Tunisia, and controls their internal affairs. In addition, French colonial enclaves can be found at Senegal, Gabon, and Djibouti. The Congress of Berlin ceded most of western Africa—up to the

Anglo-Egyptian Sudan—to France, and already the French have begun vigorous campaigns to "pacify" the interior.

Leopold of Belgium

BELGIUM HAS no colonial holdings in Africa, as the Congo is owned personally by King Leopold (although he has provided for it to become state property upon his death). Using his own personal fortune, mercenaries of his Congo Trading Company have ruthlessly suppressed any native opposition to his rule. Much of the Congo basin has been pacified, but the African state of Kuba, in the south, still retains some measure of autonomy.

Other Colonial Powers (Italy, Portugal, Spain)

ITALY HAS established bases at Massawa and Assab in Eritrea. Angered by France's establishment of a protectorate over Tunisia, the Italians occupied southern Somaliland (now known as Italian Somaliland) early this year (1889) and are now positioned to put pressure on Abyssinia from two directions.

Portugal's only important holdings in Africa are Angola and Mozambique, although in both cases Portugal is busily engaged in expanding the two holdings inland.

Other than a few offshore islands, Spain's only holding in Africa is the Rio de Oro.

The Boers

THE BOERS are Dutch settlers who farm the rugged hills and veld of South Africa. Stubbornly independent, many have left the Cape Colony and inhabit the Orange Free State and the Transvaal.

AFRICAN STATES

THE NON-ISLAMIC African states are, in general, those south of the Sahara. In those areas where no specific state is defined (such as the area north of the Zambezi and south of the Congo headwaters, or much of the area along the Niger River) there is no government beyond the tribal level. The exception is the occasional powerful city-state (such as Timbuktu, Lavenda, etc.) Of the other African states, most consist of several cities and the surrounding towns and villages all brought under the control of a single ruler. Two of these states are of some interest, however.

The Abyssinian Empire

UNLIKE MANY of the African states, the inhabitants of Abyssinia are Coptic Christian. The territory of the empire comprises two distinct regions: the Ogaden in the east and the Kefa in the west. The emperor, Theodoras II, was killed by a British punitive expedition in 1868, after which the empire fell into civil disorder for several years. A British adventurer (who took the title John IV) ruled the empire from 1872 to 1889. While John IV ruled, he repulsed several attacks by Egypt between the years of 1875 and 1879. Earlier this year (1889), however, John died and was replaced by Menelik (with Italian backing). Menelik was proclaimed *Negus Negesti* (King of Kings) with the title Menelik II. Already, however, the Italians seem anxious to gain further concessions, and relations between the two neighbors are tense. Even now Italian troops are massing in Somaliland and rumors of war.

The Fulani States

SEVERAL OF the scattered states to the west of Lake Chad have been conquered by Islamic Ful nomads from the southern Sahara, although the population remains non-Islamic. A sort of loose feudal system is in force, with no genuine central ruler, but with a general recognition of common interest against outside foes. The Fulani states consist of Hausa, Nupe, and Adamaua.

ISLAMIC STATES

MOST OF THE northern half of Africa is Islamic, and the entire northern coast was under the rule of the Ottoman Empire less than a century ago. The only remnant of that power now is the nominal subordination of Tripoli to the sultan in Constantinople, although the Fezzan has broken away as an independent state. Most of the desert nomads of the Sahara are Islamic, as are the few independent city-states scattered across it, as well as the Sultanate of Air. Several of the larger Islamic states are of special interest.

The Mahdist Empire

ALSO CALLED the Dervish Empire, this territory was wrestled from Egypt following the revolt by the Mahdi (Expected One) in 1885. Years of Egyptian misrule in the Sudan caused revolt, and repeated British blunders allowed it to succeed. Although the northern Sudan remains under British control, most of the rest now comprises the empire. The three principal regions are Nubia (the north), Darfur (the west), and Kordofan (the south). Only the southern province of Equatoria remained free of the Mahdi's influence.

Equatoria

FORMERLY A province of the Anglo-Egyptian Sudan (and still claimed as such), Equatoria has had no overland contact with the outside world since the revolt in 1885. Ruled by a German national (who has converted to Islam and taken the name Emin Pasha), and garrisoned by two battalions of seasoned Sudanese infantry, Equatoria has become a tiny island of stability in the chaos of central Africa. (Emin Pasha was visited by aerial flyer twice, once in 1888 and once early this year. In both cases considerable stocks of small arms ammunition were flown in.)

Rabeh's Empire

KNOWN IN SOME quarters as "the Napoleon of Africa," Rabeh's empire has grown systematically and now stretches from Equatoria and Darfur to west of Lake Chad. The principal territories which comprise the empire are East Bornu (southwest of Lake Chad), Wadai (east of the lake), and Zandi (the southeast, bordering the Congo). Rabeh is known as a talented organizer, a cunning warrior, and an able administrator—three talents rarely found in the same man.

Madagascar and Morocco

AT SEPARATE ends of Africa are two independent Islamic sultanates. While Morocco lives in the shadow of Europe and walks a tight-rope to maintain its independence, Madagascar remains a wild, blood-thirsty haven for brigands, thieves, and pirates. Both are centers of adventure and intrigue, and both are temporarily beyond the reach of European police.

AFRICA: THE LAND

AFRICA IS A land of stunning beauty, staggering diversity, and great danger and mystery. Its landscape ranges from arid sand seas to lush tropical rain forests to rolling grasslands, while it is inhabited by a wide assortment of animals and an even greater diversity of human cultures.

Terrain

IN BROAD terms, Africa can be divided into three parts: the dry north, encompassing the broad expanse of the Sahara as well as Abyssinia and the horn of Africa; the humid rain forests and river basins of equatorial Africa; and the rolling veld (grasslands) of southern Africa.

The Sahara is a young desert and, for the most part, is not the sterile, desolate sandy basin which characterizes the American southwest, the Arabian peninsula, the Hot Side of Mercury, and much of the Martian uplands. Instead, it is generally quite rocky and sparsely covered by thorn-bushes and low scrub trees.

The exceptions to this are the sand seas of the Sahara. Starting in the northwest, the trace of the Erg Iguidi (Iguidi Desert) begins near the Rio de Oro and runs northeast into the Grand Erg Oriental (Great Eastern Desert), which follows the line of the Atlas Mountains and the southern borders of Morocco and Algeria. The Erg Chech spreads south off the Grand Erg Oriental toward Timbuktu. Between the Erg Iguidi and Timbuktu, but unconnected to any of the others, is the sand sea known only as the Djouf. Further east, to the south of Tunis and Tripoli, is the Grand Erg Occidental. Still further

east is the Libyan Desert, which stretches down along the banks of the Nile. Across the Nile, between Wadi Haifa and Berber, is the Nubian Desert, while the Tenere lies north of Lake Chad. All these deserts are nearly impenetrable sand seas, almost completely barren of plant or animal life, and dotted only by the occasional oasis.

The jungles of equatorial Africa rival anything that Venus has to offer for inhospitability. They are hot and humid, and quite swampy along the river banks. The ground is not particularly fertile, so these regions are only sparsely inhabited except along the rivers and the coast. The headwater regions of many of the African rivers tend to be swampy, especially the Ubangi, Zambezi, Nile, and Niger. The area where the Ubangi and Congo rivers join is also particularly swampy and can scarcely be traversed, except by boat.



Southern Africa is, in general, a more hospitable blend of these two extremes, although the Kalihari Desert of southwest Africa is only sparsely inhabited by bushmen. More typical, however, is the rolling veld that stretches north for a 1000 miles, from the Orange and Limpopo rivers to the beginnings of the jungle of the Congo Basin. The area between the headwaters of the Kasai and Congo rivers remains wild and unexplored by Europeans.

IVORY

WHILE DISCOVERIES of gold and precious stones in the southern part of the continent may eventually produce breathtaking fortunes, the bulk of Africa's trade currency, is at present, produced by ivory, principally in the form of elephant tusks. Demand is increasing for manufactured goods on the part of the native inhabitants, and the principal medium of exchange has become ivory.

An elephant tusk weighs, on the average, about 100 pounds, although somewhat less than half of that weight is prime, useful ivory. Depending on the current market price and the skill of the seller, each tusk can sell for as much as £50.

Referee: Selling price is £5 times the Bargaining skill of the selling player plus the roll of one die. For example, a player with a Bargaining skill of 3 rolls a 4 on the die, for a total of 7. Multiplying this by 5 gives a selling price for his tusks of £35 each.

Ivory is effectively unobtainable from the natives in the coastal regions, all of the trade being taken by local merchants who are already firmly established. Several hundred miles inland, however, ivory begins to show itself as a medium of trade, and an average tusk can usually be obtained for about £10 to £15 worth of manufactured trade goods. When found 100 miles or more beyond the regions controlled by the colonial powers, tusks can be had for perhaps £5 to £10 worth of goods. When deep in unexplored territory, it is often possible for an individual to obtain tusks for as little as £2 to £5 worth of goods.

MYSTERIES OF AFRICA

MUCH OF WHAT is known of the regions beyond the limits of European control has been pieced together from secondhand accounts. Large parts of the continent remain unexplored and are the subject of tantalizing rumors. A few of the better known legends are repeated below.

The Ape-Men of Gabon

ALTHOUGH one has never been seen by a European, there have been too many accounts of large, semi-erect ape-like beings in the jungles west of the Congo to be ignored. Native legends speak of the great strength and ferocity of these apemen, who reportedly live in settlements built high in the branches of the great trees of the rain forests. Few natives can be persuaded to venture east into this trackless wilderness.

King Solomon's Mines

LEGENDS OF the mines in Africa that were the source of a fabulous dowry for King Solomon have been repeated again and again throughout the years. The discovery of rich deposits of gold and diamonds in southern Africa had rekindled those stories and lent them an air of believability. Much of the effort to find the mines is now concentrated in the south (and some suggest they may be partly responsible for Cecil Rhodes' demand for mineral rights from the king of the Matabeles, as well as his relentless pressure for expansion north across the Zambezi). Many serious scholars suggest, however, that a far more likely location for the mines is the remote and forbidding Tibesti Mountains, due to its proximity to historic Nubia.

The Lost City of the Romans

MANY ANIMALS from Africa were brought across the Mediterranean to fight in the Roman Coliseum, and it is almost certain that Roman military and commercial outposts stretched deep into, and perhaps beyond, the Sahara. Persistent rumors of a great city northeast of Lake Chad, in a region called Kanem, inhabited by a light-skinned race of men suggest that such an outpost may have survived after the decline of the empire severed all links to Rome. Recent unconfirmed reports have claimed that Rabeh, a remarkable military leader of the Shari River basin, suffered a severe defeat in a battle north of Masena several years ago, and that caused him to change the direction of his ambitions from the north to the west. If so, this is further evidence of the existence of some sort of military and cultural power of unknown origin in the southern Sahara.

The White Goddess of Darfur

EMIN PASHA, the governor of Equatoria, has reported rumors of a "white goddess" worshipped by one of the more remote tribes of Darfur, the western region of the Mahdist empire. As the inhabitants of the empire are almost uniformly Islamic in their religion, this would appear to represent some sort of open defiance of the central government. Assuming that the rumor holds some truth, there has been considerable speculation about the possibility of one of the European residents of Khartoum having survived the massacre. An alternative hypothesis is that this rumor and that of the supposed lost city of the Romans may somehow be

related. It is certain that even if the rumors are not complete fabrications, they have been considerably distorted by repeated tellings. Two investigative aerial expeditions in the last year have attempted to solve this mystery, but neither has returned.

The City of the Dead

THE ARABLE LAND along either bank of the Nile once extended farther inland than it does today, and the upper Nile supported considerably more inhabitants along its shores. The ruins of great edifices of the ancient Egyptians can still be seen south of Aswan. Too many graves of the pharaohs remain undiscovered to dismiss theories as yet undiscovered "city of the dead," a vast expanse of tombs now swallowed up by the desert, waiting only the strike of the archaeologist's pick to offer up its historic treasures. If other tombs are any indication, however, considerable hazard will attend such a discovery, as many of the ancient Egyptian tombs are riddled with maze-like passageways, hidden doors and chambers, and deadly traps.

Other Mysteries

AFRICA IS a land of mystery and earns its name "The Dark Continent." Stories tell of a monastic city carved from the living rock of a mountain range and inhabited by monks with incredible powers of the mind, of the elephants' graveyard filled with more ivory than a man could haul out in a lifetime, and of a steep-sided plateau so isolated from the surrounding land that ancient dinosaurs still roam its summit. Who is to say these other stories are too wild to be true?

AFRICAN ENCOUNTERS

<i>Terrain</i>	Jungle	River	Plain	Hills	Swamps	Mountains	Desert
<i>Encounter #</i>	4	3	5	3	3	2	2
<i>Die Roll</i>	<i>Encounter Type</i>						
1	Gorilla	Hippo	Herd	Baboons	Hippo	Gorilla	Oasis
2	Python	Crocodile	Herd	Gazelle	Crocodile	Gorilla	Oasis
3	Leopard	Python	Cat	Lions	Python	Native	Oasis
4	Elephant	Native	Rhino	Native	Water Buffalo	Native	Camel/Hyena
5	Pygmy	Native	Native	Native	Native	Leopard	Arab/Bushman
6	Native	Native	Native	Native	Native	Leopard	Jackal

<i>Die Roll</i>	<i>Herd</i>	<i>Cat</i>	<i>Native</i>
1	Elephant	Lion	Lone Hunter
2	Zebra	Lion	Hunting Party
3	Gazelle	Lion	Trading Party
4	Wildebeest	Lion	War Party
5	Giraffe	Cheetah	Village
6	Elephant	Cheetah	Large Village

Notes: Whenever a Herd, Cat, or Native result is rolled, roll again on the second table.

