

Space Travel

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TO MARS**

"I call it a bad day if I don't make \$25 before noon"

(This chair alone brought \$4.50 with twenty-five minutes work and 32¢ in cleaning materials.)

"Just a few months ago I made the big move. I gave up my job and started spending all my time in the little business I had been running on the side. It was 'n easy decision, but, now I'm tickled to death I made it. Not just because I'm my own boss or because I have an excellent chance of making over \$10,000 this year. It goes deeper than that.

"You see, this idea has caught on like wildfire in my town. Not a day goes by without my phone ringing with women calling for appointments. The beauty of it is that once a woman becomes my customer, she calls back year after year. Not only that, she tells her friends, too, and they call me. Before I know it I'm swamped with work. (And at \$7.50 an hour net profit it doesn't take long before my bank account is really mushrooming.)

"Funny thing, but back last year, before I started, I never realized the money there was in this business waiting for someone to come along and collect it. Just think: every house in town has furniture and most have rugs or carpeting. I concentrate on just the better homes and have more work than I can handle. You know why? Because women are fussy about their furnishings. Can't stand to see them dirty. That's why they call me over every year.

"The average job is worth \$25.00 to me and takes a little over 2 hours. Out of this, after paying for materials, advertising and other expenses I net about \$15.00 clear profit. This means I need just 3 jobs a day to clear \$11,250.00 in a year. Frankly, since this will be my first full-time year I'll be glad to hit the \$10,000 mark. But after that this business should grow larger each year until I have to hire men to help me handle the business.

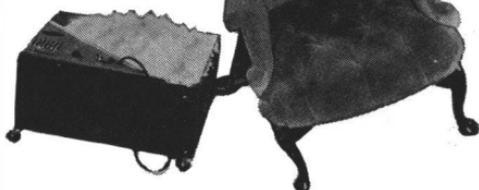
Personally Trained by Another Dealer

"Believe me there's nothing magic about it. I didn't know a thing about cleaning and mothproofing before I became a Duraclean dealer. But after my application was accepted I was trained right here in town by a successful dealer from another city. I was astonished by the short time it took me to become an expert. Actually, much of the credit must go to the Duraclean process, which is so safe it has earned the Parents' Magazine Seal.

"The portable machine you see is just one of the electrical machines I use. It manufactures a light aerated foam with a peculiar action chemists call 'peptizing'. It means that instead of being scrubbed deep into the fabric, dirt is gently ABSORBED by the foam, leaving the fabric clean all the way down. Women can't believe their eyes when they see how it works. Colors appear bright again, and rug pile unmat and rises like new. I don't have to soak rugs or upholstery to get them clean, which ends the problem of shrinkage, and means the furnishings can be used again the very same day. This alone has brought me a lot of customers.

"As a Duraclean dealer I make money with four other services, too: **Duraproof** . . . which makes furnishings immune to moth and carpet beetle damage (it's backed by a six year warranty). **Durashield**, a brand new dirt-delaying treatment. It coats fabrics with an invisible film that keeps dirt out. **Duraguard**, another new service, flameproofs draperies, upholstery and carpets to reduce charring

by
**Harold
Holmes**



and the tendency of fires to flame up. And **Spotcraft**, which consists of special chemical products for removing stubborn spots and stains. On jobs where I perform all five services, I multiply profits!

"One of the nicest things about being a Duraclean dealer is that I get continuous help from Duraclean Headquarters. My services are nationally-advertised in famous magazines like *McCall's*, *House Beautiful* and many others. I also get a complete advertising kit prepared by experts. (There's even a musical commercial!) I get a monthly magazine full of methods to build business and I can meet with other dealers at Duraclean conventions. I'm also backed by insurance. In fact there are over 25 regular services I get under their unique System.

No Shop Needed

"Maybe you too would like to break away from your job and make a fresh start in a business of your own. Do you need a shop? Certainly not. I operate from home. Need a lot of money to start? Not at all. Duraclean finances reliable men, after a moderate down payment, and furnishes enough supplies to return your TOTAL investment.

"You get everything you need: equipment, supplies, advertising matter, personal training, and regular help from Headquarters. To get all the details, fill out the coupon. There's no obligation and you can decide for yourself! I'll say one thing: if you DO become a Duraclean dealer, you'll be glad the rest of your life that you took time today to write."

Irl H. Marshall, Jr., International Headquarters
Desk 8-Y38, 839 Waukegan Avenue, Deerfield, Ill.

IRL H. MARSHALL, JR., International Headquarters
Desk 8-Y38, 839 Waukegan Avenue, Deerfield, Ill.

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Space Travel

★ DENOTES SPECIAL
FEATURE ARTICLE

SEPTEMBER 1958

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Front cover painting by Paul E. Wenzel, depicting a Space Pilot

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The Editorial

A growing question today is what sort of men will man the ships that travel from Earth to the planets. Actually, the question is misleading. It isn't really what sort of men from the standpoint of education and general intelligence level, although a high IQ will undoubtedly be a prerequisite. The real candidates will undoubtedly be chosen on the basis of adaptability to alien environment.

By alien environment we don't necessarily mean the conditions to be found on the surface of the planet Mars, or Luna, for that matter. An alien environment will be primarily the conditions a space pilot will face within the confines of his own ship!

Consider the effect on the body of high accelerations, a necessary hazard to achieve escape velocities. Consider the factor of weightlessness once a space ship is beyond gravitational pull of a solar object. It is not easy to imagine oneself literally "floating" in mid-air at the slightest outward exertion of pressure or movement. It is equally difficult to imagine so commonplace a routine as eating and drinking. Particularly drinking. A glass of water simply will not spill in a ship in deep space. How does one drink then? Through suction, of course, by means of a straw or tube. Even more important,

consider the problem of utter loneliness. To be millions of miles from "home", completely and irrevocably alone in the true sense of the word. What psychological effect will this have on space pilots? Is a matter of a high IQ important in selecting such men? Or is it a careful study which will determine which men can most easily and successfully adapt themselves to the conditions and problems to be faced? Most certainly it will be the latter.

This month we present a discussion of space flight with emphasis on the Space Pilot aspects. We feel sure you will find it quite interesting. And for your further interest we explore the possibility of the first trip to Mars. Why Mars? It's really the logical choice once the Moon has been reached. Mars in all likelihood still retains some atmosphere; perhaps not enough to sustain life as we know it, but every little bit helps! And what other planet is as foremost in our historical background? Venus? A contender, true, but not with the dramatic attraction Mars possesses. What are the so-called Canals on Mars? This question alone has kept man's attention riveted to the Red Planet. In a few years we'll have the answer.

There is much to ponder on with space travel near at hand. It's sooner than you think! wh

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SPECIAL SCIENCE FEATURE

Few celestial bodies have captured man's imagination more than the Red Planet. And it's a certainty that our satellite program will be setting the stage for what is bound to follow —

The First Trip To Mars

by

Henry Both

Research Engineer

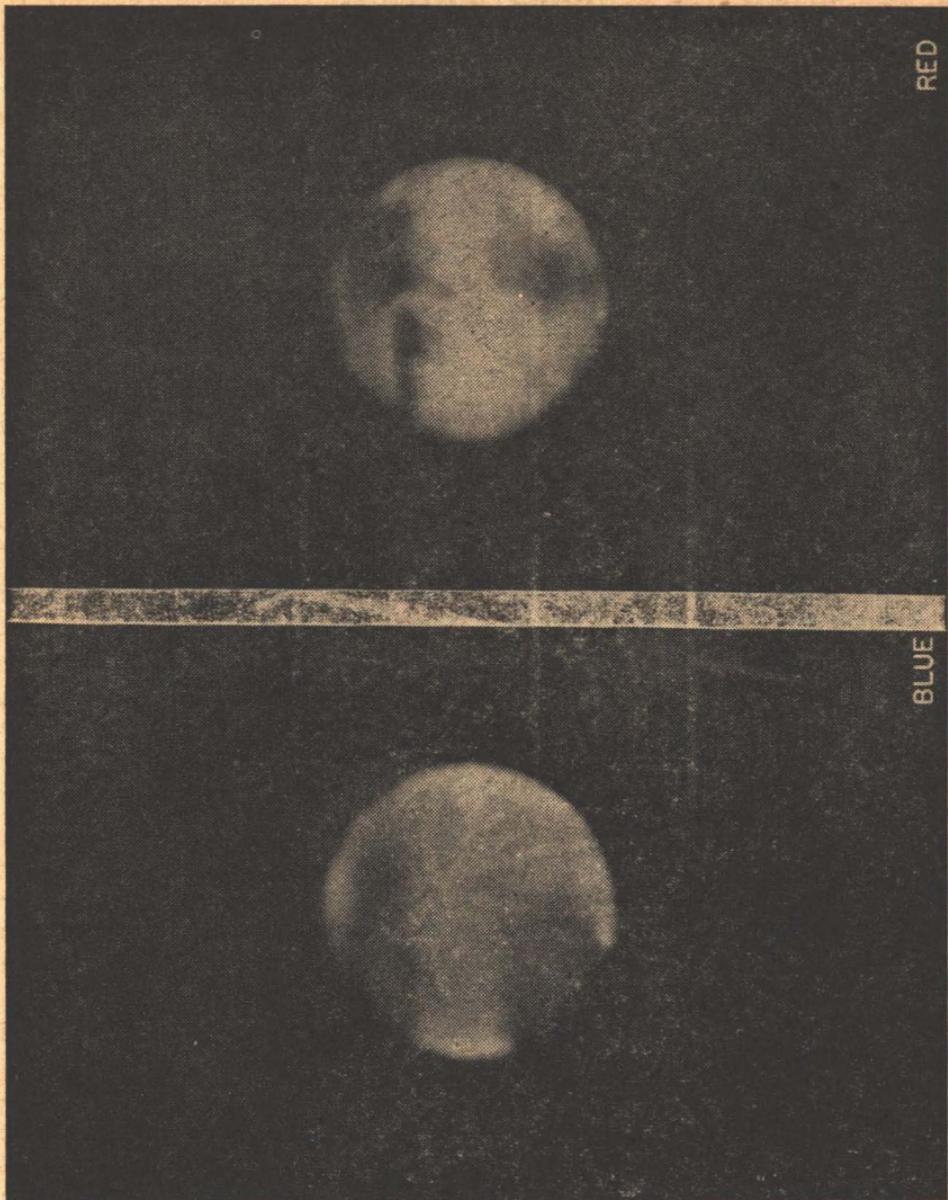
CIRCLING THE SUN at a mean distance of approximately one hundred and forty million miles is a small reddish planet little more than half the diameter of the Earth. Yet no other object in the Solar System besides the Sun and the Moon has been more the subject of speculation. No other planetary body has captivated the minds of Terrans as has Mars. This bleak, miniscule astronomical body probably has had more words written about it than any other. And there's a good reason for it—very shortly we're going there!

Before we elaborate on this less than profound remark, let's consider a bit more the nature of this celestial body. "Circling the Sun" of course is a figurative expression. Actually Mars, like all other ob-

jects in the Solar System courses around the Sun in the trajectory of an ellipse, with the Sun at one of its foci. The eccentricity of the Martian orbit is so slight however that we can speak of it as if it were a hundred and forty million mile circle. Like most of the other planets it is inclined but slightly to the plane of the ecliptic and hence we can think of the job of reaching it as a two-dimensional problem in gravitational potential.

Its year is about one and nine-tenths of ours, its escape velocity is about three miles per second (compared with our seven), and its surface gravity is a little less than four-tenths of a "g".

