

# The Terrohuman Future History of H. Beam Piper

by John F. Carr

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*Horace Beam Piper, the son of a minister, was born in 1904 and died by a self-inflicted gunshot wound on November 9, 1964. He started working for the Pennsylvania Railroad as a laborer at age eighteen and received no further formal education.<sup>1</sup> He was self-educated in both science and history, "without"—he once said—"subjecting myself to the ridiculous misery of four years in the uncomfortable confines of a raccoon coat."<sup>2</sup> H. Beam Piper was first and last a John W. Campbell writer, his first SF story, "Time and Time Again," appeared in *Astounding* in April 1946, and his last, "Down Styphon!," in *Analog* in November 1965.*

The most successful of the political future histories in science fiction incorporate either a strong socio-economic or political theme, use a powerful historical philosophy (such as James Blish's

Spenglerian approach to the Cities in Flight series, and Isaac Asimov's Gibbon-influenced Foundation future history) or transform historical events into plot models. H. Beam Piper wielded all of these elements in his crowning creation, the Terrohuman Future History, a unique chronicle of the future spanning more than four millenia. In the study of Piper's Terrohuman Future History that follows, I intend to explore his use of political themes, his historical philosophy, and his utilization of historical paradigms.

First, I will discuss Piper's major political themes and how they molded his future history. I have identified eight major and minor themes, most of them interrelated, which recur throughout most of his published science fiction. The three major political themes that apply to this discussion are the self-reliant man or John W. Campbell's

## H. BEAM PIPER

H. Beam Piper was a reticent and solitary man who left almost no written records concerning either his personal life or his political and historical convictions. Therefore, to draw any meaningful conclusions about his historical philosophy, I have had to rely on personal reminiscences of some of his friends, primarily Jerry Pournelle and Charles N. Brown; the Piper/Pournelle correspondence and the Piper/Brown correspondence; letters from Frederik Pohl and Piper researchers William J. Denholm III and Richard A. Moore; and the views Piper expressed in his own works.

Jerry Pournelle, who assisted Piper in constructing the latter parts of the Terrohuman Future History and was working on his doctorate in political science during that period of time, remembers Piper admitting to him several times that he placed his own political and historical philosophy into his stories. John H. Costello, who wrote the three-part series in *Renaissance* called "H. Beam Piper: An Infinity of Worlds," drew most of his data from Piper's published works and made the following statement in the introduction:

Into his stories he [Piper] put a great deal of philosophy—of the Campbellian sort—and, this writer thinks, a great deal of himself. Which is fortunate, as he was in life a most private man, and other than reminiscences from some of the people who knew him there is little to put down on paper that Piper did not state, either explicitly or between the lines, in his published works.

This contention is further bolstered by some autobiographical comments Piper made in his only published mystery novel, *Murder in the Gunroom*, where one of his minor characters, Pierre Jarrot—a science-fiction writer and confidant to the protagonist, Jeff Rand—replies to the question "What are you writing?":

Science-fiction. I do a lot of stories for the pulps . . . *Space-Trails*, and *Other Worlds*, and *Wonder Stories*; mags like that. Most of it's standardized formula-stuff; what's known in the trade as space-operas. My best stuff goes to *Astonishing*. Parenthetically, you mustn't judge any of these magazines by their names. It seems to be a convention to use hyperbolic names for science-fiction magazines; a heritage from what might be called an earlier and ruder day. What I do for *Astonishing* is really hard work, and I enjoy it. I'm working now on one of them, based on J. W. Dunne's time-theories, if you know what they are. [pp. 152-53]

Replace *Astonishing* with *Astounding*, Piper's major and lifelong SF market, and you have a cogent look at the SF market of that time (the early 1950's), an interesting assessment of SF writing, and Piper's own attitude about his writing. J. W. Dunne's time-theories formed a large part of the theoretical basis for Piper's Paratime stories, which first appeared about the same time he must have been writing *Murder in the Gunroom*.

—John F. Carr

*Citizen*,<sup>3,4</sup> the fragility of civilization, and its correlate: the threat of barbarism from within and without.