If rolling for natives, all encounters in and north of the Sahara and in the Mahdist Empire are treated as Islamic natives. All other native encounters are treated as sub-Saharan natives.

An encounter result of Pygmy requires a second roll on the Native column to determine the nature of the encounter.

The Kalihari Desert is in the southwestern tip of Africa and is different than the other African deserts for encounter purposes. Whenever an Arab/Bushman encounter is rolled, it is always an Arab encounter except in the Kalihari, where it is a Bushman encounter instead. In both cases a second roll on the Native column is necessary to determine the nature of the encounter. Whenever a Camel/Hyena encounter is rolled it is always a camel except in the Kalihari, where it is a hyena instead.

ENCOUNTER DESCRIPTIONS

FOR STATISTICS of animals, see the Animal Chart: Africa. Oasis encounters and encounters with natives are explained below.

Oasis: At this oasis the characters can find life-giving water. The oasis may be relatively large or may be only a small pool, well, or spring. A native party will be camped nearby on a roll of 1 or 2.

Lone Hunter: A solitary hunter is encountered, perhaps a young man on his first hunt or on his manhood quest. He will be cautious, but not hostile. He may be persuaded to travel with the characters and serve as

a guide, or to help avoid a fight later if the players encounter other natives of the same tribe.

Hunting Party: Two warriors and 2D6 hunters are encountered. They are likely to attack if they believe they can succeed without taking serious losses and if they perceive the rewards as great. Alternatively, if they see nothing to gain, they may ignore the party or even offer help, particularly to lost or helpless characters. They may demand gifts from a rich group, and they may meet hostility with part of the hunters trailing the characters while others return to their village to bring additional warriors for an attack.

Trading Party: This will be a large party carrying ivory, gold, or other precious trade goods. If Arab or Islamic, the party will have 1D6 merchants, each with four pack camels of goods. There will also be 1D6 x 2 guards mounted on camels. A sub-Saharan trading party will have 1D6 x 10 bearers carrying the trade goods as well as supplies for the party, and 1D6 x 3 guards. Bushmen and pygmies do not have trading parties—roll again.

War Party: 1D6 x 3 warriors are encountered, hostile and inclined to attack. Only a guide, previous friendly contact, or overwhelming strength can prevent a fight.

Village: A small village has 1D6X5 families, each with one dwelling. Perhaps for every six inhabitants, two are able-bodied males; one of these should be considered a hunter and one a warrior. For Arabs in the desert, the dwellings will usu-

ally be large, low tents. In the Islamic north, the dwellings will be stone or brick, while south of the Sahara the most common village dwellings are grass or mud huts. Most villages (unless only a temporary nomadic encampment) are

surrounded by thick piles of thorn-bushes, which make a very effective defensive barrier.

Large Village: A large village is a larger settlement with 1D6X20 families. Otherwise, it is identical to the smaller village.

ANIMAL CHART: AFRICA

Type	#App	Size	Move	Wnds	Save	Wt.	Weapons
Predators							
Leopard	1	1x1	L50	3	—	300	Teeth (2, 3, 0, 2) Claws (3, 3, 1, 1)
Crocodile	1D64	1x2	W20	2	1	200	Teeth (3, 2, 0, 1)
Lion	1D6	1x2	L40	4	—	400	Teeth (2, 2, 0, 2) Claws (3, 2, 1, 1)
Cheetah	1	1x1	L70*	1	-1	100	Teeth (2, 3, 0, 1) Claws (3, 2, 1, 1)
Python	1	1x1	W20	1	1	50	Coils (2, 3, 0, 3)
Baboon	1D6x4	1x1	L30	1	—	100	Teeth (3, 2, 0, 1)
Scavengers							
Jackal	1D6x3	1x1	L50	1	-1	50	Teeth (2, 2, 0, 1)
Hyena	1D6	1x1	L40	2	—	150	Teeth (2, 3, 0, 1)
Plant Eaters							
Rhino	1	1x2	L30	8	1	2 tons	Crush (1, 1, 3, 2) Horn (1, 3, 2, 2)
Gorilla	1D6	1x1	L30	3	—	300	Claws (3,2,1,1)
Elephant	1D6x4	2x3	L20	20	1	5 tons	Crush (1, 1, 3, 5) Coils (2, 3, 0, 2) Horns (1, 2, 2, 1)
Hippo	1D6x2	2x2	W10	8	1	2 tons	Teeth (2, 2, 0, 3)
Gazelle	1D6x 10	1x1	L60	1	-1	100	Horns (1, 2, 2, 1)
Water Buffalo	1D6x4	1x2	L20	10	—	1500	Horns (1, 2, 2, 1)
Camel	1D6x4	1x2	L40	8	—	1200	—
Wildebeest	1D6x 10	1x2	L30	10	—	1500	Horns (1, 3, 2, 1)
Zebra	1Dx 10	1x2	L60	6	—	800	Hooves (2, 2, 1, 1)**

Notes: Speed is in yards per action on land (L) or water (W), or in flight (F).

Weight is in pounds unless otherwise indicated.

Weapon values are listed in the following order: number of hit dice, required hit number, reach, and wound value.

*The cheetah will only maintain this pace for one action, after which it will become cautious and either retreat or circle for a better chance at an attack.

**Hooves attack as a claw attack.



AFRICAN STOCK NPCS

NPC Type	Exp.	Mrksmn	Att.	Arms
Bushman				
Hunter	G	3	P	Sling
Warrior	T	3	P	Sling
Pygmy				
Hunter	T/X	3	P	Bow
Warrior	X/V	3	P	Bow, Club
Arab				
Hunter	X/V	4	P	Rifle, Knife
Guard	X/V	3	P	Rifle, Saber
Warrior	X/V	3	P	Rifle, Saber
Merchant	T	1	M	Knife
Islamic				
Hunter	X	3	P	Bow, Knife
Guard	X	1	P	Musket
Warrior	V	2	P	Saber, Shield
Merchant	G	1	M	Knife
Sub-Saharan				
Hunter	T/X	3	P	Spear, Knife
Guard	T/X	1	P	Spear, Shield
Warrior	X/V	2	P	Spear, Shield
Merchant	G	1	M	Knife