It has two moons, Phobos, ten miles in diameter and about six thousand miles away, and Deimos,



Striking photographs of planet Mars in red and blue light as seen through giant 200 inch reflector telescope of Mt. Wilson & Palomar Observatories.

five miles in diameter and about fifteen thousand miles away. These satellites would make admirable "space-stations," a point to which we shall return later. Mars also rotates on its axis once every twenty-four and one-half hours. It is a brilliant object in our sky; it has been studied probably in more detail through the telescope than any celestial object except the Moon. The markings which apparently have been seen are one of the reasons for our intense interest in the planet. Schiaparelli's "Canali" (channels) will remain to haunt us for only a short time longer.

Enough for the statistical bones. Mars is no longer an "unerreichbares Himmelskurper" (unattainable celestial body) as it was a few short months ago. The dream of astronomers since Flammarion is within reach.

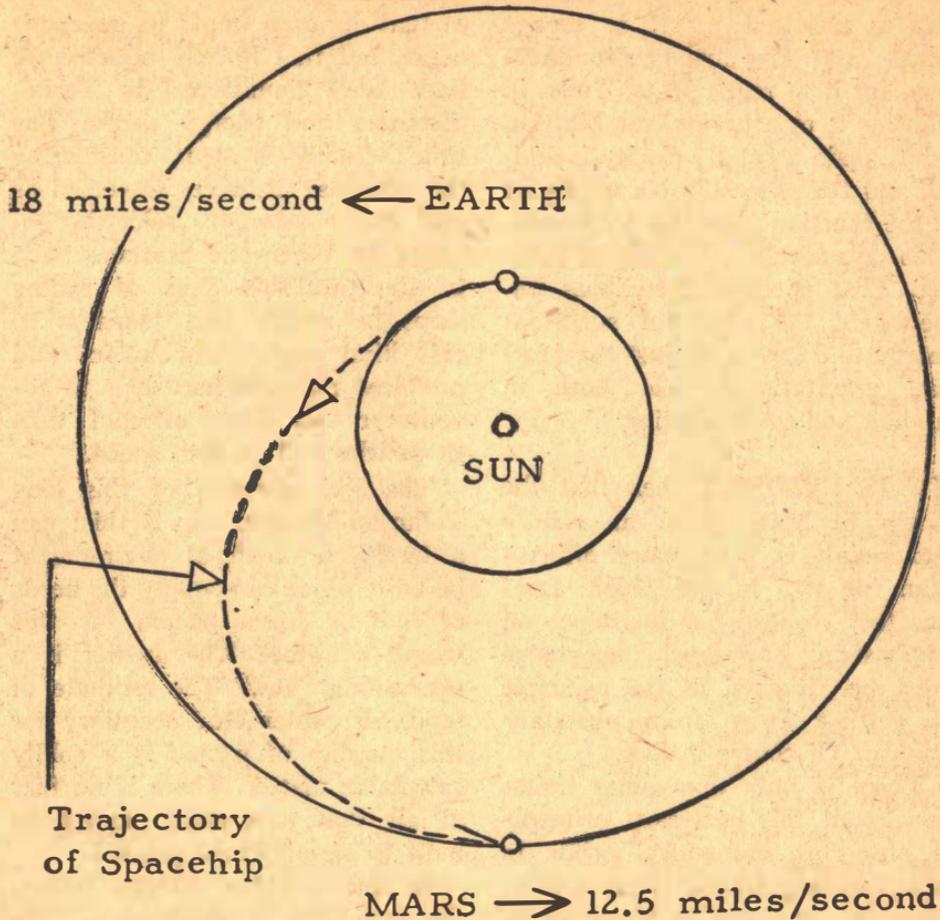
Now we must belabor a point. At the risk of being accused of beating a dead dog, we must state this fact succinctly and repeatedly; when it is possible to put men and vehicles into orbit around the Earth, *then* interplanetary travel has effectively been attained. The hardest part of an interplanetary trip is the problem of leaving the monstrous gravitational field of the Earth. The actual trajectory through space to the planet, or for example to the Moon, is relative child's play.

The first steps have been taken. There are man-made vehicles orbiting about the Earth. The step to putting "manned" satellites into orbit is merely a matter of time. Once these manned space-stations exist, interplanetary travel is effectively an accomplished fact.

The keynote is naturally that the power required to leave the Earth's gravitational field is enormous in comparison with the power required to traverse the enormous distances associated with planets. For power substitute the word "velocity", because as in all interplanetary travel done with chemical rockets, (and this is the kind of power we expect to use first to explore space) the thrust is delivered in the form of a single pulse. The rest of the trip is made by "coasting" precisely as is done in the ballistics of an artillery shell.

Figure I shows a reasonably accurate schematic analysis of a Martian-Tellus trip, with the requisite velocities noted. Clearly it must be repeated, again at the risk of boredom, that we are concerned with the type of journey most economical of energy. Without this qualification naturally it is possible to make the journey in much less time and at greater velocities—one might even have the luxury of gravity provided by continual acceleration!

What we are saying is this: if a space ship is in orbit around the



Space-ship must "climb" through Sun's gravitational field to orbit of Mars. As in the case of Earth satellites, the farther one orbits from the Sun, the lower the tangential velocity required; this point must not be confused with the requirement of acquiring velocity in order to climb in a gravitational field. The trajectory of the space-ship, during the maneuver, is naturally an ellipse with the Sun as one foci. The most economical trajectory is shown here; the ellipse is tangent to orbits of Earth and Mars. The ratio of the distances of planets—Earth and Mars—from Sun is roughly three to two.

Earth, it already has the velocity of the Earth around the Sun. To reach Mars, it is only necessary to

give it an additional velocity of about a mile and a half per second, plus whatever small additional velo-

city is required for it to escape Earth, and the appropriate direction, for it to reach Mars. Then, to transfer it to a permanent Martian orbit, again a small velocity is added, and the spaceship becomes part of the Martian planetary trajectory. This says nothing naturally of landing. That problem introduces immediately the need for sufficient energy to do work against the Martian gravitational field both in landing and in re-orbiting.

IT IS EVIDENT then that the trip to Mars, from an energy standpoint, is little more difficult than the trip to the Moon. Does this fact confirm our insistence on emphasizing how much importance must be attached to the principle of getting away from planetary gravity? Of course it does.

There is only one minor irritation about this necessary principle of observing economical orbits in interplanetary travel. What is gained in the conservation of energy by choosing the minimum velocity requirements, is extended in the matter of time. A trip to Mars made under these conditions would require roughly two-hundred and fifty days *one way*. A similar time would be required for the return journey. This does not include any time spent orbiting the planet or landing thereon.

Off-hand it might seem that trips

of that duration would be impracticable, but that is only because we have been conditioned to Terran distances and energy needs. The time actually is short considering the immense distances traversed as well as the enormous velocities engaged in. When one hearkens back to the primitive days of sailing ships he recalls that journeys of this kind were commonplace and proffered no great hardships to adventurers no more intrepid than those who will go into space.

The real question of this long Tellurian-Martian trip is this: can a terella or artificial environment be built which can supply the needs of half a dozen people for this length of time? The answer is a resounding "yes." The estimate of food, air, water etc., necessary for this number of people is a coldly calculable matter. There is no fear at all that spaceships cannot be built to supply these persons.

In the not too distant future, this trip will be undertaken. Perhaps the most encouraging vision that we can see is that as space travel progresses, it becomes easier. The hardest thing is to escape the Earth—all else follows.

Imagine that the basic journey is well begun. When men have left the close familiarity of the Earth-Moon planetary system and have taken their first steps a few million miles along the economical ellipse

to Mars, they will truly be the first interplanetary travellers. Is it possible for us to conceive of what their impressions must be when they fully realize how magnificent their journey is? We can predict exactly what they'll see, eat, drink and do to amuse themselves, for the Tellus-Mars trip requires planning which already is beginning. Nevertheless there is some spark of feeling that we'll never know, unless some who are reading this now, eventually are aboard that vehicle—and this too is possible!

They will see the planets in the ecliptic plane. Not many deviate appreciably from it except Pluto and it is so unthinkably remote that we will not visit it for a long time. The Sun will become appreciably smaller as the ship moves along its invisible ellipse. And of course Mars will grow.

Two hundred and fifty days to Mars! What kind of distance does this time represent? Distances from the viewpoint of a spaceman traveling orbits of minimum energy do not mean quite the same thing they mean to us. For example, Mars and Earth come as close together at times as about thirty-five million miles. Would this be the distance traversed by a spaceship? A glance at Figure I which shows a representative orbit, clearly indicates it is not. Such an astronomical course would require a fantastic amount of

energy, something spacemen of the near future cannot spare. The trip to Mars must be made along an ellipse of least energy and this calls for the "round-about" way indicated; it represents a long gentle path through the gravitational potential of the Sun. But naturally when these elongated elliptical paths must be pursued, time must be sacrificed; fortunately men have more time than rocket energy. This distance of several hundred million miles—the figure is dependent upon how much velocity can be spared—is enormous by our present standards but for interplanetary travellers time, not distance, is the criterion of remoteness.

It is perhaps a bit premature to consider the activities aboard the hypothetical spaceship in detail. Unquestionably the unbelievable opportunity for astronomical observation will be the major scientific activity. Besides this it is possible to imagine that the rest of the trip may be boring—but that's hard to believe.

Because this—and other—jaunts across the Solar System will require so much time as long as men are chained to chemical fuels and their inherent limitations, it has been suggested that if the problem of boredom does arise, it can be taken care of by putting the crew members under a sort of reduced metabolism, a kind of "suspended ani-

mation." We say "if the problem does arise" because it is unthinkable that it can—imagine sleeping one's way to Mars!

IT HAS BEEN mathematically demonstrated that radio communication with the space-station orbiting Earth, can be maintained even over the vastnesses of hundreds of million of miles. This can be done with radio transmitters of rather modest power, provided tight-beam transmission is sustained. This refers to the fact that both transmitters on the space station and on the spaceship, must use large-size parabolic reflectors fed with high-frequency, short-wave radio, probably of a micro-wave type, in the centimeter band. Probably radio-telephone will not be used. Aside from the fact that it requires a much larger bandwidth, signal detection of the sharp pulses of code is much more certain—and when your only link with home two-hundred million miles away is a web of electromagnetic radiation, you want to be sure of picking it up, even if it consists of dots and dashes. An interesting sidelight to this problem of radio communication is suggested by the finite velocity of electromagnetic waves, one hundred and eighty-six thousand miles per second. *Minutes* must elapse between messages. Perhaps no other fact gives a better

picture of the immensity of the void.

Also, parenthetically but importantly, the matter of antennae for these transmissions is worth considering. Fragile networks of wire can be formed theoretically into very large antennae, especially in a gravity-less region. The larger these antennas can be the tighter the transmissions can be made, although some wit has suggested that trying to communicate over such distances with tight beams is similar to stabbing a fly with a lance in a dark room!

Another source of assured communication is that of ordinary light beams. Very brilliant flashes are easy to create with gas-filled lamps, they require little energy, and are easily detectible.

We can thus be assured that whatever happens, the men on the Martian jaunt will not be isolated from their fellows. In that respect their lot is easier than that of earlier Terrestrial explorers.