In many ways H. Beam Piper epitomized Campbell's *Citizen*; Jerry Pournelle describes Piper as a courtly gentleman, soft-spoken but determined, quiet, somewhat melancholy but with a wry wit, and self-reliant—in large part his suicide was brought about by his determination not to become financially dependent upon either his friends or the state. This is not to say that Piper did not have any flaws; he was a heavy drinker and has been described by one intimate as being obstinate and occasionally quick-tempered.

As with most of Campbell's other writers, Piper's heroes were cut from the same self-reliant mold: Jack Holloway of the Fuzzy novels, Conn Maxwell of *The Cosmic Computer*, Verkan Vall of the Paratime series, and Lucas Trask of *Space Viking*. Their foils were the fools, the misguided, the lazy, the do-gooders, and the mad King John figures, like psychotic Andray Dunnan and his Hitler-like creature Zaspas Makann of *Space Viking*.

Piper, like Campbell and his fascination with the Dean Drive, Scientology, psi talents, and Rhine's research, had a strong interest in psychic phenomena. While the mystic element looms prominently in his Paratime series with its J. W. Dunne-based rationale, it is noticeably absent in the stories within his Terrohuman Future History.

Piper was also influenced by Alfred Korzybski, the Polish-born father of semantics, and his *Science and Sanity*. In *Murder in the Gunroom* Piper's protagonist says, "Yes. I first read it [*Science and Sanity*] in the 1933 edition, back about 1936; I've been rereading it every couple of years since. . . [the man he is talking to, SF writer Pierre Jarrett, answers] . . . I find General Semantics helpful in my work, too . . . I can use it in plotting a story. . . ." Later in that novel, Piper mentions S. I. Hayakawa and shows a dedication to the principles of semantics throughout the book.

Piper's concern with the clarity and objectivity of language was reflected in his straightforward prose style, which could best be described as clean and lean.

While Piper's idealization of the self-reliant man was of great importance in the shaping of his entire body of work, he was no firm adherent to the "great man" school of history. Neither Conn Maxwell of *The Cosmic Computer* or Lucas Trask of *Space Viking* is able to single-handedly prevent or end the long night of barbarism that follows the death of the Terran Federation. Instead it is the ongoing dialectical struggle between his themes of the vulnerability of civilization and the threat of barbarism, from within and without, that determines the course of his Terrohuman Future History. From his friends and his letters, it is quite apparent that Piper valued civilization greatly and feared its demise by the extension of Clausewitzian policies.

However, it is quite clear from his works that Piper believed that no human civilization would ever be more than a stanza before the next verse of human history. Lucas Trask, near the end of *Space Viking*, says, "It may just be that there is something fundamentally unworkable about government itself. As long as *Homo sapiens terra* is a wild animal, which he has always been and always will be until he evolves into something different in a million years or so, maybe a workable system of government is a political-science impossibility. . . ." This is a political reality which Piper accepts as neither good or bad—just a law like the Second Law of Thermodynamics.

Not even the First Galactic Empire, the proud successor of the Terran Federation, is immune from the decay of civilization. In "A Slave Is a Slave" Prince Trevannion states, "But we will not again permit the plague of competing sovereignties, the condition under which war is inevitable. The first attempt to set up such a sovereignty in competition with the Empire will be

crushed mercilessly, and no planet inhabited by any sapient race will be permitted to remain outside the Empire."<sup>7</sup> But even the Empire's strongest sanctions cannot prevent her decline for in "The Edge of the Knife," a story about a history professor plagued with vision of the future, the professor foresees the disintegration of the First Galactic Empire.