Notes: Abbreviations are as follows,

Exp.: Experience

G: Green

T: Trained

X: Experienced

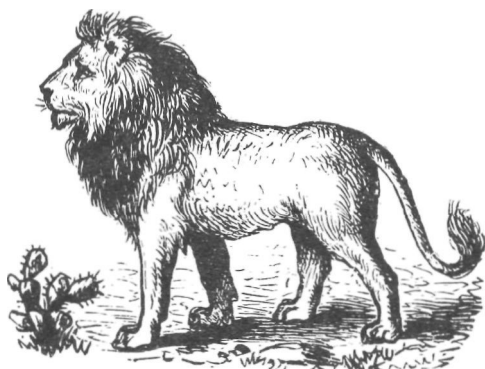
V: Veteran

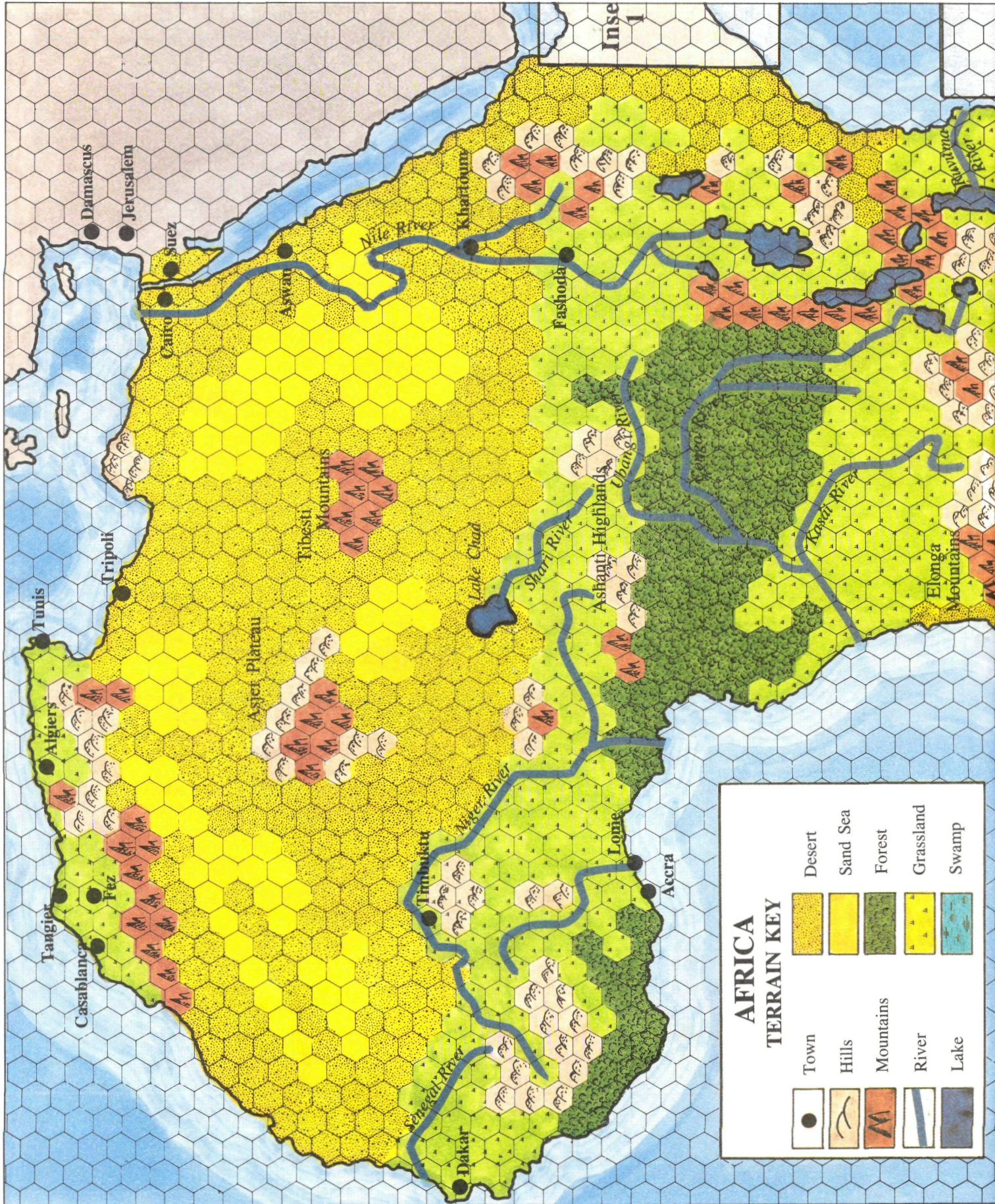
Att.: Attributes

P: Physical

M: Mental

Mrksmn: Marksman

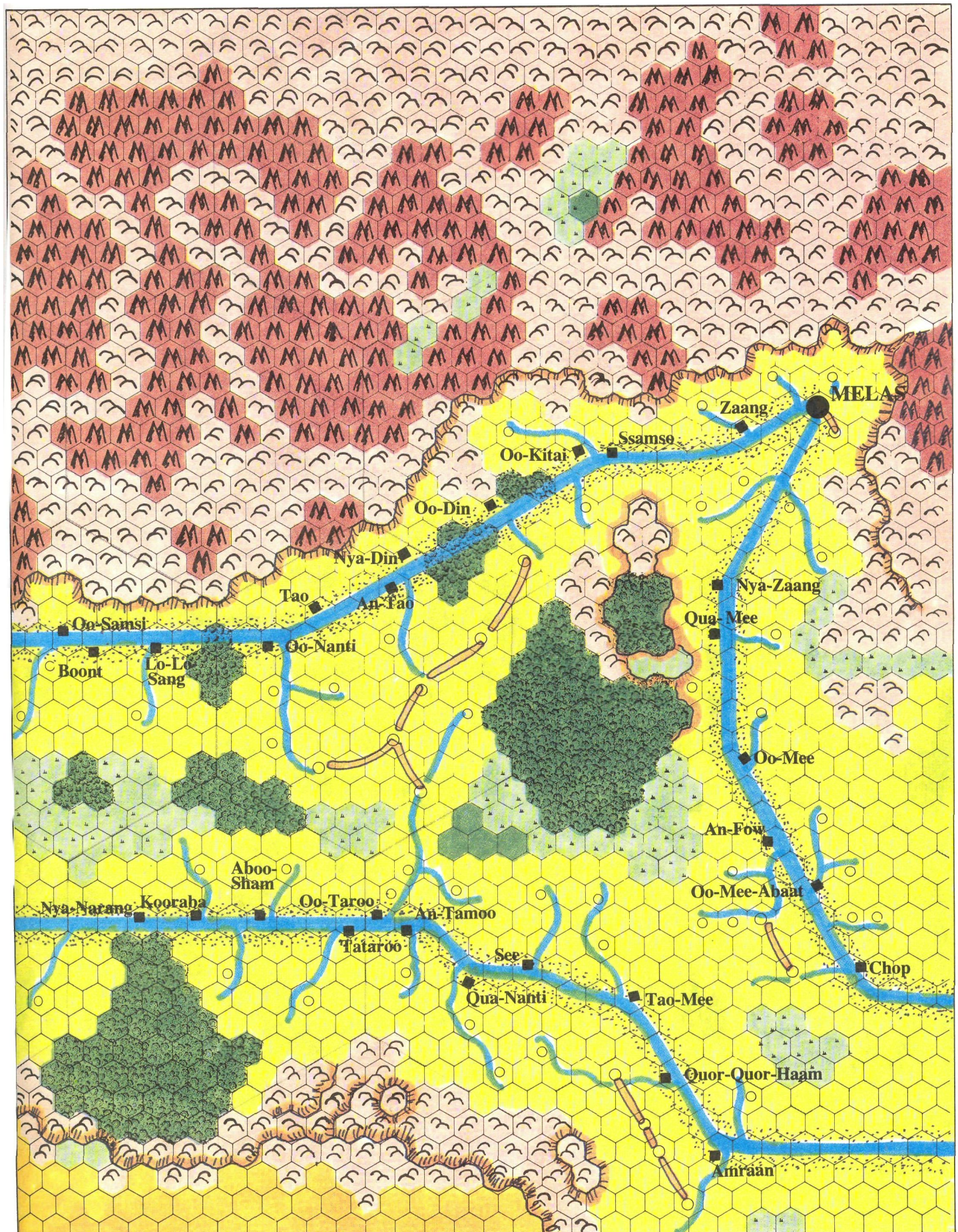


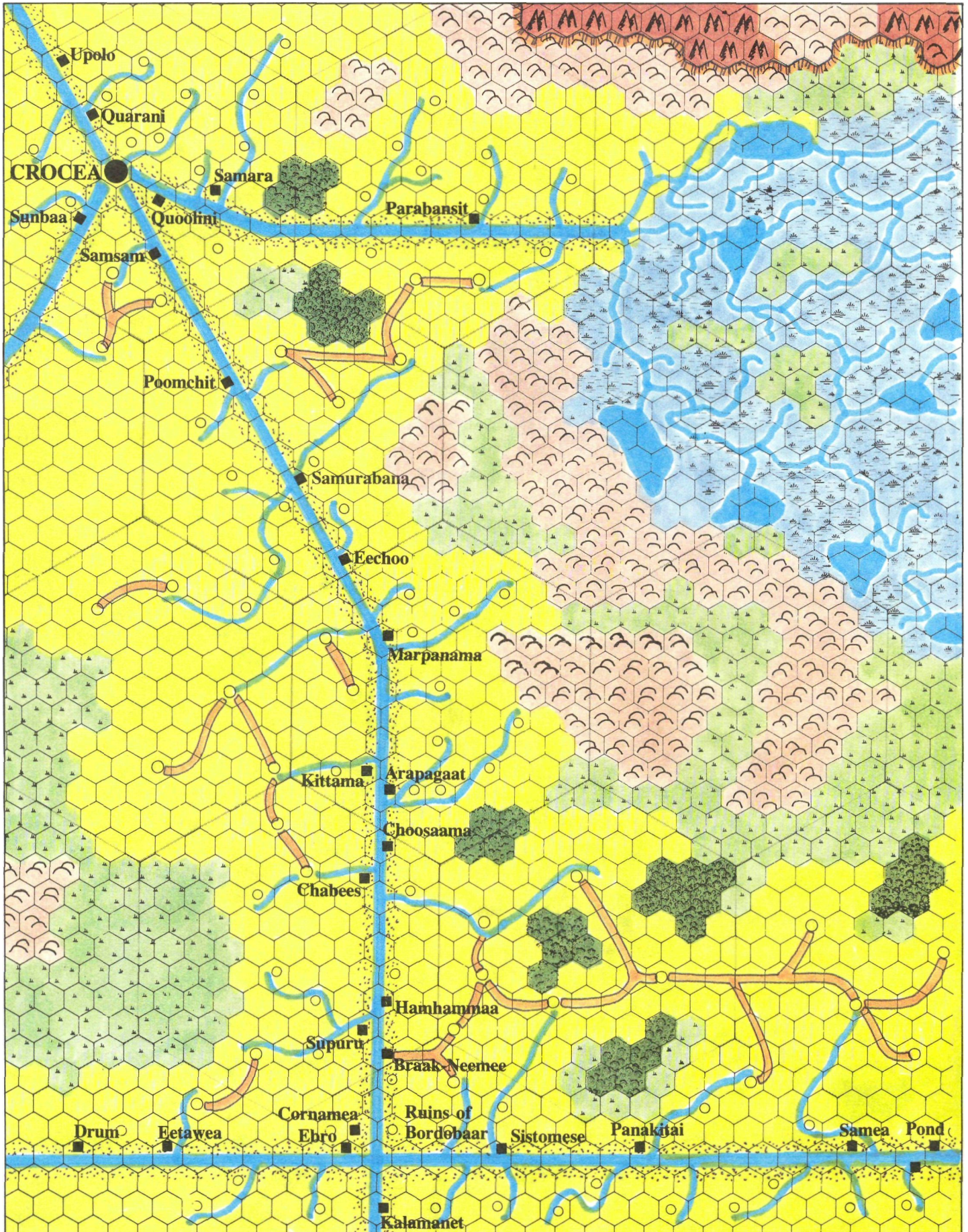


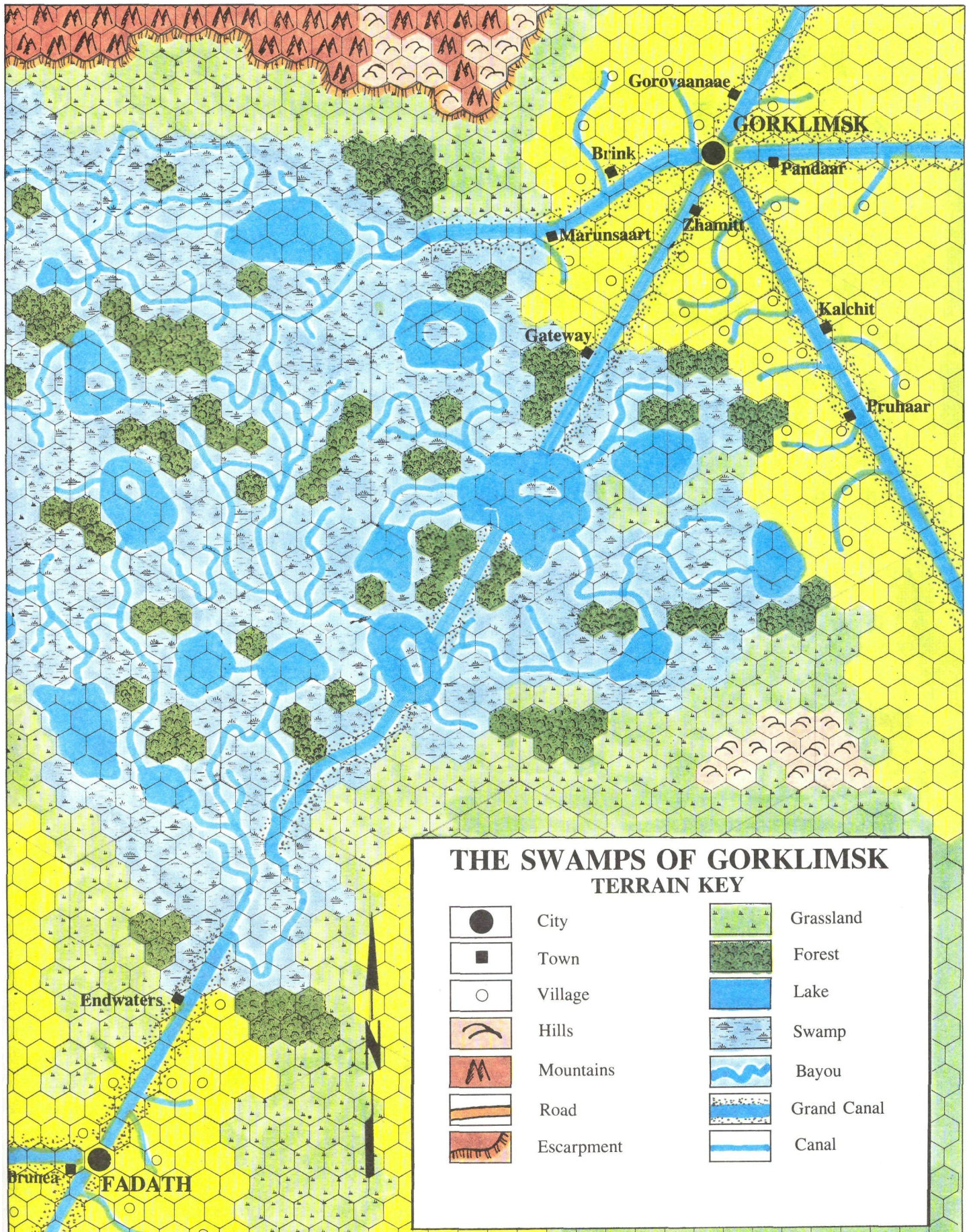


Madagascar: 2 million.









BELGIAN TROOPS IN THE COPRATES (JANUARY 1889)

1st Regiment, Belgian Legion: Permanent garrison of New Amsterdam. One or more companies of the regiment are usually in the field on sweeps for rebel bands.

2nd Regiment, Belgian Legion: Broken up into platoon and company garrisons in several towns along the New Amsterdam-Melas Lacus canal.

3rd Regiment, Belgian Legion: Permanent garrison of Melas. One or more companies usually engaged in sweeps.

4th Regiment, Belgian Legion: Broken up into platoon and company garrisons in several towns along the New Amsterdam-Melas canal.

5th Regiment, Belgian Legion: 1st Battalion broken up into platoon and company garrisons in towns along the Melas-Coprata canal; 2nd Battalion at Oo-Tareen, with one company each detached to Van-Tareen and Eeta-Babaat.

4th Regiment Ligne (Belgian Line Infantry): Permanent garrison of Copratia. One or more companies usually engaged in sweeps.

6th Regiment Ligne (Belgian Line Infantry): Broken up into platoon and company garrisons along the Copratia-Nectar canal.

1st Regiment Chasseurs a Pied (Belgian Light Infantry): All raiding columns from the Lower Coprates into Nectar territory are currently drawn from this regiment.

Native Troops: Belgium has recruited native troops as local garrisons, but their ranks are often depleted by desertion, and they are poorly motivated. When generating a city garrison (see page 74), halve the number of men in the garrison and count them as one troop level lower.

Military Organization

MILITARY UNITS in Space: 1889 are represented by considerably fewer NPCs than the actual number of men in such a unit historically. This is done simply in the interests of playability and a more enjoyable game. If Belgian military units are encountered, the following organization is used.

Section: 1 noncommissioned officer (NCO), 3 privates (4 men total).

Platoon: 1 officer, 2 sections (9 men).

Company: 1 officer, 1 NCO, 2 platoons (20 men).

Battalion: 2 officers, 2 NCOs, 4 companies (84 men).

Regiment: 2 officers, 10 other staff personnel, 2 battalions (180 men).

The five regiments of the Belgian Legion also include a battery of artillery (three 12-pounder breech-loaders) and a troop of cavalry (20 men) each.

THE UPPER COPRATES

THE GREAT COPRATES Rift Valley is, next to the Great Canyon on the far side of Luna, the deepest dry land geological feature in the solar system. It dwarfs the Grand Canyon of Earth, both in absolute size and in breathtaking vistas. The stunning beauty of the Coprates stands in stark contrast to the brutal conflict which has been fought up and down its length for these past several years.

The Belgians first landed in the Coprates (pronounced COP-ra-tees) in 1876, and established permanent "scientific" camps by the next year, with expeditions ranging the length of the valley. There were occasional skirmishes (particularly over issues such as transit tolls, remuneration for damage caused to crops, and so forth) between native constabulary and the hired guards that accompanied the expeditions. In 1879 a Belgian expedition was attacked and badly cut up by elements of the Melassian Rural Constabulary. In response, King Leopold began recruiting and outfitting a Belgian Legion (mostly composed of foreign mercenaries) for service on Mars. The first battalion of the legion landed in mid-1880.

By 1882 two regiments of the legion were on Mars, and there were frequent large clashes with regular units of the army of Melas. This culminated in a formal campaign against Melas in the autumn, resulting in the fall of Melas City in early 1883. The violence spread throughout the next year, and Po-Poo-Hanna-Kitai (later renamed New Amsterdam) fell in 1885. In the same year the European powers declared the



Upper Coprates to be the personal possession of King Leopold II.

Infiltration across the borders during 1886 led to larger Belgian punitive expeditions being sent to the southeast, with a resulting breakdown in internal order in the city-state of Melas Lacus. Using this disorder as a pretext, Leopold declared the Lower Coprates to be a protectorate in 1887, and Belgian regulars were, for the first time, employed in combat. By 1889 the formal subjugation of the territory was complete (that is, all settlements had been forcibly brought under Belgian control). Resentment runs deep, and Martian patriots who have fled the valley continue to organize raids from outside Belgian territory, and Belgian pursuit forces have repeatedly crossed into neighboring lands. The potential for expansion of the conflict remains explosive.