When the long journey is over and the red planet is near (a matter of a million or a few hundred thousand miles) the velocity and direction of the ship can be matched with transfer velocity to the orbit of Mars, so that we can think of the spaceship now as being a part of the Martian system. Once near Mars, many opportunities are offered. First, obviously, is the possi-

bility of landing on either or both of the Martian satellites, Phobos and Deimos. Because these are "natural" space stations, with very small masses astronomically speaking, landing on them and departing requires no great "escape" velocity. And because they are "in orbit" around Mars, the space ship need not fight the Martian gravitational field. It is possible that *these* landings might be the extent of the initial Martian journey.

We have no conception whatever of the character of Phobos and Deimos. We know they cannot possess atmosphere, (their masses are too small) but other than that we can hypothesize only that they are chunks of rock. Present telescopes cannot resolve their characteristics.

Landing on the planet Mars presents a problem not altogether different from that of landing on Earth. The Martian field is about four-tenths "g", as has been mentioned. This means that the Martian escape velocity is also four-tenths that of Earth—four-tenths of seven miles per second—a little more than three miles per second. In a phrase, a lot of work must be done to climb away from Mars once the landing has been made.

On the basis of a chemical fuel technology as we have been presupposing, it is asking a lot to believe that it will be possible to land. But we can assume that, as in the

case of the Moon, the probability is high that substances can be found which can be converted to rocket fuel. Less daring conjectures have come true before.

We concede the landing.

As in landing, just as was done in putting a rocket on the Moon, the idea of balancing the landing ship on its rockets will be used. It might be mentioned that the major ships of the Martian trip may remain on the moons—Phobos or Deimos—while an exploring party takes a smaller rocket actually to the Martian surface. The very thin Martian atmosphere hardly makes it worth while to consider using aerodynamic braking or aerodynamic surfaces at all in landing. Probably the best procedure will be the tried technique developed in landing on the Moon. Also the half-gravity will help.

While we suspect that telescopic observation will have long since established the truth or falsity of the "canal" conjecture of Schiaparelli, we can assume that the most captivating thing about the Martian trip will be the determination of the character of the surface. Will men see evidence of other intelligent handiwork or "tentacle-work" as the case may be? With the better "seeing" afforded by telescopes mounted on the Earth's Moon and on the space station, the question of whether or not the

canals are an illusion will have been settled; it is conceded that the probability that they exist is hardly a tenable thesis. But that does not preclude the possibility of men finding other artificial structures. The nature of the polar "ice-caps" will be explained as will the nature of the seasonal color changes that so vividly suggest vegetation.

There are a million questions that the Martian explorers will answer. Percival Lowell, the great American astronomer who dedicated his life to the study of Mars and who, until his dying day, believed in the existence of the mythical canals, would have given anything to be in the spacesuits of the first explorers to walk the surface of the red planet.

ARTISTS HAVE MADE vivid, suggestive, colored drawings of what Mars may be like. These are little more than conjecture of course. No telescope with the seeing afforded by Earth has resolved anything about the Martian surface, and spectroscopic examination has offered little more. The rarified gases covering Mars so lightly will not afford air for the explorers.

As grandiose as is the conception of landing on the Earth's Moon, an event which we may expect to see in the foreseeable future, it shrinks into insignificance in comparison with the magnificent conception in

men touching the first real planet besides that of their mother, Earth. We can see the ship touch down, floating nose up on the fiery jet of its rocket exhaust, slowly sinking the last few feet to Martian soil. We can imagine the airlock opening and space-suited figures descending in awed triumph to the alien environment they've spent so much time and effort to reach. What a day in Terran and interplanetary history that will be!

But however magnificent the act, a hundred humble things must be done. Undoubtedly the spaceship will serve as a domicile for the early expedition, but the following trips will insist on establishing bases just as they will have been established by this time on the Moon. Unless there is something inconceivably hostile about Mars, we can expect men to construct habitations there. After all they have already built structures in the most inhospitable spot in the universe—space!—and on Luna, hardly noted for its warm baths.

It is impossible to make any economic justification now for this trip. Nor need this be done. Science as personified in pure research of this kind, can lead only to discoveries the importance of which we cannot even imagine.

Sampling and specimen collection will be the first objective of the expedition. First and most impor-

tant as always, is the hope that some substance can be found which can be processed into a useful fuel. If, as we can very well presume, atomic technology is here involved, this is more than a possibility—it is a certainty.

Just what technology will have been developed for mining on the Moon, it is naturally hazardous to guess. But whatever methods are used, they will not differ greatly in their application to Mars. We can expect spacesuits with sufficiently flexible joints to permit the use of a shovel, although by that time undoubtedly a combination of small explosive charges and mechanical devices will be used. Short range travel over the surface of Mars will depend upon the "Marrain", but some sort of tractor or crawler should be satisfactory. Mars is probably not as different as we think.

In essence we can expect that the problems which face the Martian explorers will not be as greatly different from those which faced the pioneers on the Moon. And they will be solved in a similar way. From what little we can tell now, the chances are good that there will be more to work with on Mars than is known to be on the airless wastes of our Moon.

It is quite possible that the first Martian expedition will install a permanent colony. There are hardy

souls to whom the thought of abandoning Earth for a long, long time would not necessarily be repugnant or sacrificial. It is almost certain too that technology by that time will be able to extract from Martian soil whatever can or need not be carried—perhaps some species of Martian lichen is edible! The hydroponic garden can be an important chain in the food producing link as well as serving its function of supplying air.

Martian atmosphere is too thin to serve as an aerodynamic medium for winged craft as we know them so the greatest amount of travel will be done by tractor or on foot unless something more is learned about gravity—that likelihood, sufficient to release men from the bounds, is improbable.

Small atomic energy plants can produce the necessary power. Nothing then, in the picture of establishing a permanent colony on Mars is discouraging. As always the telling is easier than the doing—but the doing gets done!

The often-discussed question of the possibility of life existing on Mars must be approached with caution. If our criterion of life is defined by what we know of Terran life-forms, naturally we must admit that Mars is not likely to exhibit this "life". The speculative belief that some totally different life-form—the classic is the silicon

structure—may exist cannot be discounted completely. There is no evidence for this belief except a sort of wishful thinking, weakly supported sometimes, by a but-tress of probability arguments. The Martian explorers will be the ones who settle this captivating question.

MARS IS NOTED for extreme temperature changes, but this is no real problem to a superbly equipped expedition capable of reaching that far out into space.

Mars may also be regarded as a "way station" to the Outer Planets, Jupiter, Uranus, Saturn and Pluto, much as the Moon and the Earth's space station was regarded as a way station to Mars. That the long voyage to the Jovian and Saturnian moons will be made eventually is as certain as the Martian trip. So Mars serves another purpose.

In an unthinkable long time in the future, when men have mastered technology in the broadest sense of the word, it is conceivable that they may alter the face of a planet. To imagine supplying Mars with an atmosphere of sorts, to imagine making it bloom as it might have in the past, is a tall order, indeed. But as incredible as it seems, that possibility cannot be discounted. When men can go from the Neolithic age to the planets in a few tens of thousands of years, their

capabilities are absolutely limitless.

To re-trace the journey from Mars back to Earth is not difficult. Once again the spaceship orbiting about Mars and possessing the planet's velocity around the Sun, need only give itself sufficient velocity to escape Mars, and fall toward the Sun, back in toward the Terran orbit, just as it climbed out of the Earth's. Again velocities would be matched after the two hundred and fifty day journey. And the pioneers would be back at the space station with awesome tales to tell.

In a qualitative account like this, and in the similar accounts other speculators on interplanetary travel have unveiled, the journey has been made to seem easy. This is not to discount the actual difficulties. Rather it is to point out that when the means are available, the trip will have been that easy simply because of the fantastically detailed planning that will have been done. A Martian trip, just as one to a space station or to the Moon, permits room for not a single error. There is no leeway granted at all. To travel through space under these circumstances, requires that the pioneers anticipate every imaginable contingency and every possible emergency, plan for them, and solve them.

The Martian trip will be the first leg of man's journey deep into the

Solar System—as distinguished from the relatively modest Lunar jumps—but it will not be the last. The Martian journey also will set the stage for subsequent trips because they will differ in almost no detail from it. The problems and conditions are the same. What is different of course is what is at

the end of the jump.

The cocoon which has enshrouded man, this green little magnificent Earth, is too small for his soaring imagination. Only the long road of nothingness to Mars will answer his urge to span the Solar System.

THE END



SPECIAL SCIENCE FEATURE

Lunar and interplanetary travel present awesome technical difficulties. But no machine will venture to other worlds without a skilled human guiding it. Our new space age will need —

SPACE PILOTS

by

Guenther Schmidt, Ph. D.

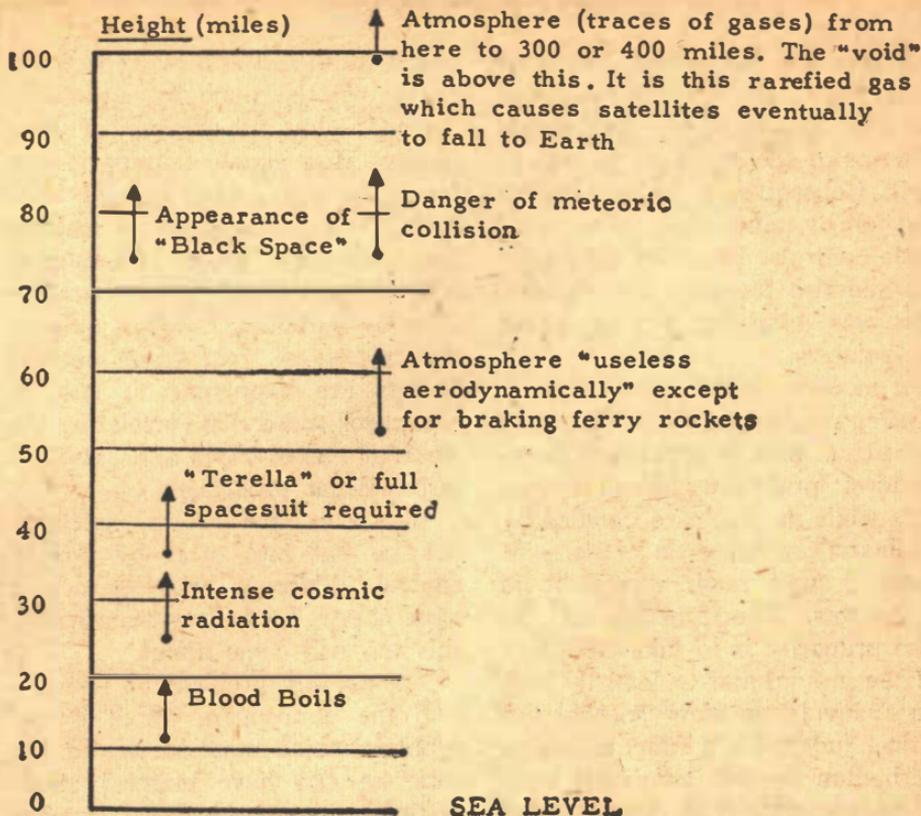
THE "SPACE PILOTS" who will take the first manned satellites into orbit, or who will briefly orbit a "semi-satellite," that is, a high speed rocket plane for a few turns around the planet, will constitute a special breed of cat. We can see the evolution of this type before us now with the advent of the ultra-high speed rocket bomber and fighter. Unfortunately, the Air Force is too generous with the expression "space pilot" and it flings around the term without much discrimination but with lots of enthusiasm. This is understandable but it does not enable us to discriminate between the pilots of high speed aircraft and a considerably different type, the pilot of a machine which will go into orbit—however briefly.