And just who are these barbarians who are busy undermining the foundations of civilization: "These are homemade barbarians. Workers and peasants who revolted to seize and divide the wealth and then found they'd smashed the means of production and killed off all the technical brains. Survivors on planets hit during the Interstellar Wars . . . who lost the machinery of civilization. Followers of political leaders on local-dictatorship planets. Companies of mercenaries thrown out of employment and living by pillage. Religious fanatics following self-anointed prophets."<sup>8</sup> Near the end of *Space Viking* Piper draws an even finer picture: "There is not one of them [our rulers] . . . who is devoted to civilization or anything outside himself, and that's the mark of a barbarian."<sup>9</sup>

Piper's barbarian is very similar to José Ortega y Gasset's conception of mass-man in Ortega's *The Revolt of the Masses*. As defined by Ortega, mass-man feels at one with everyone else regardless of station or achievement and reacts to evaluation with resentment and hostility. Mass-man is natural man, desiring to impose his will upon the rest of the world. When mass-man determines the course of government, the result is hyperdemocracy and then fascism.<sup>10</sup>

When Piper describes mass-man in *Space Viking*, his description almost parallels Ortega's:

The barbarians are rising. . . Every society rests on a barbarian base. The people who don't understand civilization, and wouldn't like it if they did. The

hitchhikers. The people who create nothing, and who don't appreciate what others have created for them, and who think civilization is something that just exists and that all they need to do is enjoy what they can understand of it—luxuries, a high living standard, and easy work for high pay. . . .

It wasn't the war that put Hitler into power. It was the fact that the ruling class of his nation, the people who kept things running, were discredited. The masses, the homemade barbarians, didn't have anybody to take their responsibilities for them.<sup>11</sup>

During the early nineteen-hundreds when Ortega wrote *The Revolt of the Masses*, he felt that many of the representative governments were approaching a state of mass anarchy which he termed hyperdemocracy, a state where mass-man dominates government through the flux of public opinion and competing pressure groups. Hyperdemocracy comes about when mass-man has discredited his governmental representatives or they abrogate their own authority. Piper describes such a situation in *Space Viking* on the planet Marduk, which is ruled by a representative government with a titular monarchy. "What they have on Marduk is . . . [a] ruling class that has begun to believe that the masses are just as they are, which they manifestly are not. And a ruling class that won't use force to maintain its position. And they have a democracy, and they are letting the enemies of democracy shelter themselves behind democratic safeguards."<sup>12</sup>

Interestingly enough, Ortega believed that it is only Noble man—Piper's self-reliant man—who is capable of governing, ideally in a representative government, with restraint and purposeful decision. According to Ortega, Noble man is not the aristocrat of birth, but the aristocrat of the intellect, one who is self-surpassing, a man who has lifted

himself out of the mass and given himself character. In "Oomphel in the Sky" Piper describes his self-reliant man as the one who "actually knows what has to be done and how to do it, and he's going right ahead and doing it, without holding a dozen conferences and roundtable discussions and giving everybody a fair and equal chance to foul things up for him."<sup>13</sup>

Ortega also held that the best possible form of government was that of liberal democracy, even though it was endangered by the very freedom it offered to mass-man. Despite mass-man's egotistic demands, he believed that it was possible for Noble man and mass-man to coexist in a continual state of tension within a representative government. Piper too was an advocate of representative government, as in the Terran Federation; although in his later works, he appears to be leaning toward an enlightened monarchy—perhaps as a means to overcome the resistance of bureaucrats and Welfarers to simple solutions and direct action. Piper was also aware of the tension between self-reliant man and the masses, as in *Space Viking* when Lucas Trask says to Prince Simon Bentrík: "You have to learn, too, that a ruler cannot afford to be guided by his fears of what people will say about him. Not even what history will say about him. A ruler's only judge is himself."<sup>14</sup> While there is no record of whether Piper was directly influenced by Ortega, they did share much the same pessimistic view of man and civilization. I will return to Ortega later during the discussion of Piper's historical philosophy where I will examine some further parallels in an overview of Piper's Terrohuman Future History.

As James Blish stated in his Spenglerian overview of science fiction, there are two kinds of historical philosophy, the cyclic and the linear.<sup>15</sup> Most linear historians believe that history follows a determined course towards some type of (they feel) positive state:

this group includes the Christian determinists; the utopian socialists such as Sir Thomas More, H. G. Wells, and the Fabian Socialists; the positivists like Saint-Simon and Auguste Comte, who believed the human sciences would one day attain the unity and elegance of natural science; the social darwinists like Herbert Spencer, who believed in the evolutionary struggle of societies; and the economic determinists such as Charles A. Beard, and Karl Marx, who believed in the materialist conception of history and the "perfectability of man."