One area that has long been a sore spot with the Belgians is the New Amsterdam-Candor canal. The traditional territory of Po-Poo-Hanna-Kitai extended for over 100 miles to the west, but scarcely 30 miles north, to the valley escarpment and the locks at Uri-Babaat. Cross-border raids from the highland plateau resulted first in Belgian punitive columns, and later in permanent subjugation of several of the canal towns and the placement of permanent garrisons. There are now Belgian garrisons as far north as Oo-Tareen, which has resulted in several protests from the city-state of Candor. Although Candor exercises no genuine control over the canal towns this far south, it does claim a measure of sovereignty over them and has dispatched regular troops to bolster the garrisons of Karaan.

THE SWAMP OF GORKLIMSK

THE SWAMP OF Gorklimsk is an unusual area of Mars created by a fairly recent (in a geological sense) major upheaval which has completely destroyed the banks and foundation of much of the Crocea-Gorklimsk canal, as well as several stretches of the Fadath-Gorklimsk canal. The result is a large, shallow swamp with multiply changing flow channels and small lagoons. Although some aerial mapping has been done, it is of little long-term value, as most of the channels are narrow enough to be obscured from the air by leafy overhanging branches. In addition, the actual navigable channels silt up on a regular basis, and the water flow cuts new channels through former islands and land banks. It is, in short, a genuine maze, which can take weeks, or even months, to navigate (except along the most frequently travelled passages).

Canal boats do travel between Gorklimsk and its two neighbors to the west, but do so at the risk of pirate attacks. Numerous small pirate skiffs often lie in wait in side channels and fall upon unsuspecting merchantmen. All attempts to eradicate them have failed, as the pirates simply disappear back into the labyrinth of the swamp when confronted by genuine force. Bands of pirates almost certainly live on the islands of the swamp somewhere, but no military power has yet succeeded in locating them.

THE RUINS OF BORDOBAAR

THE RUINS OF Bordobaar lie slightly over 200 miles southwest of the swamp. Although Bordobaar was once a mighty city, its population

was stricken by a sinister plague which caused (according to the local legends) grotesque physical deformity and murderous, uncontrollable outbursts of rage. Fleeing citizens were often attacked and killed by the inhabitants of the surrounding villages and towns out of fear that the disease would spread, but no cases were ever reported outside the city. Those who contracted the disease eventually went completely mad (or, as the more popular versions have it, reverted to a pure state of animal savagery) and killed each other off.

Several times people have attempted to move back into the city, but they have always left, telling tales of ruthless nocturnal attacks by man-sized savage beasts. Local legend has it that the royal treasury was never removed from the city; it still lies deep in the lower dungeons of the palace. Certainly many expeditioners have attempted to find the treasure, but few have returned. Those who have returned told similar stories of bloodshed and terror. If true, these stories indicate that the disease was passed on from generation to generation and has produced a race of powerful, murderous savages.

STATISTICS FOR THE SAVAGES OF BORDOBAAR

Type: Savages

#App.: 2D6

Size: 1 x 1

Move: L30

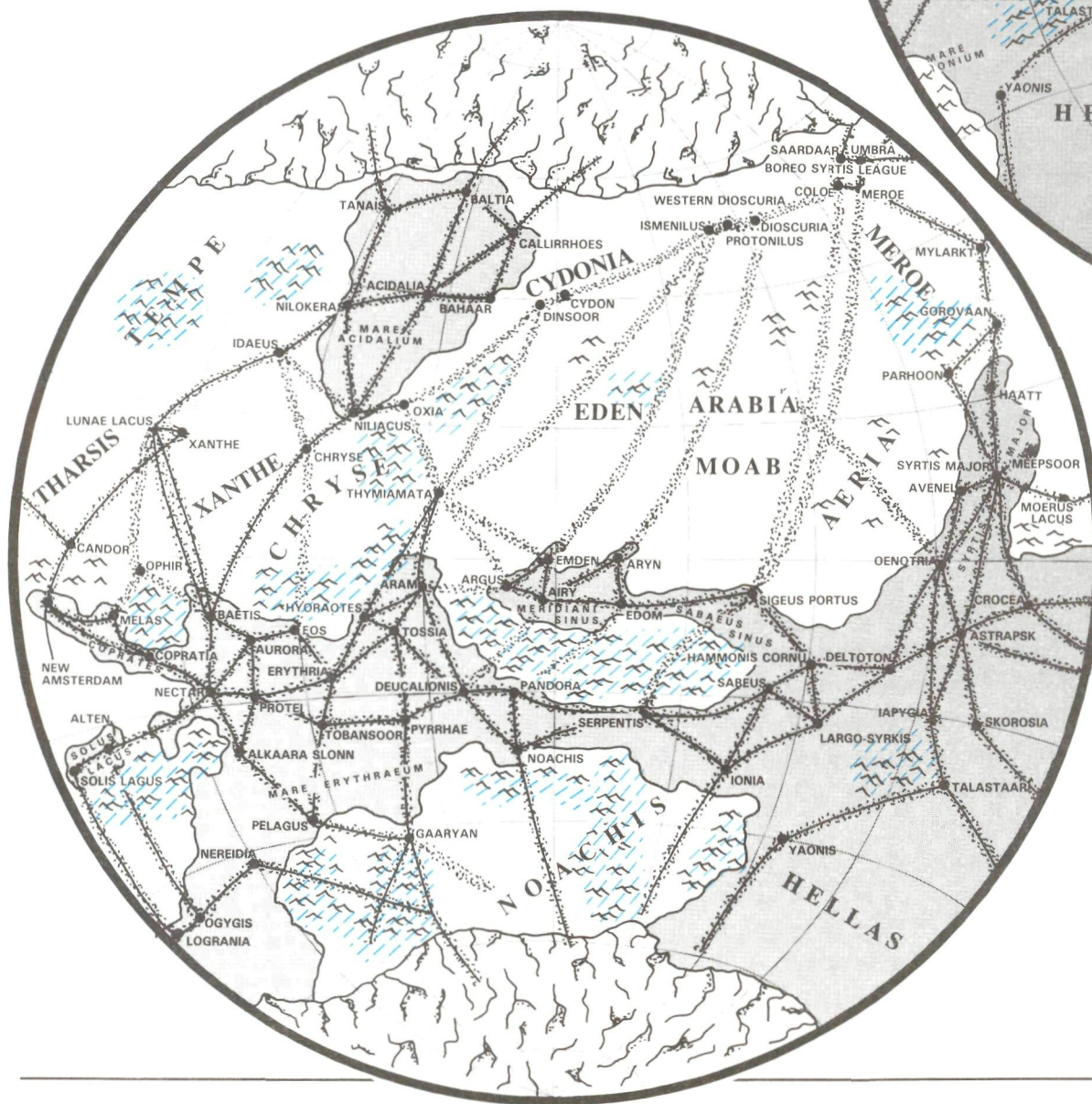
Wilds: 2

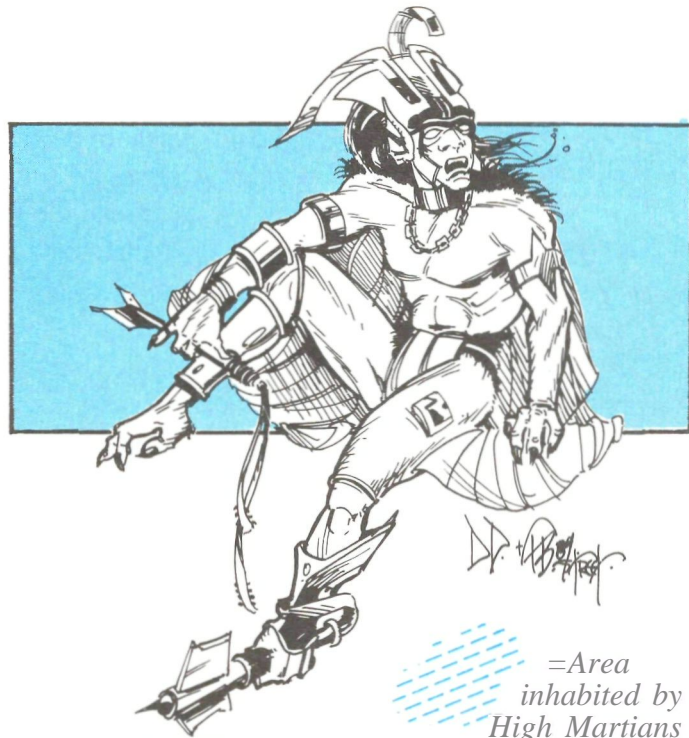
Save: —

Weight: 200

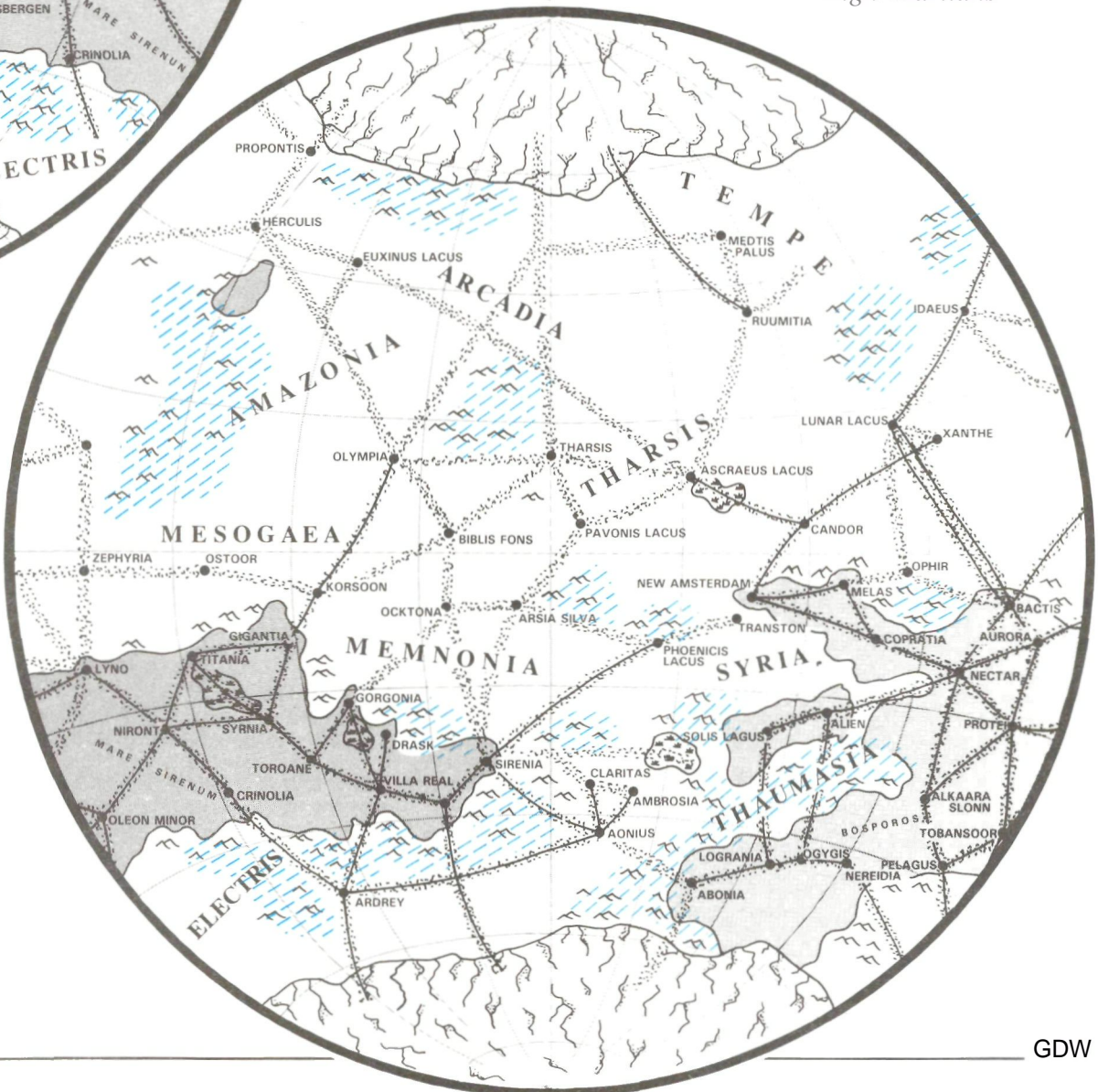
Weapons: Teeth (2, 2, 0, 1),
Claws (2, 2, 1, 1)

The Three Faces Of MARS





=Area
inhabited by
High Martians



THE LANGUAGES OF MARS

*Professor R. L. Forbes-Hamilton
Of the British Museum*

Canal Martian Languages

THE MANY LANGUAGES of the Canal Martians can be divided into six linguistic families. Most of the languages within a family are similar enough to be mutually intelligible, unlike many of the related languages of Earth.

Arcadian: The smallest of all the linguistic groups of Mars, Arcadian includes only one language which is still spoken, although Professor Montrose of Cambridge University has identified at least two additional dead languages which might properly be included in this family. Only fragments of the written forms of these languages exist from tomb carvings in the deserts of Arcadia and Amazonia. The one remaining spoken language is Euxine, which is used in the city of Euxinus Lacus and the surrounding desert villages and towns, as well as by a few of the wide-ranging nomadic Hill Martians of Amazonia, Mesogaea, and Arcadia.