What about the pilots of today's

high-speed aircraft, the transsonic jets and the rocket planes? Are the pilots of these machines, men like Everest, Walker, Murray, Crossfield, Bridgeman, Yeager and Ridley, really the fore-runners of the spaceman? Are they spacemen? The answer to first question is yes—they are the pioneers. But until they are orbited, until their environment excludes gravity for a long time—days, not seconds—it is hard to use the term "spacemen."

Nevertheless, their activities deserve close scrutiny, because their training is akin to that which spacemen will receive and because sooner or later, their kind will make the "grand leap."

In the early days of aviation, pilots spoke of "flying by the seat of the pants"; this is still true today of the flyers of small, slow-



Graphic suggestion of the character of the immediate environment space pilots must face. As accompanying text points out, this region is more hazardous than that of space, the domain of satellites and space-ships. Here, because men and ships are not orbiting, they face split second timing and decisions.

speed planes. A kineasthetic sense of motion helped them feel the reaction of the plane to the controls and to external forces such as the wind. As the speeds of military aircraft went up, even through the Second World War, this intuitive "feel" for flying was a valuable asset to a military pilot. To the

German jet pilots of the Second World War and to our own pilots of the Korean war, this skill was still useful but less so. The reason for the decline is this; as the speeds of planes became super-sonic all controls had to be boosted by servo-mechanisms so that the pilot no longer had that keen sense of "feel"

and also as the speed increased enormously, the reaction time of the pilot became slower and slower in terms of the incidents he was to meet. Consequently he had to be assisted by more and more automatic controls. He could no longer aim and fire the guns and rockets. This was done for him by radar gun-pointers.

In modern rocket planes this increasing mechanization has changed the plane into a gun and bomb platform; practically all of its functions while in flight are handled by automatic controls even to the point where ground radar directs it to its targets. The function of the pilot primarily is to take the plane off the ground and to land it, both times involving slow speeds and critical judgment, a function which the human brain is admirably suited to perform. The human pilot in a high-speed rocket plane is essentially a slow speed computer, vital and necessary.

Now the question arises, if the human computer is needed for slow-speed corrections, if high speed corrections must be made automatically, what is the role of the space pilot? Where does the human being fit into the fantastic complexity of the satellite launching, of the orbiting manned space station?

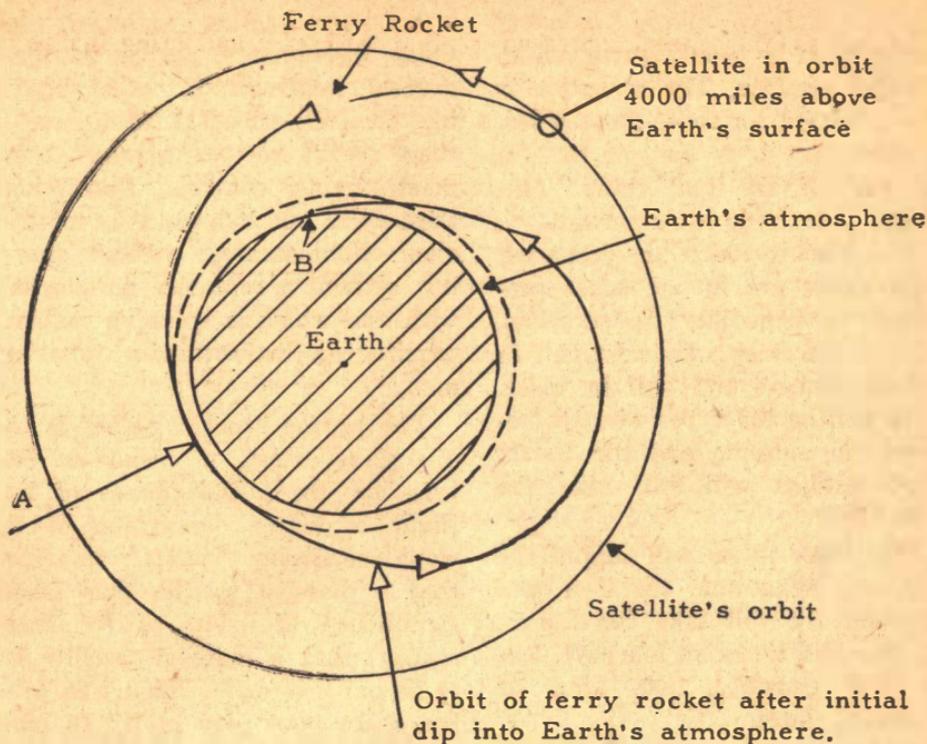
The answer again is much like that of the present-day flyer of rocket planes. To take a rocket up,

put it into orbit and bring it down again, will be done by automatic methods—but at expense of simplicity. How much simpler it can be if there is a man aboard such a rocket; a man capable of making the necessary small adjustments and compensations which can be done by automatic controls only at the expense of weight and energy. Events are happening at such a breakneck speed that correlating the work of rocket pilots and satellites is somewhat disengaged.

As facts have shown, satellites can be put into orbit by remote control. While no orbiting rockets have been landed automatically, this too will come about.

The terrific problem of re-entry into the atmosphere which is the problem which must be solved before we can have manned space stations, can be simplified tremendously, if human pilots can help handle the re-entry phase. And this basically is what the major function of the space pilot will be. Re-entry is a blend of true space travel and aerodynamics.

Sometime this year or next year, the Air Force hopes to send up the rocket plane—designation still unknown—designed to attain a minimum orbital velocity of eighteen thousand miles an hour. This rocket plane will not be far removed from a spaceship although it will have wings, and the pilot aboard it, will



Showing in an over-simplified way Space Pilot's course of descent in a ferry rocket from a manned satellite to the Earth's surface. At point A, the ferry rocket has lost some of its kinetic energy to friction of Earth's atmosphere. Actually, ferry rocket will probably repeat this operation several times. Point B shows final course of ferry rocket through Earth's atmosphere, although this path too might extend half-way or more around the Earth.

permit it to orbit the Earth for several revolutions. Then he, by conscious action on the controls, will produce the change in orbit which will cause his perigee to dip deeper into the atmosphere and so bring his speed down until he has fully re-entered, dissipating his kinetic energy in friction against

the atmosphere. And then his skill will be tested as he comes in to Earth in the long shallow glide that will skid him down on the barren flats of the New Mexican desert.

For brief periods, the pilots of these ultra-high speed rocket planes have experienced weightless flight by arcing their planes in such a way

that centrifugal force balances gravity just as would occur in an orbiting satellite. The sensation is not sustained for more than a few minutes, but it is enough to give the feel of the real thing. This phase of training is important.

The schools which are preparing these pilots are in one sense preparing "intermediate" space pilots, that is, spacemen who exist half in the atmosphere and half in space. They will be the types who fly between the satellite and the Earth. Their actions will still take the verb "fly."

Also these pilots will supply the first true spaceman, the men who subsequently will take the Lunar, Martian and Venerian journeys. But we will consider that kind of travelling later.

THE TEST PILOTS and the student pilots who are undergoing Air Force training in the high speed rocket planes of today are a strange mixture of engineer and pilot. All of the old requirements of acute vision, high speed reaction times, sound judgment, superb health and similar assets are still to be found in them. In addition they must have extremely sound engineering and to a certain extent, scientific backgrounds. The reason for this is that so much of their activity is one of an engineering nature. Reading and interpreting

instruments, acting according to those instruments, feeling mathematical relationships, understanding complex physical situations—these are as important qualities as manipulating controls. Sustaining these skills and judgments in totally alien circumstances, without gravity, without a reference horizon or with one which is spinning madly, requires an extraordinary type of man.

The phrase "rocket plane" is to a certain extent, a misnomer. At least for the initial phases of its flight, a better description of it would be simply "rocket." Imagine that a manned satellite has been established in orbit, or for that matter, that a manned satellite *is to be* put into orbit. What role will the space pilot play in it? In one way it will be a role which has already been played by automatic controls in putting up the Sputniks and the Explorer and the Vanguard. The space pilot will master-mind the intricate, prone-to-malfunction automatic controls. Or at least he will act as an over-riding master controller capable of acting if the controls which orient the rocket and fire the stepped engines, go awry. But these activities are secondary. They can, as has been repeatedly remarked, be performed by automats.

The important thing is this: travel to the satellite eventually

cannot be one way—*men must be returned to Earth*. This is where the space pilot's skills will be infinitely valuable. Theoretically machinery can be built to perform the job, so that men might ride down in cosmic elevators—but such a task would be illogical. If the returning ferry-rocket is to carry brains, human brains, why not use them? Why try to replace them with machines a thousand times cruder?

Therefore, while the space pilot will not have to do much on the ride up—or out—on the return to Earth he will be totally occupied. And of course the fact that the descending ferry rocket, a strange combination of true rocket and small-winged glider, a beast capable of living in vacuum or in air, will be operating in the descent in an ever increasingly dense medium—the atmosphere—human skills in combating vagaries of the aerodynamic forces will be invaluable.

If you've read any accounts by test pilots who have flown the rocket planes, which are still experimental and comparative tortoises with ferry rockets, you cannot have failed to be impressed by the fact that invariably the pilot stresses the problems in slowing down and landing. On the way up there is nothing to hit—but on the way down, Mother Earth looms up rapidly!

In space, wings are useless. To an ascending rocket they are merely aerodynamic "drag." But to a descending rocket they are the breath of life. If fuels were unlimited in power, if the nuclear rocket perhaps existed, it is conceivable—likely—that a rocket descending to Terra would do so by balancing against its exhaust jet as it will do perforce against the Moon and Mars. But economy of fuel dictates the mode of landing and an Earth-approaching rocket must take on the coloration of an aircraft when it enters the atmosphere. In a word, it must glide in to a landing, killing its monstrous kinetic energy against the frictional drag of the atmosphere which now has become a friend. Therefore stubby wing-surfaces will behave in a conventional aerodynamic way, and control surfaces not unlike those on familiar aircraft will aid in the landing process.

Now it is one thing for a pilot to take a jet or a rudimentary rocket aircraft up a hundred miles and at a few thousand miles per hour, and an entirely different thing for him to come sweeping into the atmosphere from an orbiting satellite, coming down from several hundreds of miles, and killing tens of thousands of miles per hour of velocity. Well, not entirely different, for the pilots are learning in small steps.

Visualize in detail the procedure of returning from a manned satellite. The ferry rocket we presume is taking down to Earth a half dozen satellite crew members for their regular rest period. What a challenge such a course will be to the pilot of the ferry rocket! Naturally, the bulk of his course has been computer-plotted and in the beginning his role will be secondary.

First according to carefully calculated instructions he will pulse gently away from the satellite almost parallel to its trajectory—almost, but not quite. There will be a small component of velocity directing him Earthwards. Very shallowly the ferry rocket will dip into the atmosphere losing some of its enormous kinetic energy in friction against the air as it reaches perigee. As it swings outward, glowing perhaps, its stainless steel friction skin the dissipator, apogee is reached, the end of the elongated ellipse; here it radiates its heat into space. Parenthetically it might be mentioned that some velocity can be “killed” by the use of the rocket motors directed in the course of its orbit, but this presumes there is precious fuel available for the purpose—as there may be.

Around and around the Earth, to perigee and apogee the ferry rocket swings in its extended ellipse, each time losing velocity, precisely as did Sputnik I in its descent. As

yet, the space pilot has had relatively little to do. His function still has remained that of a gauge watcher, alert, aware, capable of correcting for the slightest deviations, but still not making use of his basic, fundamental, irreplaceable skill which will shortly be demanded.