The major proponents of the cyclical theory of history were: Oswald Spengler, who held that every culture passes through a life cycle similar to that of the four seasons; Georg Hegel, who divided history into a series of succeeding epochs, each of which expresses a particular phase in the development of the World Spirit<sup>16</sup>; Vilfredo Pareto, who viewed history as the *circulation of elites* with few, or no, positive consequences for the "people"; Fredrich Nietzsche, who believed history was not only cyclic but repeated itself in fine detail; and Arnold J. Toynbee, whose somewhat cyclic view of history held that the course of history was determined by psychic forces as well as economic and social forces.

There are other theories of history: geographical determinism and the "great man in history" theory—Emerson once held that all that was important in history could be told in the biographies of the great men—however, none of them offer a coherent philosophy of history. Piper himself held a cyclic view of history; the Terrohuman Future History covers the fall of the Terran Federation, and four galactic empires.

There are a number of interesting similarities between Piper's and Arnold Toynbee's view of history. Piper makes mention of Toynbee in "The Edge of the Knife," when he has his history professor say: "History follows certain patterns. I'm not a Toynbean, by any manner of means, but any historian can see that certain forces generally tend to

produce similar effects."<sup>17</sup>

Piper's Terrohuman Future History has much of the breadth of Toynbee's *A Study of History* and his civilizations pass through some of the same phases as Toynbee's, such as the *universal state*, the *time of troubles*, and the *inter-regnum*.<sup>18</sup> Toynbee's universal state, an entire society incorporated into one political community, is found in Piper's First Galactic Empire which encompasses all known terrohuman societies. At the end of *The Cosmic Computer*, the Terran Federation is at the beginning of a time of troubles, as Federation society is no longer creative and in a state of decline. *Space Viking* tells of the inter-regnum after the fall of the Terran Federation and before the emergence of the First Galactic Empire. In *Space Viking* there is also an example of Toynbee's "chaotic intrusion of a barbarian heroic age" as the Space Vikings ravage the Old Federation. By the time of "A Slave Is a Slave" the Space Vikings have taken on an almost mythic quality: "Then they had erupted, suddenly and calamitously, into what was left of the Terran Federation as the Space Vikings, carrying pillage and destruction, until the newborn Empire rose to vanquish them."<sup>19</sup>

Where Piper and Toynbee greatly diverge in their conception of history is on the question of psychic forces determining the course of history:

It is clear that if the geneses of civilizations are not the result of biological factors or of geographical environment acting separately, they must be the result of some kind of interaction between them...<sup>20</sup>

The first stage, then, of the human protagonist's ordeal is a transition from Yin to Yang through a dynamic act—performed by God's creature under temptation from the Adversary—which enables God Himself to resume His creative activity. But this

progress has to be paid for; and it is not God but God's servant, the human sower, who pays the price. Finally, after many vicissitudes, the sufferer triumphant serves as pioneer. The human protagonist in the divine drama not only serves God by enabling him to renew His creation but also serves his fellow men by pointing the way for others to follow.<sup>21</sup>

Piper, although he was the son of a minister, was an agnostic.<sup>22</sup> Despite his interest in psychic research and Rhine's work, Piper was definitely antagonistic towards organized religion, whether it be Buddhism or Christianity. And there is no analogy in Piper's work between the fall of the Roman Empire (Hellenic Society) and the surviving Church, which becomes Toynbee's womb from which Western Society will emerge. Throughout the Terrohuman Future History, Piper's only use of religion is satirical, as in *Space Viking* when he describes the religion of the Gilgmeshers: "Their society seemed to be a loose theo-socialism, and their religion an absurd potpourri of most of the major monotheisms of the Federation period, plus doctrinal and ritualistic innovations of their own."<sup>23</sup>

It is within Ortega y Gasset's philosophy of history that we find the best paradigm for studying Piper's Terrohuman Future History. Ortega, unlike Marx and the other economic determinists, believed that the historical epoch was determined not by production but by man's consciousness of the possible. "Not every age has [felt] itself inferior to any past age, nor have all believed themselves superior to any past age. Every historical period displays a different feeling in respect of this strange phenomenon of the vital attitude..."<sup>24</sup>