Bootnai: Heavily inflected and tonal, Bootnai languages are extremely subtle in their shades of meaning and are notoriously difficult to learn. The two principal languages of the family are Hespesian and Memnite, the former being spoken in the Mare Tyrrhenum and Mare Cimmerium (which is to say the Hespe and Eridania regions), while the later is spoken throughout the Mare Sirenum as well as across Mesogaea, Memnonia, Electris, and Syria, including the upper reaches of the Coprates.

Boreaan: Boreaan is the original language of the ancient inhabitants of the cold, northern polar region of the planet. A series of southern migratory waves spread the Boreaans and their language almost to the equator, and they now inhabit the regions north of the Mare Cimmerium and Mare Sirenum. Undoubtedly due to their northern origins, the Boreaans tend to be shorter and stockier than other Canal Martians, resembling Hill Martians in general build, although unmistakably Canal Martians in such details as facial features, development of the bones of the foot, and so on.

The two principal languages of the Boreaan family are Cebreni and Zaph. Zaph is spoken only in the city-state of Zaphyria and the surrounding towns and villages, while Cebreni is very widespread, being the dominant language in Cebrenia, Elysium, Amenthes, and Aetheria.

Dio-Umbran: Second smallest of the Canal Martian linguistic families, the Dio-Umbran family includes just two spoken languages: Dioscurian and Umbran. The former is the language of the three cities of Western Dioscuria, while the latter is spoken by the four cities of the Boreo Syrtis League. Dio-Umbran languages are soft and sibilant, unusually so among Martian tongues, and have tremendous powers of expression and description.

Gaaryani: The Gaaryani family of languages includes all of those descended from Son-Gaaryani, the language of Seldon's empire. Consequently, this is a very wide linguistic group, and is a virtual worldwide *lingua franca* of diplomacy and government. The Gaaryani languages are notable for their pro-

longed vowel sounds and harsh consonants, characteristics which have been transferred, in part, to most other Martian languages as well (although their origins in Son-Gaaryani are clear). The six principal languages of the Gaaryani family are Na-Gaaryani, Noachan, Thark, Thaumasian, Parhooni, and Koline.

Na-Gaaryani is generally referred to by its speakers simply as Gaaryani but is called by its formal name here to distinguish the language from the broader linguistic family. Na-Gaaryani is spoken throughout most of the Mare Erythraeum region, the Mare Acidaloium, and along the canal traces between the two through the Xanthe steppe and the Chryse badlands.

Noachan is spoken in Noachis and the nearby cities of Pandora, Serpentinis, and Ionia. A very heavily accented version of Noachan is also spoken in the Meridiani Sinus and Sabaeus Sinus valley to the north.

Thark is a coarse, guttural language spoken throughout Tempe and Tharsis, while Thaumasian is the dialect of Thaumasia and the Lower Coprates (specifically, the cities of Abonia, Logrania, Ogygis, Solis Lacus, Alten, Nectar, and Copratia).

Parhooni is an isolated pocket of Gaaryani spoken in the Syrtis Major area and the Nepenthes-Thoth Steppe to the east. It is the language of all the cities of the British colony as well as Mylarkt, Thoth, Alclyon, and Kharkarhan. Most of the people in this area are similar in ethnic stock to the Syrtans to the south, but adopted the language of Seldon's empire when the imperial capital was moved to Syrtis Major.

Koline (trade-speech) is a pastiche of Son-Gaaryani and several other

languages. It is the trade language of Mars, spoken by almost all canal boatmen, merchants, and cloudship crewmen throughout the planet. It is a primitive language, but it is easily grasped and serves its purpose.

Syrтан: Syrtan is the original language of the vast basin of Syrtis Major and the seabed to the south. Unlike their neighbors to the north, most of the inhabitants of the region retained their original language. The two principal languages spoken in the area today are Oenotrian and Hellan. Oenotrian is spoken throughout the Oenotrian Empire (Oenotria, Delton, Astrapsk, Crocea, Skorosia, and Iapygia) as well as in the surrounding cities of Fadath, Largo Syrkis, Sabeus, and Hammonis Cornu. Hellan is spoken throughout Hellas, Trinacria, and Ausonia.

Hill Martian Languages

TRUE RACIAL Hill Martians can be found all across Mars, including the broad, flat grasslands and prairie of the seabeds. The Hill Martians of the seabeds, however, generally speak dialects of the dominant Canal Martian language of the region, and culturally these hunters and gatherers have as much in common with the sedentary Canal Martians as they do with their wild nomadic brethren of the arid highlands and deserts. It is among those proud and fiercely independent Hill Martians of the uplands that genuine native languages are to be found. Although our studies of these have, for all intents and purposes, scarcely begun, it is fair to say that there are four principal families of Hill Martian languages: Tempes, Alaanawaak, Moabite, and Rugoraant.

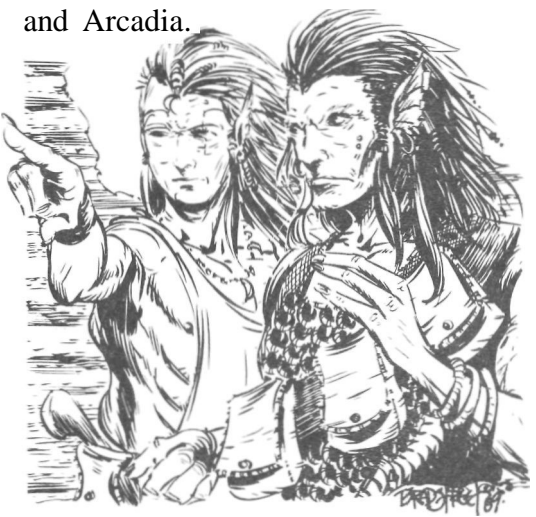
Tempes and Alaanawaak can be quickly disposed of, as each consists

of but a single language of the same name as the linguistic family. Tempes is spoken in the Tempe region, from the area around Medtis Palus and Ruumitia east to the western escarpment of the Mare Acidalium. Alaanawaak is the language of the aboriginal hunters of the southern polar cap, as well as the nomads of the broad, arid region lying generally between Electris and the Thaumasian Mountains.

The Moabite family of languages is more widely spoken and consists of three similar but distinct languages: Merovangian, Aerian, and Edenti. The first of these is the language of the fascinating wagon masters of Meroe, whose bands range as far west as Cydonia. Aerian is the language of the violent and insular tribesmen of the Aerian Hills, whose mastery of guerrilla warfare and ambush tactics has frustrated the efforts of both the Oenotrian and British empires to subdue them. Edenti is spoken by the predatory bands of desert wanderers who sparsely inhabit the desolate badlands that stretch from the western slopes of the Aerian Hills to the eastern foothills of the Chryse Mountains.

Most widespread of all the families of Hill Martian languages is Rugoraant, spoken by the tall, handsome inhabitants of the North Country from the Nepenthes-Thoth Steppe clear across to Tempe. Three distinct languages make up the family: Nepenthes, Aethani, and Amaash. The first is the language of the steppe nomads who inhabit the area between the Umbran-Syrтан Grand Canal in the west and the Polodaar-Syrтан Grand Canal in the south and east. Aethani is the language of the closely related (both linguistically and

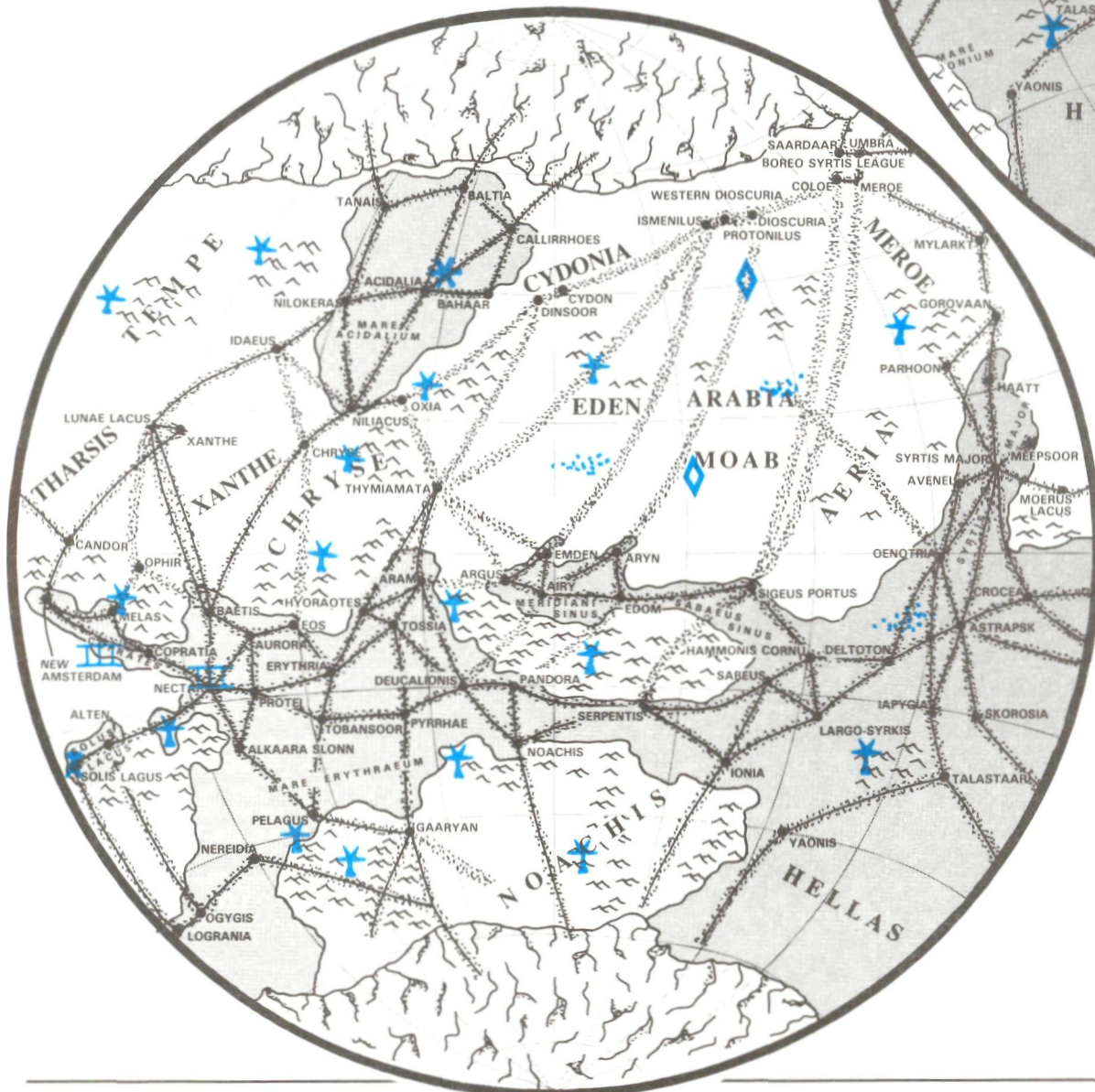
culturally) nomads of the vast, sandy desert stretching from Aetheria, east to the Amazonian Mountains. Amaash is spoken by the warlike tribes inhabiting the steppes and deserts of Amazonia, Mesogaea, Memnonia, and Arcadia.