EACH TIME the ferry rocket dips into the atmosphere, its perigee becomes lower and its apogee lesser. The time will come, after numerous swings around the Earth when it will no longer be an orbiting satellite of Mother Earth, but instead a meteor ready to plunge to destruction—except for the space pilot's commands.

A time comes, his instruments tell him, and his carefully developed senses inform him as well, that the ferry rocket is no longer a spaceship! It has become instead, a hyper-sonic glider. When this time comes, nose rockets can assist in lowering the still tremendous velocity. At some predicted time, a time determined both by calculation through automatic computers and the senses of the space pilot, the final descent will have to be made. It is now or never. Perhaps this final descent will consume a glide path of half the circumference of the Earth.

At a precisely calculated instant the velocity of the ferry rocket must

have decreased to well below sonic and the stubby wings are doing a job of supporting it as an almost true aerodynamic plane. It is not clear in a detailed way just how the final descent will be made—possibly it will be done on water, possibly on wheels, possibly on skids. It may even be matched by a fantastic “mother-jet” which will match its course and velocity. Possibly when all speed has been killed, a combination of parachutes may lower it. These are tremendous problems whose resolution still is uncertain.

This is the activity of the space pilot of the immediately foreseeable future. For the more distant time when we see men landing on the Moon and Mars, whose relatively airless surfaces cannot be approached in aerodynamic terms, landing can be done only by “inverse rocketry,” that is, the settling of a rocket back on its jet exhaust, the inverse of the rocket shoot. Here human judgment will be of lesser importance. As has been often stated before, this time of landing will be handled primarily by automatic controls, monitored by a pilot, although if the controls were to fail at a short distance above the landing surface, it is doubtful if human reaction time is swift enough to prevent disaster.

Should a landing be attempted on Venus however with its appar-

ent gaseous blanket, perhaps some variant of the Earth-type of landing assault may be made. More likely however, the technology of that time too will require and for that matter furnish, the logical method of the “inverse shoot.”

It can be seen that these remarks applying to “space pilot” refer to a very specific kind of person. The concept of space pilot as a sort of “flitterer about the Solar System” is exaggerated. Inter-Lunar and interplanetary travel does not make use of the same qualities that go to make up the pilot of the ferry rocket from satellite to Terra. Such travel may better be likened to an ocean voyage, with the captain corresponding to the leader of the spaceship. “Pilotage” as we use it here specifically refers to bringing back a spaceship through Terran atmosphere to Terran land.

The training sessions for ferry rocket pilots can be said to have begun. Those test pilots who are preparing to fly the hyper-sonic rocket planes are acquiring skill not greatly different from the eventual ferry rocket pilot, except in the magnitude of the task. We crawl before we walk however, and the ultra-sonic rocket plane pilots—some of them—may, indeed will, be the first pilots of the ferry rockets.

While the Air Force will not go

into great detail as yet, it is rumored that a re-examination of controls is being made, that is, the conventional stick and rudder pedals of aircraft, may not be the logical control devices for descending ferry rockets. Speculation as to what form the controls might take is futile.

Extraordinarily important in the training of the future space pilot, is an extreme emphasis on "orientation." This means specifically spatial, geographical orientation. At the speeds and altitudes of an orbiting satellite—because of no gravity—we can hypothesize that grasping one's position in relation to the Earth, must be difficult. The concept of "up" and of "down" takes on an entirely different meaning. At the altitudes ferry pilots will work—hundreds of miles—the Earth does not appear as a small sphere. To a gravitationless space pilot it will bulk *overhead* as a monstrous circle, filling a field of vision. Furthermore the geographic identification marks of the Earth's surface will be changing with astonishing rapidity. It will take iron nerves, fantastic training, and every mechanical assist imaginable, for a pilot to orient himself and stay oriented. Probably, from experience with three-dimensional film and the illusions it is capable of producing, Air Force psychologists will use cinema trickery to help train pilots. Also experience

with Link Trainers used for teaching instrument flying to conventional pilots, will serve to suggest ways in which a similar device might be constructed to simulate space travel. Unfortunately there is no way to eliminate gravity. We can only guess how deep seated the sensing of this ever-present force is.

Undoubtedly, some mathematical facility will be desirable in potential space pilots, but this would be more in the nature of geometric intuition than anything else. Computers will do the real mathematical work and communications will tie them and the services of mathematicians directly to the space pilot.

INTERPLANETARY travel, or for that matter, the Moon journey, is not a matter of piloting; it has been made abundantly clear that the course of a space ship will be a section of an ellipse, an automatic consequence of gravity and fuel economics. The commander then of an interplanetary space-ship must think in terms of projectiles and projectile trajectories in a conservative force field. It is more proper to speak of the "ballistics" of a spaceship than of the "flight." Because these ballistic trajectories are unhurried by our standards of time—the distances are so enormous—there is plenty of opportunity for calculation almost

at leisure. This aspect of spaceship "piloting" is not the one with which we have been concerned. In fact, it is true to say that interplanetary or inter-Lunar travel is a less demanding effort on the part of the commander, than is the fiercely difficult task of the ferry rocket pilot with whom we have dealt.

The "re-entry" problem, the problem of an inter-continental ballistic missile coming back to Earth to deliver its devastating hydrogen bomb, which has so concerned our country and Russia, is terribly difficult as everyone knows. The "re-entry" problem of a manned ferry rocket descending to Terra from a space station is many times more difficult. Here we must be concerned with delivering human beings safely, not inanimate warheads. The ICBM problem is essentially solved by the development of suitable ceramic-metal cones. The ferry rocket problem won't be solved that easily until some human being has made the initial effort.

By the time this article is in print it is conceivable that either the Russians or we will have launched a man-carrying rocket into space to heights of perhaps a thousand miles. However the descent of the sealed chamber carrying the man will be a blend of counterthrust rockets and finally a variety of parachutes. This action,

outside of the assurance it will give that men can go into space, will have little or nothing to do with the real effort of developing the ferry rocket pilot who has been the subject of this article.

Captain Kincheloe of the USAF is scheduled some time in 1959 to take up the X-15 rocket research plane, possibly to a height of several hundred miles, where, for a portion of its trajectory at Mach 6 (4500 miles per hour), he will experience some short period of free fall. In a sense he can be thought of as a "space" pilot. For the most part however his flight will not differ from conventional aircraft action except in higher speed and greater height.

The next step—it is possible that this may precede Kinchloe's if rumors about Soviet activity are true—will be the launching of a man into space in the terella of a rocket, the artificial environment built into the rocket just under the nose cone. The return to Earth of this man will be by a blend of counter-rocket thrust and final parachute landing. This man neither can be said to be a "space" pilot. He will simply have "gone along for the ride." He will have been an observer and he will give living proof that man can survive in space.

Some time after these events however, some human being is go-

ing to take a combination of aircraft and rocket—the ship will probably consist of a vaguely conventional rocket plane mounted on a giant three stage rocket as the fourth stage—and be thrown into an orbit. This orbit may be partial and of very short duration compared with the Sputnik type, but it will be truly an orbit where centrifugal force balances gravity and where the plane is honestly in orbit however short the time. Perigee will be close to Earth, so close in fact, that descent will be immediate and the fierce problems of the ferry rocket which we have described in detail, will have to be conquered. When this event occurs—and it is not far off—then, and then only, can we say that we have produced a space pilot. Right now, the problems faced by this man seem almost insuperable, but then the same thing could have been said a short while ago about the very idea of orbiting any kind of a satellite—the sky is full of them now!

After this space pilot has been developed, then the “spaceman” can come into being. It is appropriate here to distinguish carefully and accurately once more between the “space pilot” who will man the ferry rocket, and the “spaceman” who will man the satellites and the spaceships between the satellites and the Moon

and planets. Fortunately there is an excellent technical way of doing this.

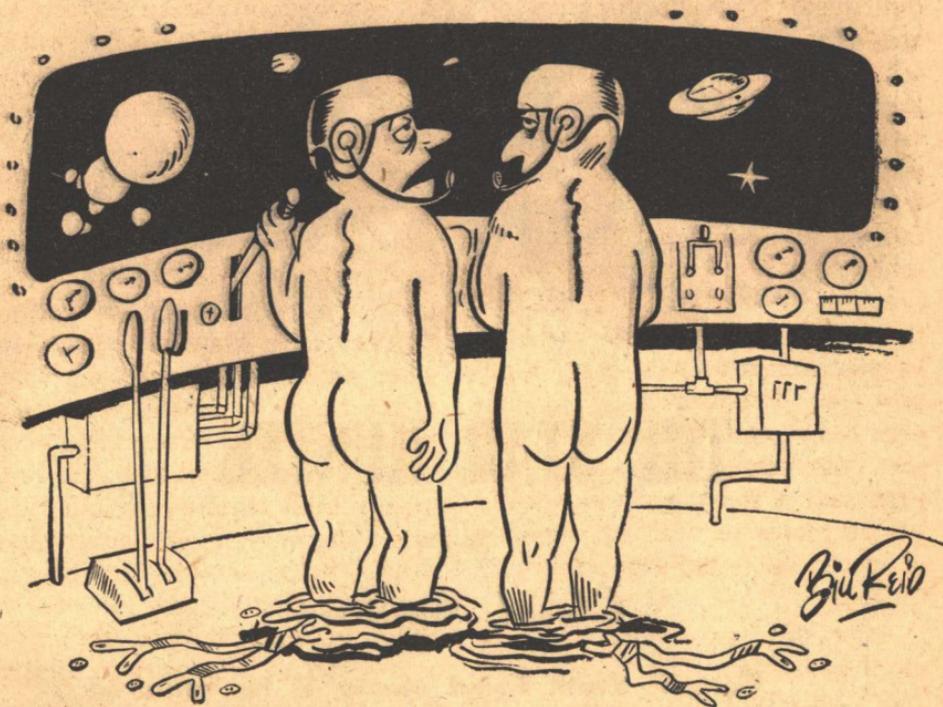
A space pilot, like an aircraft pilot—understand clearly here that by space pilot we mean the controller of a ferry rocket—can and will give “time dependent” signals, that is, he will control the path of his ship by means of controls which he can manipulate and which the ship will obey instantly. He will be functioning as part of a “closed loop,” in which time is the independent variable.