Ortega, in *The Revolt of the Masses*, sets forth three kinds of historical consciousness by which we can judge different historical epochs: the *decadent*, which describes an epoch of decay and

shrinking vitality; the *plenitude*, an epoch of history in which the people of that period feel they have attained a full, definitive height or it is thought that the end of a journey has been reached; and the *vitality*, an epoch in which man feels himself "possessed of greater potentiality than ever before and in all previous time seeming dwarfed by the contrast,"<sup>25</sup> a time where everything is possible, including the best and the worst. Throughout Piper's Terrohuman Future History, Ortega's three kinds of consciousness appear and disappear in regular cyclic patterns.

It is in the early years of interstellar expansion and exploration of the Terran Federation that we discover an epoch of vitality. In "The Edge of the Knife" Piper compares this time of discovery in the Federation to the Spanish conquest of the Americas.<sup>26</sup> This feeling of expanded and unlimited possibilities extends throughout most of the early Terran Federation stories: "Uller Uprising," "Naudsonce," "Oomphel in the Sky," "When in the Course . . .," and *Four-Day Planet*, as well as in *Little Fuzzy* and its sequel. In these stories there is both the best and the worst of behavior: there is individual heroism and bravery in the face of grave danger in "Uller Uprising," Federation law and justice in *Little Fuzzy*, and in "Naudsonce" the spirit of science and rational inquiry; but there is also the colonial exploitation of sentient beings in "Uller Uprising," the greediness of the Chartered land companies in *Little Fuzzy*, and political corruption in *Four-Day Planet*.

At the twilight of the Terran Federation, after it has been ripped asunder by the System States War and temporarily patched back together, there is an epoch of decadence. The Federation's expansion has stopped and its frontiers are shrinking; it is a time of limited expectation, where war-devastated worlds have begun the long fall to barbarism. When Merlin, the super computer in *The Cosmic Computer*, is asked to forecast the future of the Terran Federation, it answers: "The Terran Federation is

overextended, had been cracking for a century before the War; the strain of that conflict had started an irreversible breakup. Two centuries for the Federation as such; at most, another century of irregular trade and occasional war between planets, Galaxy full of human-populated planets as poor as Poictesme at its worst."<sup>27</sup>

Space Viking takes place three hundred years past the peak of Sword-World civilization, an epoch of plenitude, and is now in an epoch of decadence. "The whole level of Sword-World life was sinking . . . so slowly as to be evident only from the records and monuments of the past."<sup>28</sup> The best and boldest of the Space Vikings have left their homes in the Sword-Worlds for planetary bases inside the Old Federation from where they can raid and loot the Neobarbarian worlds.

By the end of *Space Viking*, Lucas Trask, ruler of one of the Space Viking base worlds, believes that civilization will most likely be rekindled inside the boundaries of the Old Federation. "Sooner or later, civilization in the Old Federation would drive them [Space Vikings] all home to loot the planets that had sent them out."<sup>29</sup>

The next published story in the Terrohuman Future History is "A Slave Is a Slave," which takes place about five hundred years after *Space Viking*. This is a period of vitality, a time of expansion for the First Galactic Empire. "A Slave Is a Slave" concerns a small fleet of Imperial spaceships which has been sent to bring the outer fringes of the Old Federation under Imperial rule. When they discover Aditya, a former Sword-World base that has fallen into a state of what can only be described as feudal-socialism, they give Aditya's leaders the following warning: "There must be one and only one completely sovereign power. The Terran Federation was once such a power. It failed, and vanished; you know what followed. Darkness and anarchy. We are clawing our way up out of that darkness. We will not fail. We will create a peaceful

and united Galaxy."<sup>30</sup>

Another eight hundred years passes before "Ministry of Disturbance," where the Empire now consists of three thousand, three hundred and sixty-five worlds. This epoch finds the First Galactic Empire in an age of plenitude, a fulfillment of the past. Paul XXII says of the Empire: "The supplementary [economics] chart for the past five centuries told the real story—three perfectly level and perfectly parallel lines."<sup>31</sup> In an attempt to disrupt the inertia of his empire, Paul XXII works to create social change: ". . . [W]e agreed upon this long ago, when we were still boys at the University. The Empire stopped growing, and when things stop growing, they start dying, the death of petrification. And when petrification is complete, the cracking and the crumbling starts, and there's no way of stopping it. But if we can get people out onto new planets, the Empire won't die; it'll start growing again."<sup>32</sup>