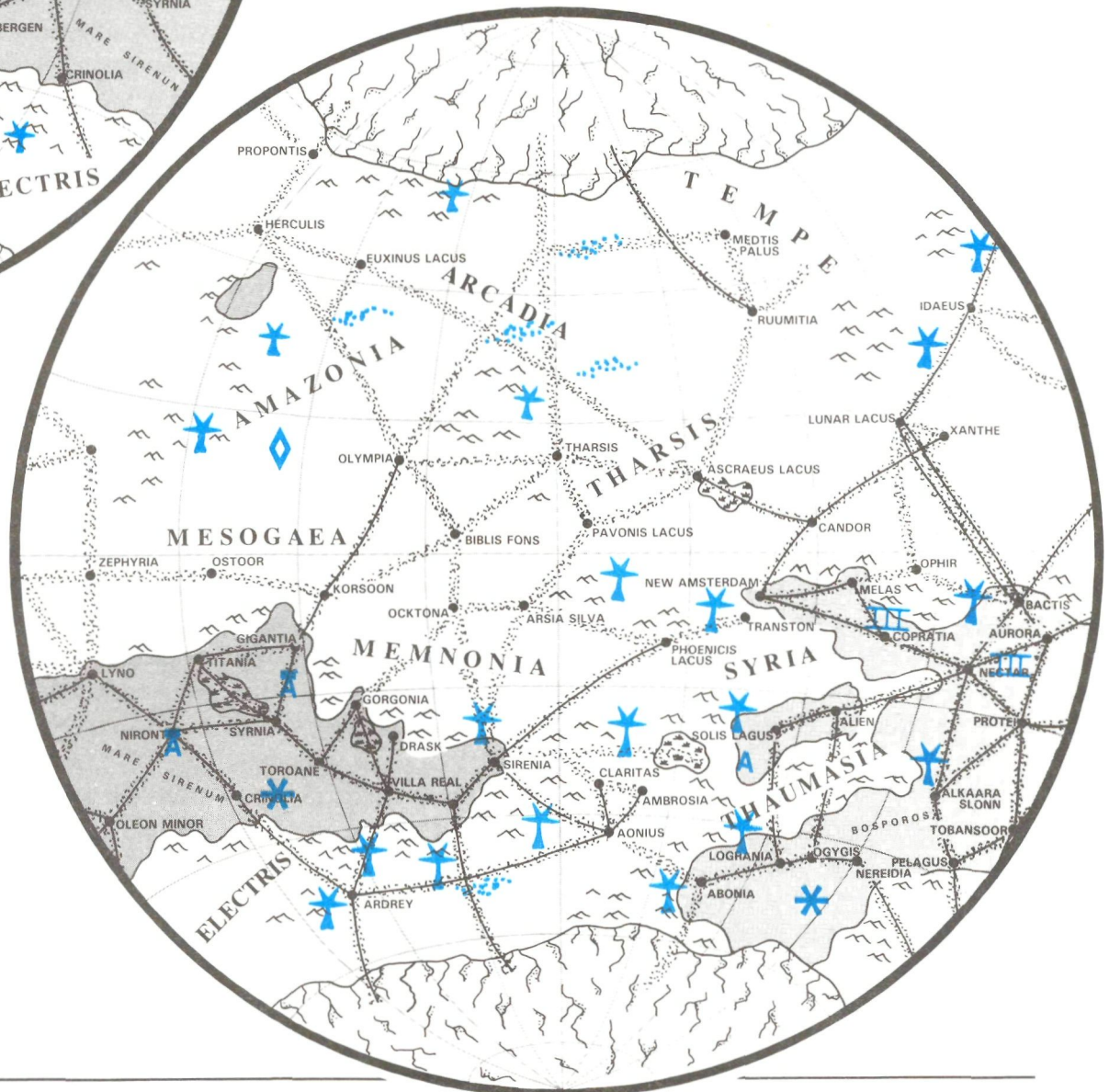
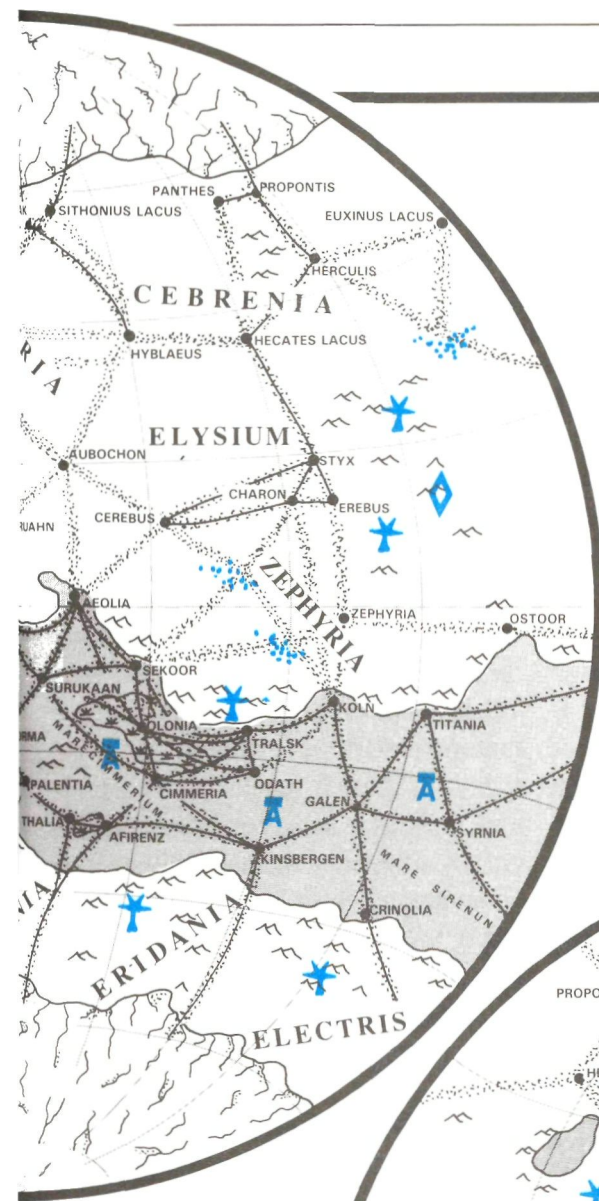
High Martian Languages

WHAT LITTLE is known of the languages of the High Martians is derived from contact with the inhabitants of the Astusapes Highlands and the Shistomik Mountains. To the extent that we can generalize from these two specimen cultures, it is fair to say that High Martian languages appear to have descended from similar roots and retained a strong family resemblance, but have become corrupted over the years and have lost many subtleties of meaning. Thus, we find nearly identical words in the languages of the Astusapes and the Shistomiks which now have completely different meanings. It is probable that the insular and inbred High Martian inhabitants of each mountain region speak their own primitive and corrupt version of what we have come to call Proto High Martian. Harsh and guttural of sound, primitive of grammar, and limited of vocabulary, these languages are adequate to the needs of their speakers.

The Riches Of MARS



The Riches Of Mars

*Liftwood**Jewels**Gumme**Major Ruined City**Oil**Spice*

GENERATING MARTIAN CITIES

MARTIAN CITIES are marked on the various maps provided, but their exact size and makeup are not specified. The following system is designed to provide you with a simple means of generating the important information concerning a city with a series of die rolls. As with all such systems in **Space: 1889**, however, the referee should not feel bound by its results; he is perfectly free, and is actively encouraged, to make up cities with radically different characteristics than those presented here. Continuous novelty is one of the keys to an intriguing and enjoyable world.

The basic procedure for generating a city is explained below. All the actual tables needed, along with a brief recapitulation of the procedure, are found on page 74.

Population

ROLL TWO dice and add 1 to the result for every canal that flows into the city. (Astrapsk, for example, which lies south of Syrtis Major, has seven canals flowing into it, so you would add 7 to the dice roll.) The modified dice roll is referred to as the population number. Make a note of it as it will be used in some of the later calculations. Now multiply the population number by 10,000 to determine the population of the city.

Form of Government

THIS IS determined by making two die rolls. The first determines whether the city is ruled by a strong or a weak prince (a result of 1-3 is strong prince; 4-6 is weak prince).

If a strong prince rules, the second

die roll determines his style of government. If a weak prince rules, the second die roll determines what faction exerts the real power over the city. Consult the Form of Government Table on page 74.

Strong prince styles of government include the following.

Despotic princes are absolutists who suffer no dissent and who arrange the affairs of the city solely for their own benefit. Ambitious princes are interested in increasing their power and prestige, either through intrigue or military conquest. Popular princes rule with the welfare of their subjects in mind. Decadent princes largely ignore affairs of state and have given themselves over to the pursuit of sensual pleasure.

In the case of a weak prince, the second roll indicates which social force has taken real control of the city. The entry "subject city" means that the city is actually ruled by the prince of a neighboring city.

Corruption

CORRUPTION REFERS to the willingness of local officials to take bribes. The three levels of corruption are honest, corrupt, and very corrupt. Officials in an honest city will not take bribes and will be inclined to arrest anyone offering a bribe. Officials in a corrupt city will often take bribes to hurry action on a request or will look the other way in the face of a transgression, provided it is not too serious. Officials in a very corrupt city will do virtually nothing without a bribe and will do anything if the bribe is large enough.

Consult the Corruption Table to determine the corruption level of the city, roll a die, and make the modifications listed. If the modified die

roll is 2 or less, the city is honest. If it is 3 or 4, it is corrupt. If it is 5 or more, it is very corrupt.

Economic Type

ECONOMIC TYPE is an indication of the principal means by which the city produces excess wealth. All cities have some mercantile activity, some manufacturing, and extensive farmlands up and down the canals radiating from the city. This die roll merely tells which type predominates. Consult the Economic Type Table. A result of mixed indicates that no one type predominates. A special resources result indicates that the city has access to some special commodity. Examples of this would be *bhutan* spice from the city of Umbra, gumme from the plantations outside Melas, or petroleum from the wells near Galen. Metal is scarce on Mars as well.

Economic Vitality

IS THE CITY poor, prosperous, or wealthy? This is determined, to a certain extent, by its location and form of government. Roll a die, make the listed modifications, and consult the Economic Vitality Table.

Quality of the Army

FOR EASE OF record keeping, the size of all Martian armies is calculated in terms of 60-man bands, with each man in the band being of the same NPC experience level (Green, Trained, Experienced, Veteran, Elite). The overall quality of the army determines the percentage of the army made up of each individual troop type, as shown on the Army Quality Table. The highest quality troops are often formed into a special royal bodyguard unit.

Mercenary Troops

IN THE UPLANDS, all mercenary cavalry will be Hill Martian nomad free lances, (with troop quality proportioned as for Excellent troops, regardless of the army quality of the city-state itself)- All other mercenaries in both the uplands and old seabeds are Canal Martian mercenaries. Troop quality will either be the same, better, or worse than that of the city-state. Roll a die and consult the Mercenary Quality Table.

Example: A city rolls a 3 for army quality (fair) and then rolls a 5 for mercenary quality, indicating that it is one higher than the city's, thus making the mercenary troops Good.

Size of the Army

THE MODIFIED population die roll is also the army size number, after the listed modifications have been made.

The army size number determines the number of bands in the army. There are two bands of infantry, one band of cavalry, and two guns for every army size number rolled. Prosperous cities have one additional band of mercenary foot or horse, and one additional gun for each army size number. Wealthy cities have one additional band of mercenary infantry and one additional band of mercenary cavalry, as well as two additional guns, for each army size number.

Fleet Quality

A CITY'S might is measured more by its cloud fleet than its army. Crew quality for cloud fleets is determined by rolling a die, making the listed modifications to the die roll, and consulting the Fleet Quality Table.

Fleet Size

THE FLEET size is measured in terms of the construction cost of its ships, and it depends on the wealth and population of the city. However, the population number is modified as shown on page 74. Once the modified population number has been determined, the level of economic vitality of the city determines the value of the fleet per population number.

Attitude

THIS IS THE general attitude prevalent in the city and of the government toward humans from Earth. Roll a die, make the listed modifications, and consult the Prevalent Attitude Table.

Settlements

CANAL MARTIAN settlements are found throughout the fertile seabeds and along the remaining active grand canals. These rules are designed to give the referee an easy means of generating these settlements.

Number Appearing: Without considering such things as nomadic encampments and High Martian kraags, there are two types of settlements: villages and towns. Villages are usually small inland farming communities, while towns tend to be trade and transportation centers along the grand canals. Both towns and villages are often surrounded by stone walls, particularly in the uplands. These are generally low walls for villages, but can sometimes be quite elaborate for towns, with occasional towers and strong gates.

Canal Hexes: Each 100-mile hex of the medium-scale maps have the

following numbers of villages and towns.

Grand canal hex in the old seabeds: 3D6 villages scattered throughout the hex and 1D6 towns along the canal.

Grand canal hex in the uplands: 1D6 villages scattered throughout the hex and 1D6 towns along the canal.

Noncanal hex in the old seabeds: 1D6 villages scattered throughout the hex.

Population: Each village has a population of 1D6 x 200. Each town has a population of 1D6x 1000.

Garrison: Each village has a garrison of 2D6 soldiers. Each town has a garrison of one band of infantry, one band of cavalry, and 1D6 guns. The largest town in the hex is the provincial capital and has a garrison three times this size. Roll one die and consult the following table to determine the troop quality of the garrison of each village and town. Add one to the die roll in the uplands.

GARRISON TROOP QUALITY

Roll Quality

1	Green
2-4	Trained
5-6	Experienced
7	Veteran

To determine which types of guns are present on the walls of a town, roll once on the following table for each gun present.

TOWN GUNS

Roll Gun

1	Light
2-3	Heavy
4	Rod
5	Rogue
6	Lob

CITY GENERATION SEQUENCE

1. Population. Roll 2D6 + number of canals) x 10,000.

2. Form of Government. Roll one die: 1-3, Strong Prince; 4-6, Weak Prince. Roll again for specific type.

3. Corruption. Roll one die: 2 or less, honest; 3-4, corrupt; 5 or more, very corrupt. Modifiers:

Despotic Prince, Decadent Price, Strong Priests, or Subject City: + 1
Popular Priest or Strong Merchants: — 1

4. Economic Type. Roll one die.

5. Economic Vitality. Roll one die. Modifiers:

City in Old Seabed: + 1

City Honest: + 1

City Very Corrupt: — 1

City in Upland: — 1

City in Upland Not on Grand Canal: — 2

Government Decadent, Strong Priests, Subject City, Strong Warriors: — 1

Government Popular, Strong Merchants, Strong Counselor: + 1

6. Army Quality. Roll one die. Modifiers:

Government Decadent, Strong Warriors: — 1

Government Popular: + 1

7. Mercenary Quality. Roll 1 die.

8. Army Size. Size number = population number, as modified. Modifiers:

Government Despotic, Ambitious: + 1

Government Strong Warriors: + 3

Government Decadent, Strong Merchants: — 1

Poor Army: + 1

Excellent Army: — 1

9. Fleet Quality. Roll one die.

Modifiers:

Government Decadent, Strong Warriors: - 1

Government Ambitious: + 1

10a. Fleet Size. Size number = modified population number. Modifiers:

Government Decadent, Subject City: - 1

Government Ambitious: + 2

Government Strong Warriors: + 3

10b. Fleet Value.

Poor Cities: £20,000 value per population number.

Prosperous Cities: £30,000 value per population number.

Wealthy Cities: £40,000 per population number.