A spaceman on the other hand, is incapable of giving time dependent signals. By that we mean, he can give commands, but these commands will simply set into action programs which have been long since set up. A trip through space is the result of a long sequence of planned events. Everything connected with establishing an orbit of any kind requires the utmost in precise timing—as the launching of satellites has shown—and because human reaction times are of the order of fraction of a second or even seconds between cognition and action, the timing of rocket firing, rocket cut-off, and the like, must be automatic. A computer must take over the chores of the mind, eye and hand. While the true spaceman’s development seems a little farther away than that of the space pilot, his is the easier

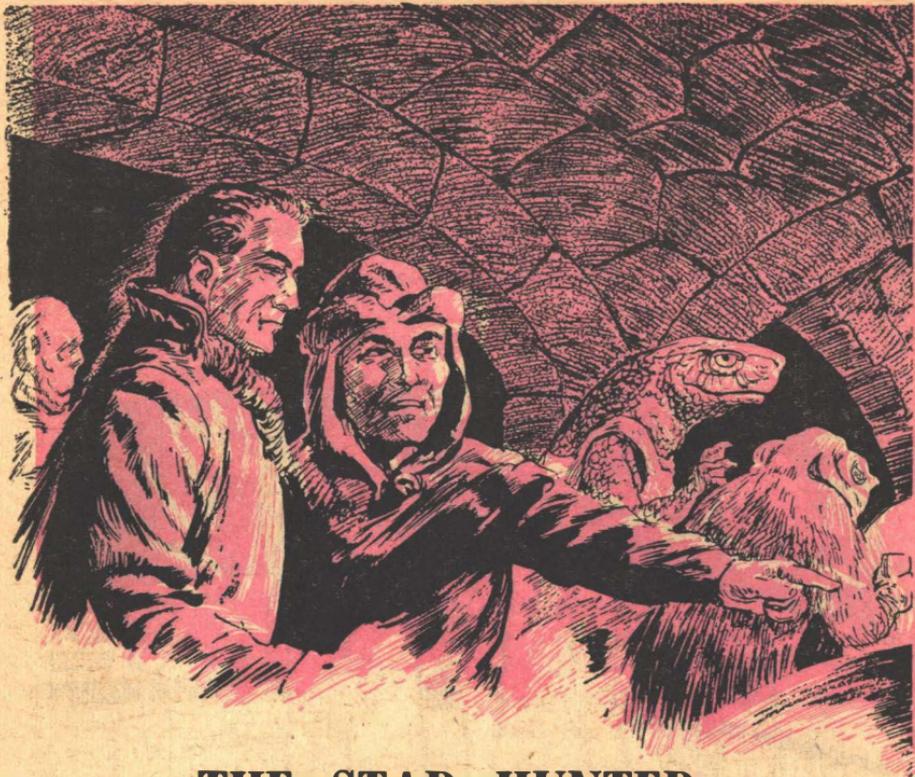
task of the two.

The demands on human beings, both mental and physical, required by the very human desire to go into space, are severe, but no more severe in kind, than the same de-

mands required to carry him over oceans, through air and across Antarctic wastes. Given the equipment, space pilots—both kinds—will go to the limits of the Solar System—and perhaps beyond . . .



"Breaking free of Earth's gravitational pull is an experience I can never quite get over."



THE STAR HUNTER

by

Edmond Hamilton

Certain death faced Mason if he ventured into the untracked Outer Marches of the galaxy; yet if he didn't go the galaxy itself would die!

THE WRATH of the King of Orion flamed across the void. Out from the Hyades sped his hunters, and from Mintaka and Saiph and Aldebaran, grim ships of war sped headlong between the



stars in vengeful search for the small and secret ship that had dared violate their domain.

The coded messages of anger and alarm flashed far away. And across the galaxy the star-empires heard, and alertly watched their own frontiers. The Kingdom of Cassiopeia, the federated Barons of Hercules who held a thousand suns and worlds, the Kings of Leo and Hydra and Draco, all these and a score of smaller realms clear away to the Marches of Outer Space sent forth their fleets to watch, jealous of the great empire of Orion, and more jealous still of the equally great and far older Terran Empire whose ship it was that the hunters hunted.

The fleeing ship was a Class Five Scout of the Terran Navy, a tiny toy craft compared to the great cruisers and heavies that pursued it. Its guns were popguns, it had hardly any armor, but it could go fast. It was going very fast now, a mote of metal flying toward the Terran frontier. But, Hugh Mason knew with fatal knowledge, it was not fast enough.

"We haven't got a prayer," said Stack. Red-eyed and unshaven, he did not look like the captain of a Scout as he stood with Mason behind the pilot in the little control-room. He looked like a tramp.

"Those cruisers behind can't catch us," said Mason.

"No, they can't," said Stack. "But what about the ones ahead? They'll be fanning out from Aldebaran right now."

Mason made no answer but his mouth tightened as he looked out the broad control-room window, the window that was really a complicated scanner translating scrambled-up rays into ordinary light.

The light of a million stars beat upon him from the titanic panorama of stellar glare and cosmic gloom. Amid the abyssal lamps of sapphire blue and diamond white and smoky orange there glowed like a friendly beacon the whitish-green magnificence of Sirius, and beyond it the far yellow spark of Sol, old capital of the Terran Empire and the fountainhead from which man had spread through the galaxy. But closer and almost dead ahead was the blood-colored flare of Aldebaran, whose system was near the limits of the Orionid Empire.

Mason had often wondered how this stupefying vista had looked to the first men who had gone out from Sol to colonize the galaxy, thousands of years ago. Their frail star-ships had been borne out into the great deeps by their courage and faith, their dream of a peopled galaxy living in peace under uni-

versal law. But the dream had crumbled. One center of government could not hold the whole galaxy. The independent kingdoms had sprung up, rejecting the authority of the Terran Empire, yet taking old Terran titles of royalty for their chosen sovereigns. Oldest, biggest, was the Terran Empire that still would have no sovereign except its elected Council. But others were almost as strong, and their kings yearned for greater glory, like Janissar of Orion.

Thinking of that, Mason's hands clenched upon a stanchion. Between his teeth, he said,

"We've got to get Oliphant back to Terra before he dies. He's the key to everything."

Stack shrugged hopelessly. "Aldebaran is one of Orion's main fleet-bases. They'll know we're coming. Communicate beams are faster than ships."

Mason said harshly, "I know all that. In case you've forgotten, I was a flight officer before I went into Intelligence."

Stack flushed. "No offense."

Mason turned then. He was thirty-two and he felt like a hundred-and-two, a dark man with stubble on his face and a desperation in his eyes. He said,

"We're both beat to pieces. Forget my crack. If we start slanging each other, we're licked. We've got

to think fast."

Stack gestured toward the great star ahead that like a bloody eye watched them come.

"Their cruisers will fan out east, west, zenith and nadir from Aldebaran. We have to go around Aldebaran's planetary system, yet if we swing wide around their cruiser-screens we'll run into ships coming up from Aleph and Channar."

Mason looked at the star-blazing firmament and said, "Once past Aldebaran, the Terran frontier isn't far. But you're right, we can't swing wide around their cruiser-screens."

"So we have to hit their net and try to crash through it," said Stack.

"They'd blow us out of space," said Mason. His jaw tightened. "There's only one hole, one way through them."

"There won't be *any* hole," said Stack. "From Aldebaran system out every direction, they'll be so tight a fly couldn't get through—"

Of a sudden, looking at Mason's drawn face, he was silent. Then in an altered voice he said, "Now I get it. One hole. Right through Aldebaran's planetary system itself."

"That's it," nodded Mason.

Stack mopped his brow, and the pilot turned and flashed a startled glance at them. Stack said,

"You know what our chances will be, at these speeds?"

"I know we haven't any chance at all, any other way," said Mason. "Set it up on the computers. I'm going back to see Oliphant."

He left the crowded control-room and went back along the narrow companionway that was the axis of the SC-1419. A Scout-class starship had barely room for its machinery and its eight men. Its whole metal fabric seemed to vibrate in every atom from the thrust of its massive drive-units, as it bolted at milli-light-speeds toward the frontier.

MASON SQUEEZED between towering ion-drive assemblies that smelled of hot metal, and into the tiny cubby where Oliphant lay strapped in a bunk. One of the crew, young Finetti, was sitting beside him and looked up at Mason.

"He's worse," said Finetti. "Pulse, respiration, everything."

"He hasn't come to?"

"Not for a minute, ever since we picked him up," said Finetti. He added, "I wish I could do more for him. I'm not a medic, just a spacer with six-months' first-aid training."

"You're doing fine," said Mason. He bent down over the bunk.

"Oliphant," he said.

The man in the bunk did not

answer. His thin face was gray and immobile, the eyes shut. There was only a faint rise and fall of the mass of bandages that swathed his whole torso.

He was a small man. But to Mason, he loomed gigantic. For Oliphant, his friend and superior, had done a thing no man in all the history of Terran Intelligence had done before. He had gone right into the throne-world of the Orionid Empire, deep in the Pleiades, in search of a secret, and he had come away again.

He hadn't had to do it. He was high enough in the service to give the job to Mason or anyone else. But the peace of the galaxy was an uneasy one, with only the weight and power of the Terran Empire keeping the jealous star-kings from each other's throats. And when the rumor had come from Orion, Oliphant himself had gone in to learn the truth.

A rumor, a whisper, filtering by devious channels across the void. The whisper had said that Janissar, King-Sovereign of Orion, was a happy man. That he was reaching toward a power, a weapon, a something, that would make Orion supreme. If he got it, if he used it to enlarge his empire, the peace of the galaxy would be torn to shreds. It might be only a baseless rumor.

Oliphant had gone in to find out.

It was the SC-1419 that had taken him to a dead, airless globe in the Pleiades, sneaking secretly into Orion space. In his little flitter, Oliphant had gone away from there, heading for the throne-world of the king of Orion. They had waited, and finally the flitter had come back. But it had come back on auto-pilot, with Oliphant inside it mortally wounded and unconscious. And he had remained unconscious ever since, and whatever he had learned was still locked in his brain.

"Oliphant!" said Mason again, close to his ear. "It's Mason. *Mason.*"

The waxen face did not stir. Oliphant was far away in realms of sleep where friends and stars and empires meant nothing.

"I don't think he can last all the way home, sir," said Finetti. And added anxiously, on a questioning note, "If we get home."

Mason slowly straightened up. "Do all you can for him. We'll get home. We—"

The annunciator in the wall said, in Stack's voice, "Mason!"

Mason went back to the control-room on the double. The hysterical whirring of the computer was just ceasing, as he entered.

Stack said stolidly, "Their

cruisers ahead have radar-ranged us. We're running right onto them now."

Mason glanced through the scanner-window. Aldebaran was now a great red blaze amid the stars, a little to the right. Its smaller companion-sun was almost hidden in its glare.

"To fool them on our intentions, we shouldn't turn toward it till the last moment," said Stack. "That means, when they start shelling us."

Mason nodded. "It's your ship."

"Is it?" said Stack sourly. "It was until I came under Intelligence orders. Now I don't know."

Mason did not answer that. He watched, and waited. Out there in the star-gleaming void ahead of them, the cruisers of Orion were closing toward them, their target-trackers were at work, and—

A beautiful red-gold flare blossomed to their left, blotting out the whole universe in its blinding radiance. An instant later, another flare burst on their right, this one so close that the scout was tossed around like a photon on the crest of a solar prominence. Guns inconceivably far away were loosing missiles whose self-powered ion-drive hurled them at milli-light-speeds faster than any starship.

Stack said to the pilot, "That's close enough. The pattern's set up.

Turn off and go on auto."

The pilot moved switches and then sat back, his hands hanging idly, his shoulders quivering.

The scout swung sharply and plunged toward the red blaze of Aldebaran, like a moth bent on suicide in the mighty star.

"I *hope*," said Stack, "that nobody gets in our way."

The skin between Mason's shoulders crawled, as he watched the great red star and its small companion leap toward them. Already, at this speed, the thronging specks of its eighteen planets were coming into sight.

To run through a planetary system at milli-light-speeds was flatly forbidden by every law in the galaxy. It was also sheer madness. A computer could allow for the position of every planet and moon and minor body in the system. A computer could not allow for the interplanetary shipping that thronged between those worlds. They were taking a calculated risk, and if they hit anything they would never know it at all.

No human pilot could make the abrupt compensations and changes of course necessary to avoid all those circling worlds and moons. The auto-pilot clacked smugly to itself as it rushed them on.