Despite his plans, Paul XXII was not able to save the Empire, or at least not for long. Piper has his history professor in "The Edge of the Knife" give a preview of its collapse. "But, as he walked home, he was struck by the parallel between the buccaneers of the West Indies and the space-pirates in the days of the dissolution of the First Galactic Empire. . . ."<sup>33</sup>

The last story in Piper's Terrohuman Future History is "The Keeper."\* "The Keeper" takes place thousands of years after "Ministry of Disturbance" and gives a good overview of Piper's cyclic and pessimistic view of civilization. "The glaciation hadn't started in the time of the Third Empire. There is no record of this planet [Terra] during the Fourth, but by the beginning of the Fifth Empire, less than a thousand years ago, things here were very much as they are now."<sup>34</sup>

Piper used numerous historical events as plot models and premises for many of the stories in his Terrohuman Future History. The "Uller Uprising,"

the first published story in his future history, was based on the Sepoy Mutiny in British-held India. This is corroborated by Piper in "The Edge of the Knife" by his historian protagonist: "He thought for a time of the Sepoy Mutiny, and then rejected it—he could "remember" something much like that on one of the planets of the Beta Hydrae system, in the Fourth Century of the Atomic Era."<sup>35</sup> Uller is the second planet of the star Beta Hydri and is described in some detail by Dr. John D. Clark in the introduction to *The Petrified Planet*; this Twayne Science Fiction Triplet is a collection of short novels by different authors, written around the premises set down by an eminent scientist. "Uller Uprising" was first published in *The Petrified Planet* and Piper incorporated much of Dr. Clark's introduction into the story.

Later, in "The Edge of the Knife," Piper's historian comments, "There were so few things, in the history of the past, which did not have their counterparts in the future."<sup>36</sup> This idea, of course, is not new with Piper; Vilfredo Pareto once stated that every political science possibility imaginable had, at one time or another, flourished in the Italian city-states during the Renaissance. Most of the novels in the Terrohuman Future History—including the Fuzzy novels, where the Zarathustra Company's treatment of the Fuzzies has a number of parallels to the treatment of the East Indians by the British East India Company—are modeled on real historical events and situations.

*The Cosmic Computer* contains a milieu analogous to that of the Pacific Islands after the War of the Pacific. Poictesme, the former military command post of the Third Terran Force during the System States War, is now a backwater world filled with the flotsam and jetsam of the past war. Many of Poictesme's inhabitants make their living by salvaging forgotten Third Force storage depots and forts—a way of life that still exists on a few coral islands in the Pacific. Their unshakable faith in

Merlin, the legendary super-computer that won the war, is reminiscent of that of the Polynesian followers of the cargo cults.

In *Space Viking*, where there is almost as much history as story, Piper uses a number of historical models, besides the obvious Viking reference. On Marduk, a planet with many of the worst legislative and governmental features of both Britain and the United States, a pocket-Hitler named Zasparr Makann rises to power with the same ease of success and ultimate fate as his predecessor. And when Lucas Trask raids the pre-atomic planet of Amaterasu, he discovers that it is dominated by two super powers sardonically reminiscent of Cold War Russia and the United States.