11. Attitude. Roll one die. Modifiers:

Despotic, Strong Counselor, Strong Nobles: - 1

Strong Priests: - 2

Popular, Strong Merchants, Subject City: + 1

FORM OF GOVERNMENT

Roll	Strong Prince	Weak Prince
1	Despotic	Strong Counselor
2	Despotic	Strong Nobles
3	Ambitious	Strong Warriors
4	Ambitious	Strong Merchants
5	Popular	Strong Priests
6	Decadent	Subject City

CORRUPTION TABLE

Roll	Type
1-2	Honest
3-4	Corrupt
5-6	Very Corrupt

ECONOMIC TYPE TABLE

Roll	Type
1	Agricultural
2	Mercantile
3	Manufacturing
4	Special Resource
5-6	Mixed

ECONOMIC VITALITY TABLE

Roll	Vitality
1-2	Poor
3-4	Prosperous
5-6	Wealthy

ARMY QUALITY TABLE

Roll	Army	El	Vt	Ex	Tr	Gr
1-2	Poor	—	10%	20%	60%	10%
3-4	Fair	—	20%	50%	20%	10%
5	Good	10%	40%	40%	10%	—
6	Excellent	10%	60%	30%	—	—

MERCENARY QUALITY TABLE

Roll	Quality
1-2	One level worse
3-4	Same
5-6	One level better

FLEET QUALITY TABLE

Roll	Quality
1	Green
2-5	Trained
6	Crack

PREVALENT ATTITUDE TABLE

Roll	Attitude
1	Very Hostile
2	Hostile
3-4	Indifferent
5	Friendly
6	Very Friendly

MAJOR POLITICAL ENTITIES OF MARS

THE PREDOMINANT form of government on Mars is the city-state, routinely consisting of a major city on a grand canal which controls the towns and villages for perhaps 100 or 200 miles in all directions. Isolated stretches of canal farther away than this are often controlled by the closest large town, which often flatters itself with the title of city-state, but which is, in fact, far less important than that. In very remote areas, particularly in the uplands, it is not uncommon to find regions where every town along the canal is independent, with varying degrees of control over the surrounding villages.

Large political entities above the city-state level are rare, but several examples are worth noting. Two of these are European colonial holdings, while the others are native governments.

Syrtis Major

THE BRITISH crown colony, along with its treaty dependencies and the jointly administered regency territory of Parhoon, covers the entire Syrtis Major basin as well as parts of the adjoining uplands. Relations with the Parhoonese, Meepsoori, and Moerus Lacus highlanders are good, but relations are somewhat more strained with the subjects of the lowland cities. Britain is currently at war with the Oenotrian Empire.

Oenotrian Empire

THE FORMAL name of this political entity is the Six Cities League. It is nominally a federation of the six city-states of Oenotria, Astrapsk,

Crocea, Deltoton, Iapygia, and Skorosia. In practice, the leadership councils and high administrative posts are completely dominated by Oenotrian nobles, and the league is almost universally referred to as the Oenotrian Empire.

One major advantage of this multi-city league is that all the towns and villages within the area defined by the member cities have been brought under central rule, and incidents of brigandage and piracy are now virtually unknown. However, Oenotrian ambitions in the north (exemplified by a long-standing claim against the city of Avenel) have brought the empire into conflict with Britain. Despite the vast industrial might of Britain, the limited cargo capacity of existing interplanetary ether flyers and long transit times from Earth to Mars rule out quick, massive reinforcement of the colony, and the war which has recently broken out shows signs of potentially turning into a long, bloody affair.

The Boreosyrtis League

THIS IS A loose mercantile confederation comprised of the cities Umbra, Meroe, Coloe, and Saardaar. Merchant interests predominate in the governments of all the cities, and the principal source of revenues is bhutan spice, the production of which is a monopoly jealously guarded by the league members. The league has signed trade agreements which give the British exclusive rights to purchase the spice in return for certain defensive guarantees. Relations between the two have been cordial, although the current war with Oenotria is considered bad for business and is a troubling complication.

The Tossian Empire

THIS GENUINE empire is ruled by Emperor Krahaanik IV from the emerald throne in Tossia. The sprawling empire includes the cities of Hyoraotes, Thymiamata, Aramis, Duecalionis, Pandora, Noachis, Pyrrhae, Tobansoor, Erythria, and Protei, and dominates most of its neighboring cities. Increasingly concerned with Belgian expansionism, the empire has recently (and temporarily) put aside its differences with the stubbornly independent Prince Sitaani of Nectar and entered into certain defensive agreements with him. The exact details of these arrangements remain secret. However, Tossian heavy cavalry units have recently arrived in Nectar and are apparently being used to augment Nectaran patrols along the western frontier, where Belgian raiding columns have made periodic penetrations in pursuit of rebels. Should Tossian patrols clash with Belgian raiding columns, the results could have far-reaching repercussions.

The Belgian Coprates

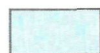
THIS REGION is held by a mixture of Belgian regulars, the Belgian Legion, and locally recruited native levies. Legally it is actually two distinct entities. The Upper Coprates is the personal domain of Leopold II, the Belgian king. It comprises the former city-states of Melas and Popoo-Hanna-Kitai (renamed New Amsterdam in 1888). The Lower Coprates is now a protectorate of the Belgian state and includes the former city-state of Melas Lacus (renamed Copratia in 1888) and vast tracts of surrounding territory. For more on the Coprates see pages 64-65.

LUNA: Land of the Moon Men

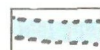
TERRAIN KEY



Solid Rock



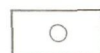
Water



Underwater Passage



City



Village



Mushroom Tree Forest



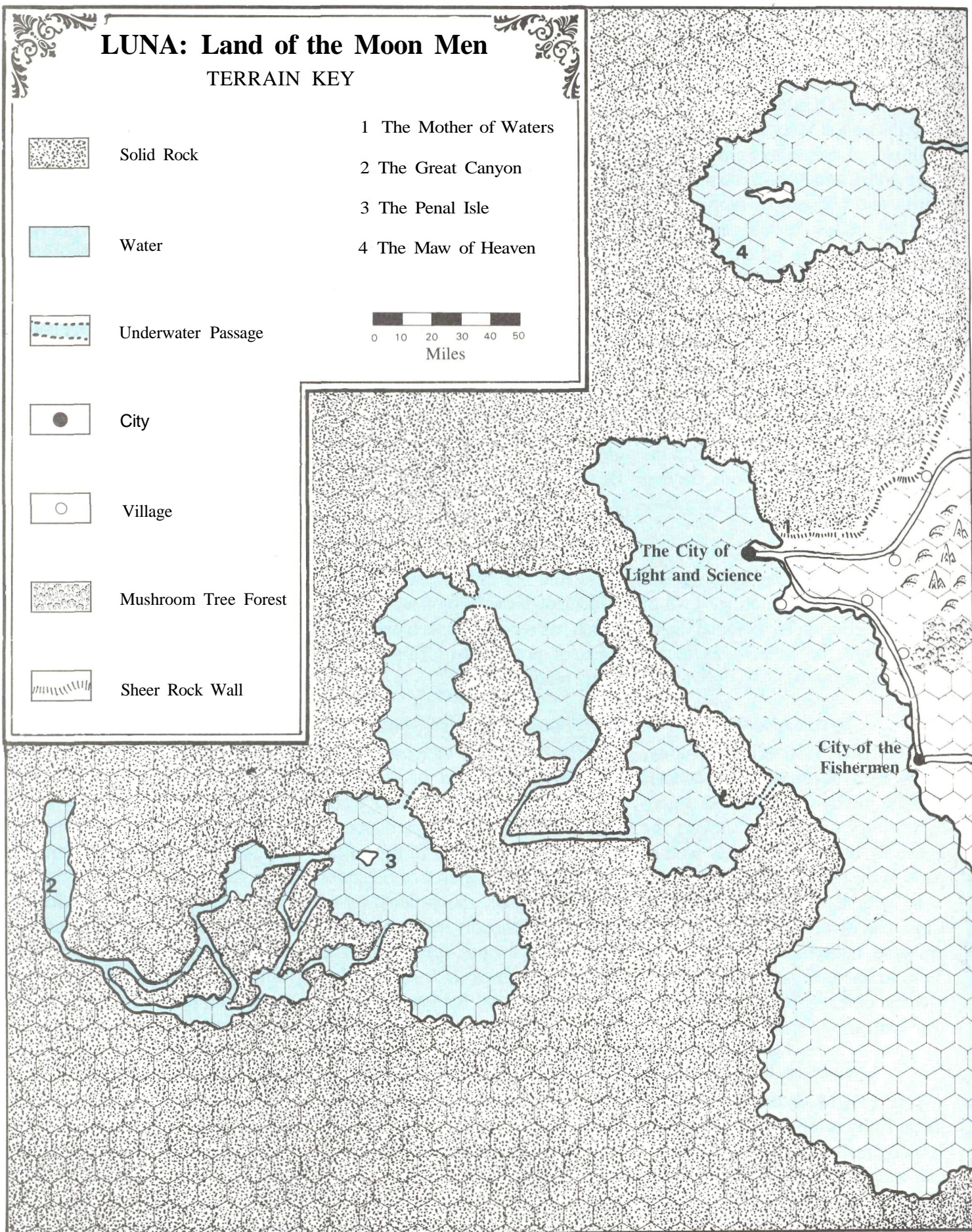
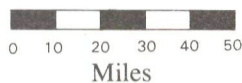
Sheer Rock Wall

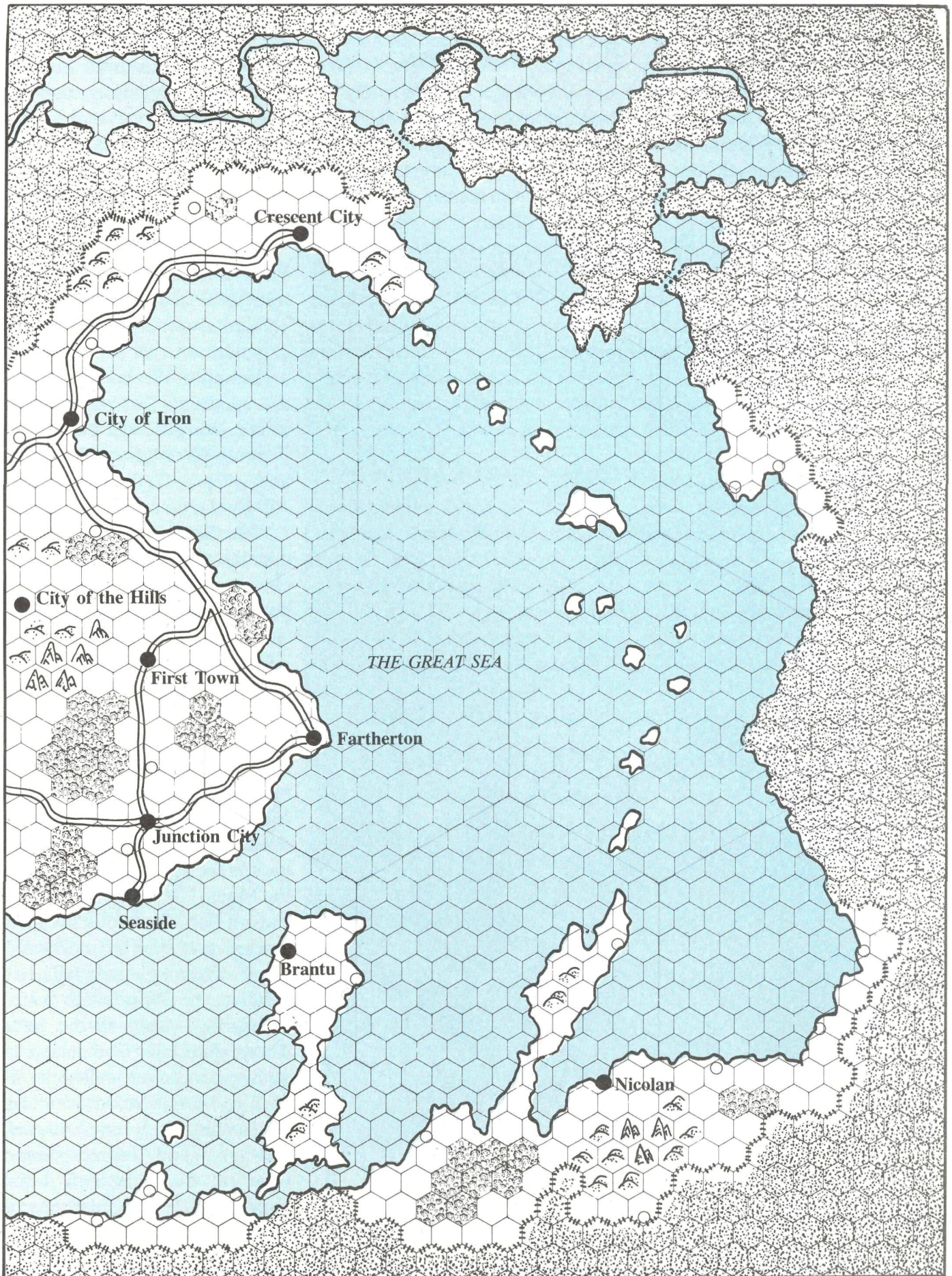
1 The Mother of Waters

2 The Great Canyon

3 The Penal Isle

4 The Maw of Heaven





LAND OF THE MOON MEN

THE LAND OF the Moon Men lies in a very large (roughly 300 miles in diameter) spherical cavern, deep inside the Moon. It can be reached by way of the 60-mile deep Great Canyon on the far side of the Moon, which terminates in a series of waterfalls and a large underground river. This river, after flowing through several winding passages and large bays, empties into the land of the Moon Men.