Mason glimpsed a fleck of light

that came up with heart-stopping speed, growing like a blown-up balloon into a vast, ice-clad planet with a host of little moons, reeling past them and dropping behind.

HE CLUNG to a stanchion as the auto-pilot clacked and the SC-1419 heeled over sharply. They went rushing along the rim of an asteroidal zone that was like a mighty river of stone in the sky, then heeled again and now Aldebaran and its little companion were glaring again in their faces, bigger than ever. The two suns marched away abruptly to the left as the auto shifted their course, and a huge planet of saffron and black swung past.

Stack made a sound that was not quite a laugh. "I'll bet there are some surprised men back in those cruisers." And then he said, "The hell with them. I'm scared."

He had reason to be, Mason thought, for he too was scared, right down to his backbone. They were rushing in among the inner planets where shipping was heaviest and if they hit or even grazed a ship, if—

He wanted to close his eyes, not to look at the red and orange and dun-colored planets and moons racing past them. He thought that

the auto-pilot had gone crazy, he thought that they'd never make it, and then the immense, overwhelming limb of Aldebaran was ahead and the SC-1419 was running down on the gap between it and the smaller companion sun.

They shot through that pass between the glaring suns, and on across the planetary orbits. They had made it halfway, and Mason was sweating, and the pilot sat hunched in his chair and closed his eyes.

The auto-pilot had gone crazy indeed, it wanted to kill them, it was hurling them headlong toward a great orange planet that widened out with frightful rapidity. Then the metal mind clacked, and they heeled over, past a far-swinging moon like a copper shield, and heeled again and rushed on.

And something like an eternity later a voice was saying, "We're through. By Heaven, we *made* it."

The SC-1419 was in deep space again, bolting for the far lights of Sirius and Sol and the Terran frontier, and Aldebaran and its worlds were falling behind.

Stack, his face red and glistening, shouted, "It'll take those cruisers a while to swing back around outside their system—they'll never catch us now."

Mason, dazedly, became aware that someone was tugging at his

arm. It was Finetti, his face gray with fear and excitement.

"Mr. Mason, he's going. He can't last many minutes!"

Mason crashed back from his pinnacle of new hope. They had dared the citadel of Orion, and run the gauntlet of its star-ships, and escaped, and all for nothing if Oliphant died.

He plunged back along the companionway, with Finetti at his heels. One glance at Oliphant was enough. His eyes were still closed, his face still unmoving, but his color had become ghastly and his respiration was imperceptible. He was, obviously, dying.

Mason looked at him. He knew what he must do, what Oliphant himself would want done, so that his life was not sacrificed in vain. But it took him moments before he could speak the words.

"Give him electroshock stimulant," he told Finetti.

Finetti stared, startled. "But in his condition, it'll kill him almost instantly."

"Almost," said Mason. "He may be able to talk. He's going to die anyway in a few minutes, nothing can save him. *Give it!*"

His voice lashed Finetti into action. Finetti, his hands trembling affixed the electrodes. The whine of the apparatus filled the cubby.

Oliphant twitched. His body

shuddered, writhed. Of a sudden, his eyes opened, staring blankly upward.

Mason bent over him. "John, it's me—Hugh Mason. What did you find out?"

Oliphant whispered, a dribble of words. "I made it out. I didn't think—they shot me as I was getting into the flitter—"

"What did you find out? What's the new thing that Orion's got?"

Oliphant's eyes focused on his face. He spoke painfully, slurredly.

"What it is exactly, I couldn't find out. It's something that was discovered by Ryll Emrys, one of their greatest scientists. Something of cosmic power. But Ryll Emrys has fled from Orion, taking his secret with him—"

Mason bent closer, for now Oliphant's voice was failing fast.

"Ryll Emrys fled to the Marches of Outer Space. Orion has sent one of their top agents, V'rann, after him. They'll risk anything to get him back, they—"

The voice stopped suddenly, and an incredulous look came into Oliphant's eyes. "Why, I'm dying, I—" Then understanding came into his eyes, and he whispered, "Thanks, Hugh."

Finetti bent over him, and after a moment he straightened up. "He's gone."

Mason was silent, looking down at the still face. Then he said.

"He did his job. And now there's a bigger job for someone else to do. In the Marches of Outer Space."

CHAPTER II

THE TWO EARTHMEN were like giants walking through the galaxy. They strode between the shining constellations, and the great streams of stars washed against their breasts, and their shoulders and heads towered up colossal above the million tiny suns.

This was not the real galaxy but an infinitely smaller simulacrum of it, a planetarium on a grand scale that filled this whole hundred-foot circular room deep beneath Terran Intelligence Building, on Sirius Four. Complexes of lenses projected accurate images of every important star in the galaxy. It was all here—the star-clusters and lone suns and dark rogues, the magnificence of the great constellations, the whole sweep of the galaxy.

One of the two men was Hugh Mason. The other was Valdez, chief of Terran Intelligence, a deeply-worried man. His thin face twitched slightly, and his deep eyes roved alertly as they walked through the great swarm of light-flecks. He

pointed to the soft lines of green light that delineated the snaking frontiers of the Terran Empire, and Orion Empire, and all the kingdoms beyond.

Valdez stopped, and his hand stretched out like the hand of a god as he pointed over the tiny stars to a region at the galaxy edge that had no lines of delineation.

"The Marches of Outer Space," he said. "No kingdom out there owns them. None of the star-kings there will let a rival conquer them. So they remain a jungle of independent worlds."

Mason nodded, a trifle bitterly. "And because Cassiopeia and Draco and Lyra have kings jealous of each other, the Marches remain a haven for every outlaw, criminal and ambitious adventurer in the galaxy."

Valdez went farther, and stood with the shining stars of Ursa Major floating around his chest, looking at that nameless region of stars out on the Rim.

"Yes," he said. "Quroon—that's the big green star beyond the Dumbbell Nebula—is the center of all the activity in the Marches. Someone will try setting up as king someday, at Quroon."

Mason stared at the far-flung fringe of stars, and he heard again the dying voice of Oliphant saying, "*Ryll Emrys fled to the Marches*

of Outer Space. Orion will risk anything to get him back—"

"That fugitive scientist is the key to everything," Valdez was saying. "Why did he run away to the Marches? What was it he'd discovered—what power or weapon? It must be something plenty big, if he's so important to Orion."

"It's big," muttered Mason. "Oliphant said they were sending a top agent after him. One of their aces, named V'rann."

V'rann. A name that rang like an ominous bell. Whoever V'rann was, he must be good, to be sent on such a mission.

"It figures," Valdez said tensely. "Orion wouldn't send a fleet into the Marches after the man, except as a last resort. The star-kings near the Marches would be up in arms if they did. But if their secret agent can get Ryll Emrys out of there and fetch him back—"

Mason nodded grimly. "Just so. And *we* can't let Orion get hold of this man and his secret again, no matter what. It's up to us to get hold of Ryll Emrys first."

Valdez looked at him. "You know how risky it'll be, Mason. Do you still want the job?"

Mason said flatly, "Oliphant was my friend. I'm going to pick up where he left off. Yes, I want it."

They went on out of the little

simulated galaxy, out of the big hall and to Valdez' office.

"You know," said Valdez, "that any Intelligence man or lawman who goes into the Marches is liable to get short shrift."

"I know," Mason said. "I plan to go in as a no-world man, an outlaw seeking refuge."

"No good," said his chief. "It's been tried, and never works. A new man, a man they don't know, is watched so closely he can't do anything."

He drew a small photo from his desk and tossed it across to Mason. "Look at this man."

The man in the photo was about his own age and size, Mason thought. But his close-cropped hair was bleached colorless, his rawboned, powerful face was deeply reddened, and his blue eyes were cold and insolent. It was a strong face, tough and reckless.

"His name is Brond Holl," said Valdez. "He was an officer in the service of one of the Hercules Barons. He killed the Baron's brother in a quarrel, and had to flee to the Marches. He was one of the toughest of their outlaw captains out there."

"Was?"

Valdez nodded. "A year ago, the Cassiopeian Navy got a tip that Brond Holl was on his way to plunder one of their small new star-

world colonies. They tried to grab him but got away—but they had forced him into Terran space and our own cruisers scooped him up. He's doing a sentence out in Sirius Sixteen prison, right now."

Instantly, Mason understood what was in his chief's mind. He looked at the photo with a sharper interest. He said,

"Hair and eye color wouldn't be a problem, these days. But his face isn't much like mine."

VALDEZ SHRUGGED. "It'd take a few days, even with modern ultrafast 'healing techniques. But a few muscle-grafts, some plastic pads inserted into your facial tissues—and we'd make you Brond Holl's double."

Mason looked up from the photograph, frowning. "For me to break for the Marches as Brond Holl, the real Holl would have to 'escape'. How many people would be in on it?"

"T h r e e—four—including us," said Valdez. "It's too risky to let more know. We'd get Holl out and while we're taking him secretly to a new hidden cell, you can be stealing a fast flitter and taking off."

"With the Terran Navy after me?" Mason said.

Valdez shook his head. "We can get around that, by timing it prop-

erly. If you high-jump it to the Marches, you'll be all right."

"It has to be a high-jump," Mason said decisively. "I wouldn't have a chance of getting through three kingdoms. I can use the time—I'll need a lot of tape-studying to *be* Brond Holl as well as look like him."

Four nights later, Mason crouched shivering in the shadow of tumbled rocks on Sirius Sixteen, peering down at the small official spaceport of Naval Prison. There was only one of the two moons in the sky, enough to shed an erry glow over the dark, stony world.

The prison itself bulked massive in the background, gleaming with many lights. Down here on the small spaceport were two big supply-freighters, a few small interplanetary flitters, and one flitter that was considerably bigger than the little planet-hoppers.

"I'm timing it for a visit of the Deputy Inspector from Sol," Valdez had said. "His long-range flitter can take you where you want to go. It's a four-man job, but you can handle it alone on auto."

Mason, watching and waiting, thought grimly that there would be considerable confusion if some roving guard stumbled on him here. He wore a regulation prison coverall. He also wore the face of

Brond Holl. Chemicals had quickly bleached his hair and altered his eyes from brown to blue, and the super-surgery and ultra-fast healing skills of modern medicine had given him a replica of the Herculean's face.

Mason glanced at his chrono, then picked up the square metal case beside him by its strap. He started stealing down through the rocks toward the spaceport.

The case was heavy. It was going to be an awkward nuisance, but he had to have it for it contained the tapes that would teach him to *be* Brond Holl.

The spaceport was not guarded strongly. The guards were concentrated in the prison itself, on the sound, old principle of locking up the thief instead of locking against him. And Sirius Sixteen prison contained some of the most noted thieves in all the galaxy.

"The devil!" said Mason to himself in a furious whisper, as he crept closer to the long-range flitter.

Someone was in the flitter. Its airlock door was open and sounds came from inside.

Probably, Mason thought, a crewman had stayed to check over something. He damned such conscientiousness. This could mean a delay, and even a few minutes delay could be fatal. Presently the

prison guards would discover that Brond Holl had got out of his cell—not knowing, of course, that Valdez and his men had taken him out secretly. Then the alarm would sound, and he'd have to move fast if he, impersonating Brond Hall, were to escape.

Mason grasped at an idea. There was no time to weigh its chances. Time was running out on him. He crept to the shadow of the flitter, and crouched down by its metal flank, close to the open airlock.

He waited, a fine sweat coming onto his forehead despite the chill of the night. The pale moon peered down at him in silence.