Throughout the Terrohuman Future History, Piper carefully interwove the thread of history and invention, creating the patterns of a unique but unfortunately incomplete cloth. Other future histories might span more centuries or greater illuminate the highlights of several decades, but until a rival is created with more historical depth and attention to detail, H. Beam Piper's Terrohuman Future History will stand as the Bayeux Tapestry of science-fiction future histories. ∞

#### NOTES

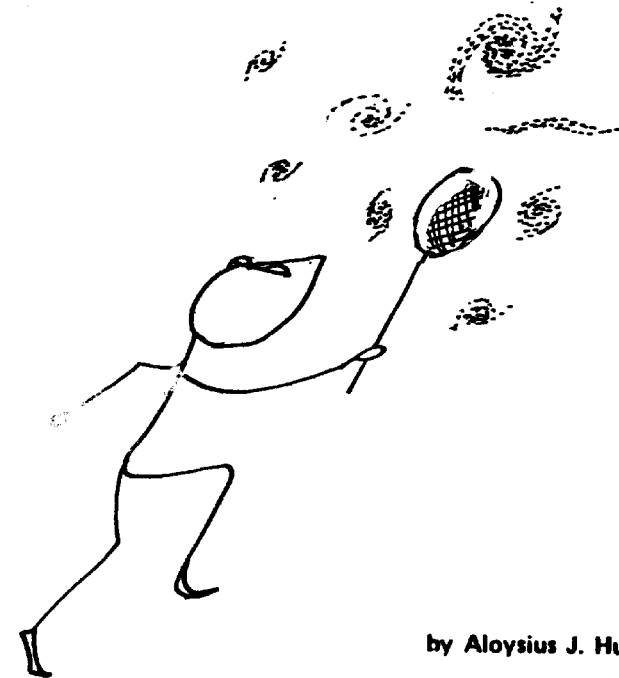
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2. *Altoona Tribune*, February 26, 1953.
3. Costello, "H. Beam Piper: An Infinity of Worlds, Part III," *Renaissance* (Vol. 5, No. 2), p. 1.
4. John W. Campbell, Jr., editorial, *Analog*, May 1961.
5. H. Beam Piper, *Murder in the Gunroom* (New York: Alfred A. Knopf, 1953), pp. 142-43.

6. Piper, *Space Viking* (New York: Ace Books, 1953), p. 183.
7. Piper, "A Slave Is a Slave," *Analog*, April 1962, p. 82.
8. *Space Viking*, p. 14.
9. *Ibid.*, p. 152.
10. José Ortega y Gasset, *The Revolt of the Masses* (25th anniversary ed.; New York: W. W. Norton & Co., Inc., 1957).
11. *Space Viking*, p. 151.
12. *Ibid.*, p. 151-52.
13. Piper, "Oomphel in the Sky," *Analog*, November 1960, p. 130.
14. *Space Viking*, p. 185.
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16. Hans Meyerhoff, *The Philosophy of History in Our Time* (New York: Anchor Books, 1959).
17. Piper, "The Edge of the Knife," *Amazing*, May 1957, p. 45.
18. Arnold J. Toynbee, *A Study of History* (abr. of volumes I-VI by D. C. Somervell; New York & London: Oxford University Press, 1956), p. 12.
19. "A Slave Is a Slave," p. 66.
20. Toynbee, *op. cit.*, p. 60.
21. *Ibid.*, p. 67.
22. Costello, "Piper... Part I," p. 2.
23. *Space Viking*, p. 91.
24. Ortega y Gasset, *op. cit.*, p. 29.
25. *Ibid.*, p. 43.
26. "The Edge of the Knife," p. 21.
27. Piper, *The Cosmic Computer* (New York: Ace Books, 1977), p. 241.
28. *Space Viking*, p. 11.
29. *Ibid.*, p. 191.
30. "A Slave Is a Slave," p. 81.

31. Piper, "Ministry of Disturbance," *Astounding*, December 1958, pp. 14-15.
32. *Ibid.*, p. 44.
33. "The Edge of the Knife," p. 21.
34. Piper, "The Keeper," *Venture*, July 1957, pp. 85-86.
35. "The Edge of the Knife," p. 21.
36. *Ibid.* ∞

\*There are two major reasons why I included "The Keeper" in the Terrohuman Future History: first, the dating system, the Interstellar Era, is the same as the one used in "Ministry of Disturbance"; and, second, mention is made of the Terran Federation—certainly the keystone of the Terrohuman Future History. On page 86 of "The Keeper" (note 34), one of the characters says, "Britain was a great nation, once; the last nation to join the Terran Federation, in the Third Century Pre-Interstellar."

## THE HUMBLE ATLAS OF GALAXIES



by Aloysius J. Humble