The spherical chamber is actually a very flattened sphere that is half full of water. Around the edges of the chamber are several shelves of rock and lunar soil which gently slope down to the water's edge. The Moon Men live on these shelves, farming mushrooms, raising herds of hum-mas, and fishing in the Great Sea. The ceiling is several miles high above the center of the sea.

MOON MEN

MOON MEN ARE actually descendants of the long-dead planet Vulcan, but they have forgotten their origins. The most striking difference from humans is their pale, almost translucent skin, which shows an elaborate network of veins and arteries, and a hint of the muscles working below the surface. Their skin has a faintly bluish cast, and is rough and scaly in texture. They are about man-size, perhaps a bit taller, but appear shorter as they are somewhat stooped.

CITIES OF THE MOON MEN

ALL 11 NAMED settlements on the map are independent city-states. Their specific values may be generated using the Martian city generation system (pages 72-74). All villages are generated as if they were Martian towns. All cities and towns

are walled to keep out the large predators that roam the area of the Great Sea, particularly caterpillars. The greatest threat to the cities is from giant sea turtles which occasionally emerge from the water and attack the settlements. These must be fought off with catapults.

Besides being inhabited by Moon Men, these cities and towns differ from those of Mars in several ways.

Population: There are no canals, so ignore this die roll modifier.

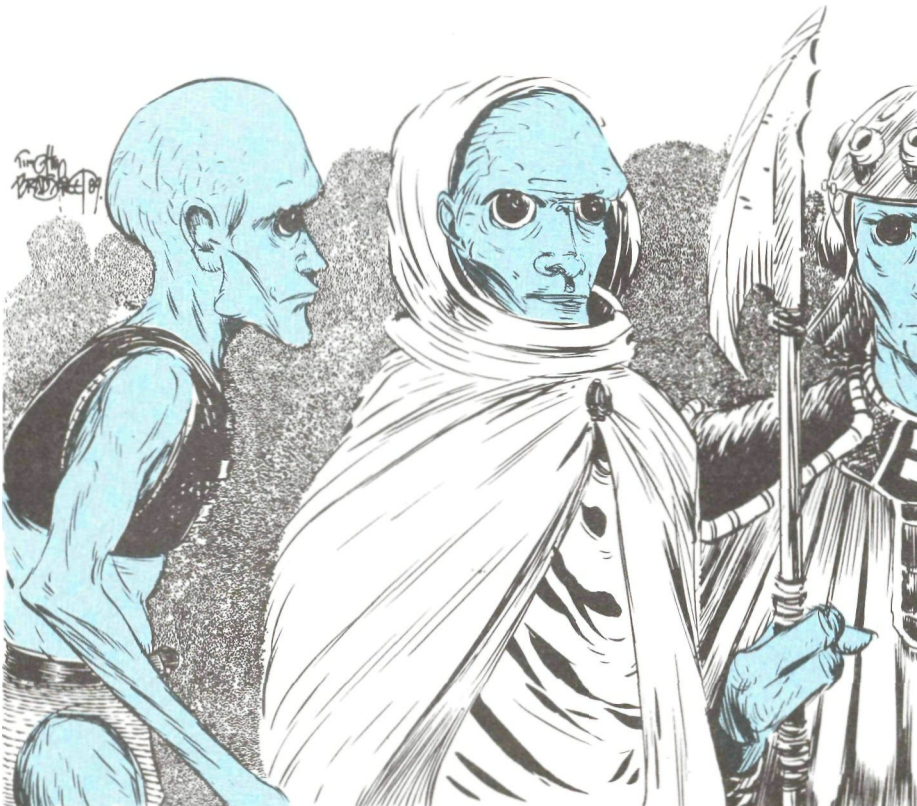
Economic Vitality: Ignore all die roll modifiers having to do with canals, seabeds, and the uplands.

Army Size: Ignore all references to cavalry units; the army has none. All guns are catapults instead.

Fleet Size: The fleet size is the number of armed naval vessels the city has. Half of these are oar-powered galleys; the rest are old converted motorboats. All are armed with catapults which throw either stones or long, iron-tipped arrows.

WATER CYCLE

THE LAND OF the Moon Men has a very active water cycle, which can be viewed as beginning at the Great Canyon (that 60-mile-deep gash in the surface of the far side of the Moon). Several miles above the canyon floor numerous streams and creeks empty from the rock walls and form cascading waterfalls' which combine to form solid walls of thundering water at the bottom. These waterfalls feed into a large underground river, called the River of Life by the Moon Men, which winds through a series of snaking passages and large connected spherical chambers until it finally empties into the Great Sea. The water then flows through more pas-



sages further down until it reaches the Maw of Heaven, a large whirlpool over a vertical passage, which allows the water to drain into more passages further below. These passages lead to the still-molten center of the world where the water is explosively converted to steam. The steam vents upward through an entirely different set of chimneys and winding passages, one of which passes through a set of caverns connected with the spherical chamber containing the Great Sea. This cavern is called the Mother of Waters by the Moon Men. Eventually the steam cools and condenses into water which feeds the system of streams and creeks several miles above. These flow toward and drain into the Great Canyon, thus starting the cycle over again.

The Moon Men had, at one time, explored all the connecting chambers up to the Maw of Heaven, but they have now forgotten about the underwater passages leading to it from the Great Sea. A small, forgotten colony of Moon Men lives on an island in the large cavern containing the Maw of Heaven. Navigation near the whirlpool itself is very dangerous.

TRAVEL ON THE RIVER OF LIFE

TRAVEL DOWN the underground river should be conducted in four-hour periods. The referee rolls once for a river encounter (see the encounter chart), once each period of travel, and once each rest period. If players drift with the current, they will move one hex downstream each four-hour period.

If the players are in a man-powered vessel and paddle downstream, they will move one and a half

hexes a turn (one hex every turn, and an additional hex every other turn). If they are paddling against the current or on a large open bay or sea, they will move one hex every other turn. Players may only paddle eight hours a day.

A small steamer (if the players can somehow manage to get one to the Moon and into the canyon) will make two hexes per turn with the current, one and a half hexes per turn on open bays and seas, and one hex per turn against the current.

CONSOLIDATED LUNAR ENCOUNTERS

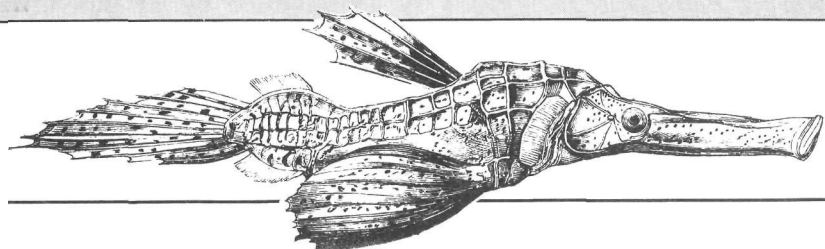
<i>Terrain</i>	River	Bay	Sea	Land	Cavern
<i>Encounter #</i>	2	4	4	2	4
<i>Die Roll</i>	<i>Encounter Type</i>				
1	Fish	Fish	Fish	Flyer	Bat
2	Fish	Fish	Boat	Bat	Bat
3	Fish	Flyer	Flyer	Caterpillar	Rat
4	Grabber	Flyer	Whale	Rat	Rat
5	Grabber	Whale	Snake	Humma	Caterpillar
6	Snake	Snake	Turtle	Moon Man	Caterpillar

Note: If Boat or Moon Man encounter is rolled, roll again below.

<i>Die Roll</i>	<i>Moon Man Encounter</i>	<i>Boat Encounter</i>
1	2D6 Soldiers	Boat, 1D6 Fisherman
2	1D6 Merchants	Boat, 1D Fishermen
3	1 Hunter	Boat, 1D6 Fishermen
4	1D6 Fishermen	Motorboat, 2D6 Soldiers
5	1 Farmer	War Galley, 6D6 Soldiers
6	2D6 Thugs	Submarine

CONSOLIDATED LUNAR ANIMAL CHART

<i>Type</i>	<i>#App</i>	<i>Size</i>	<i>Move</i>	<i>Wnds</i>	<i>Save</i>	<i>Wt. (lbs)</i>	<i>Weapons</i>
Humma	2D6	1 x 1	L20	1	—	30	None
Rat	1D6	Tiny	L10	1	—	2	Teeth (1, 1, 0, 1)
Caterpillar	1	1 x 3	L10	10	1	1000	Fangs (2, 2, 0, 1) Coils (-, -, -, 4)
Sea Turtle	1	4 x 4	W10	20	2	30 tons	Teeth (1, 2, 1, 6)
Bat	Swarms	1 x 1	F40	1	—	2	Swarm (8, 1, 0, 1)
Flyer	1D6	2 x 2	F40	2	—	100	Teeth (2, 4, 1, 1) Talons (2, 2, 1, 1)
Fish	Swarms	Tiny	W20	1	—	2	Swarm (6, 1, 0, 1)
Grabber	1	1 x 3	W10	6	1	400	Tentacles (6, 3, 3, 2)
Water Snake	1	1 x 4	W20	4	—	200	Teeth (2, 3, 0, 1)
Whale	1	2 x 4	W10	10	2	8 tons	Teeth (2, 3, 1, 2)



SHIP COMBAT

IN THE UNLIKELY event of a naval action, use the rules for water vessel combat given on page 5, with the following additions. A modified form of the aerial combat rules may be used. If a submarine rams any ship, the rammed ship sinks. If a galley rams any ship other than a submarine, the rammed ship sinks.

Submarines have a speed of 3, take 10 hull hits before sinking, and have an armor value of 1.

Motorboats have one 20-pounder catapult (if they are armed at all), have a speed of 4, take 6 hull hits before sinking, and have no armor.

War galleys have two 20-pounder catapults, have a speed of 2, take 20 hull hits before sinking, and have no armor.

Sea turtles attack ships as if ramming them, doing 1D6 worth of hull hits every time they successfully ram. They have a speed of 2, take 20 wounds before dying, and have an armor level of 1. All catapult and cannon hits cause 1D6 wounds per damage level.

Most of the Moon Men cities use two types of catapults. Both types are like crossbows, using highly resilient humma fiber for torsion. The smaller ones, which are usually mounted on war galleys, throw a 20-pound stone to a range of about 800 yards (although one would only throw a stone for about half that distance on Earth).

SHIP COMBAT STATISTICS

<i>Weapon</i>	<i>Pen</i>	<i>DV</i>	<i>ROF</i>	<i>Rng.</i>
20-pounder	0	1	(1)	2/4
60-pounder	1	2	(1)	2/4

STOCK NPC DESCRIPTIONS

<i>NPC Type</i>	<i>Experience</i>	<i>Marksman</i>	<i>Attributes</i>	<i>Arms</i>
Soldier	Exp/Vet	4	Physical	Bow, Saber
Merchant	Grn/Trn	1	Mental	Knife
Fisherman	Trn/Exp	3	Physical	Spear
Farmer	Grn/Trn	1	Physical	Knife
Hunter	Grn/Trn	5	Physical	Bow
Prison Guard	Grn/Trn	2	Physical	Saber
Priest	Grn/Trn	2	Mental	Knife
Thug	Trn/Exp	1	Physical	Knife
Soldier*	Trn/Exp	4	Physical	Electric Rifle

*Soldier in the City of Light and Science.

The heavy catapult, which is only found mounted on the walls of cities, throws a 60-pound stone about the same distance. The light catapult requires a crew of 2, the heavy 4.

THE CITY OF LIGHT AND SCIENCE

OF ALL THE cities of the Moon Men, only the City of Light and Science retains a residue of the advanced technology of the Moon Men's Vulcan ancestors. These artifacts are now objects of religious veneration, and the city is autocratically governed by the Science Priests, with dissenters and heretics locked in the city's dungeons or sent to the penal island upriver.

The City of Light and Science has a fleet of six unarmed submarines, which are still capable of ramming and sinking most surface craft. It also has 24 electric motorboats - most are used for fishing, but a few are used as coastal patrol vessels. Soldiers are armed with electric rifles, described to the right, while the walls of the city are guarded by 13 gun towers, each with an electric cannon. These function exactly as described in the basic game under "Inventions" and

have a reliability number of 4. The city has a very small armed force, most of which is actually armed police and prison guards, not soldiers in the true sense of the word. While there are occasional armed clashes between the other cities, the technological might of the Science Priests has discouraged any would-be attackers, and the Science Priests have no interest in extending their influence beyond their city.

MOON MEN RIFLES

Weapon: Electric Rifle

Shots: 1-6

Mag: 100

Reload: 2

Wnd: 1-2

Req Str: 2

Save: 1

Range: 50

Note: An automatic setting on these rifles allows them to fire six shots per action, but this setting is never used by the Moon Men (its use is, in fact, prohibited) because it is nearly impossible to manufacture the special magnetic darts used as ammunition.

FRANK CHADWICK

CONKLIN'S ATLAS *of the* WORLDS

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Conklin's Atlas supplies vital information, for player and referee alike, to broaden the horizons of adventure throughout the Solar System.

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The Riches of Mars
The Swamps of Gorklimsk
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