Like the bursting of a bomb, the screeching alarms cut loose at the prison. Mason tensed. He heard the crewman inside the flitter running toward the airlock. The man jumped out, peering excitedly.

"What in the—" he was saying under his breath.

Mason rose up from the shadows behind the crewman and hit him, not hard but quite scientifically. The man went down without a sound.

The diabolical raving of the alarms kept going, and lights sprang on to sweep the whole area outside the prison. The guard-batteries would be springing to attention, Mason knew.

Moving with frantic speed, he

hauled the unconscious crewman to a safe distance. He snatched the man's side-arm off him, then bounded back, tossed his metal case inside the flitter, jumped in after it and spun the airlock-door shut.

He got a slight break, now. The minipile, the power-source of the flitter, was running, the technician he had slugged must have been making a routine test. One glance at its indicators, and Mason ran forward to the cockpit, strapped into the pilot-chair, and then punched buttons fast.

The flitter went up out of there like a freed genie, standing on its tail for a moment with the search-light beams swinging to catch it. Then the ion-drive hurled it away from Sirius Sixteen in a dizzying rush.

Even as Mason's fingers reached frantically toward other buttons, the missiles began exploding nearby.

HE PUNCHED the switch marked EVASIVE PATTERN. The auto-pilot took over and the flitter began a series of crazy gyrations, changing direction every two seconds in an unpredictable pattern. But despite the random divergencies, it held its main course.

Mason gripped his hands tight-

ly together and waited.

Flares like the lightning of a cosmic thunderstorm exploded all across the sky. The flitter was out in clear space, weaving and reeling this way and that, the guard-batteries unable to get a clean fix on it. It was up out of the shadow of the planet now, and bursting into the overpowering white glare of Sirius itself.

"*Now!*" thought Mason, and snapped off the EVASIVE switch.

The flitter, on full ion-drive, went away on a straight line, building light-speeds.

The flares continued to dance behind him for a moment, and then abruptly stopped. At this speed, he was out of the batteries' range.

Mason mopped his brow. "That ought to be realistic enough to deceive anybody!"

At this moment, word would be flashing out that Brond Holl had somehow got out of the prison, had stolen an inspector's long-range flitter, and was breaking for deep space.

So far, so good. That was the word that he wanted to go out, to pave the way for his coming to the Marches. But the cruisers of the Terran Navy would be getting the word, too.

Valdez had timed this fake "escape" for a time when there would

be no formations of Terran warships close to Sirius. Otherwise, the whole "escape" would be impossible.

"Let's just hope," Mason told himself grimly, "that Naval Intelligence hasn't overlooked any cruisers."

The flitter was running at mounting speeds, and the enormous glare of Sirius was well behind him. But long-range radar would still be probing for him.

He and Valdez had planned carefully. He sent the flitter angling toward the Dog-star Shoals, a great sweep of interstellar debris with a few small and uninhabited stars and worlds in it.

As soon as he had the Dog-star Shoals between him and Sirius, he was masked from radar and free to take his true direction. It was roughly zenith by zenith-west—a course that would slant him up out of the main swarm of the galaxy, heading westward.

After a time, Mason put the flitter on auto-pilot again and slept. When he had slept and awakened several times, he woke finally to find that the flitter, now at full-milli-light-speed velocity, was above the main lens-shaped swarm of the galaxy.

This was the "high jump"—crossing above the galaxy instead of through it. There were only a

few faint scattered stars up here. And the laws and navies of the star-kingdoms did not run here.

Mason looked down through the scanner-windows at the vast, burning cloud, each spark of which was a sun. The flutter, moving many thousands of times faster than light, seemed barely to be crawling.

"And now the tapes," he told himself. "I've got to be Brond Holl to the life before I hit the Marches."

Yet Mason delayed breaking out the tape-machine and tapes. He had never made the high jump before. Now, caught in a strange fascination, he looked down at the mighty continent of suns above which he was moving.

His mission, his hopes, the plans and fate and future of the Terran Empire itself, all shrank to insignificance in his mind. What were the yearnings and fears of men, compared to the titanic majesty of this slow-wheeling island-universe that moved through the greater deeps on the path of its own cosmic fate, forever separated from the other giant swarms of stars whose lonely light flickered from far away? The immensity of the spectacle rebuked the pettiness of men.

And yet, Mason thought, the hardy sons of Adam had with insolent courage ignored that rebuke.

They had pressed out from Earth in their first star-ships, so long ago now that the memory was only legend, to star after star, world after world. Those planets that bore intelligent life, whether humanoid or alien, they either had let alone or had landed upon by agreement. They had kept on and on, until finally the vast and growing star-realm broke down of its own weight into all the independent stellar empires and kingdoms that marched back beneath him now.

Back there behind him already stretched the far-flung suns of the Terran Empire, still the biggest of all, stretching from Arcturus to far Centaurus, with its historical center at little Sol but with its real capital at Sirius. And south and west from it loomed the fierce bright suns of the Empire of Orion, and beyond that the faraway kingdom of Argo whose rulers boasted great Canopus itself as the sun of their throne-world. And east from it, far away too, shone the blazing magnificence of Hercules Cluster, that awesome hive of suns held in fee by the federated Barons who ranked themselves equal to any of the kings of stars.

MASON'S GAZE swept ahead, over the shining stellar nations he was crossing in this high jump. Cepheus and Cassiopeia, the two

allied kingdoms of the north, and the huddle of smaller star-kingdoms that had banded themselves together in the League of the Polar Suns, and beyond that the Kingdom of Lyra from which Vega watched like a fierce blue eye, and farther still the no-man's-land of fringe stars that was the Marches of Outer Space.

Mason came out of his dream, then. The Marches were his destination, and unless he played his part well there, he would not live long.

He got out the tapes. It was time that he quit being Hugh Mason, Terran agent, and became Brond Holl, outlaw from Hercules.

"I wonder," he thought, as he adjusted the encephalograph, "if V'rann, the Orion agent, will use the same trick. Probably."

No use to worry about that yet. He relaxed, and switched on the little machine, and let the recordings pour into his mind.

All the memories of Brond Holl had been caught on these tapes by the electro-encephalographic recordings Valdez had made of the outlaw in Sirius Prison. The whole past life of the man unrolled in Mason's mind, as he lay in the rushing flitter, day after day.

With the recorded memories of Brond Holl's earlier life, Mason was not so deeply concerned. But the Herculean outlaw's life at Qu-

roon concerned him much indeed, and he ran those tapes again and again. He learned all that the man remembered about Quroon City, and about the outlaw captains of the Marches. Garr Atten, the big Hydran who was unofficial leader of the captains, and Fayaman of Draco who was no friend to Brond Holl at all, and Hoxie, the old Terran, and others like Shaa of Rigel and Kikuri of Polaris who were humanoid, not human.

But then Mason learned an upsetting thing. Brond Holl's mind had held a fierce conviction that it was someone at Quroon who had secretly sent out the tip that had got him captured.

"The devil!" thought Mason. "If that's so, I've got Brond Holl's enemies, as well as that agent from Orion, to guard against while I look for Ryll Emrys."

He dismissed the disturbing possibility from mind for the present, and began the task of learning how to impersonate Brond Holl.

Mason put on the visi-audio tapes that had been made of the outlaw. He watched them over and over, studying every mannerism, tone of voice and gesture of Brond Holl. He practiced being the Herculean, striding back and forth in the flitter, swearing at the confinement, frowning blackly.

When he thought he had finally

absorbed all that he could from the tapes, he carefully destroyed them all.

The flitter sped on and on. Even at its milli-light-speeds, the voyage seemed endless. But finally, its auto-pilot changed course. The flitter was coming down from the high jump, angling down over the frontier between the Kingdom of Lyra and the Marches of Outer Space.

Mason did not relax his tension when he was down over the frontier. Lyra cruisers prowled into the Marches at times, and would have heard the flash about Brond Holl's escape in a Terran flitter.

He breathed a little more easily when he saw looming up ahead a gigantic, glowing cloud. It was the Dumbbell Nebula—a vast cloud of cosmic dust illumined by the light of the stars deep inside it. The dust made radar unreliable, and he would be safer to cut through the nebula. He sent the flitter plunging into the cloud.

His radar screen now became murky and uncertain but he watched it constantly. The fogged stars in here that shone out like eery witchfires were easy to avoid, but there might be dark bodies and he would have little enough warning of them.

The flitter was two-thirds of the way through the cloud, when Mason uttered a sudden exclamation.

The radar screen, clearing for a second, showed a symmetrical formation of several dozens of blips, not moving but poised immobile here in the nebula not far from him.

"Ships—cruisers—a full squadron!" Mason muttered. "Hiding here in the nebula—"

The radar screen distorted and fogged again. The hidden ships might not have seen him on their radar in that brief moment of clearing, but if they had seen him—

He sent the flitter rushing ahead at highest speed, expecting every moment a burst of missiles. Nothing happened. Then he had not been spotted?

"But whose ships are they? Lyran cruisers watching for outlaw ships? No, they couldn't watch with their radar fogged—"

An alarming possibility burst upon him.

"By Heaven, that could be it!"

The flitter burst out of the nebula into open space again. Before him stretched a vast region of scattered stars and clotted star-clusters, thinning in number as they approached the fringe of the galaxy. Here was the no-man's-land of the galaxy, the Marches of Outer Space.

Somewhere in this nameless frontier region was Ryll Emrys, the fugitive scientist whom Orion want-

ed back so badly.

"And Brond Holl's own enemies," thought Mason grimly. "Well, I asked for it."

He sent the flitter on a straight course toward Quroon.

CHAPTER III

DEEP INSIDE a dense cluster of stars there burned a brilliant, emerald-colored sun with a single world. That big green sun and its planet were guarded on every side by the thickly-swarmed hosts of stars whose interacting gravitational fields created a navigation danger made worse by the presence of great drift-streams.

To the lush warm world of the green sun, inhabited only by small and primitive humanoids, had come some of the first explorers who had reached this fringe of the galaxy. That had been long ago in the days when the human race was bursting out from Sol in explosive fashion. But in those great days, when star-kingdoms were rising and grabbing for worlds in the constellational wilderness, this cluster was too dangerous to be tempting. The colonizers, the kingdom-makers, had ignored this fringe region and had gone toward richer parts of the galaxy.

Later, fugitives from the laws of the star-kings had come to the

world of this green star Quroon. More and more of them had come, human and humanoid, Terrans and Orionids and Cassiopeians, until there had grown up that strange outlaw civilization ruled by the captains whose armed star-cruisers were the only law out here on the Rim. Often, the kings of Cassiopeia and Lyra and Draco had talked of banding together to crush the outlaws of the Marches, but always their rival claims to the territory had prevented such action.

Mason, navigating the flitter at reduced speed through the bewildering blaze of the cluster suns, thought that eventually one of the star-kingdoms would try to grab the Marches.

"And a nice job they'll have, when they try it," he thought.

The powerful magnetic and gravitational fields of the thronging stars had his instruments cockeyed. He more than once almost took routes between star-systems that would have led into blind alleys of drift.

But he had Brond Holl's memories to guide him, and he tacked through the cluster by familiar star-marks, always drawing nearer that emerald sun.

He knew that there were automatic radar-warning stations located on planets and dead stars that he passed, flashing word of the com-

ing of his small ship to Quroon. If more than one ship, the captains of the Marches would have been on the way to challenge him, but he met no challenge until he was through the last star-pass and running down on the green sun.

A thin, nasal voice spoke suddenly out of his communic. "Cut your speed," it said. "Say who you are and say it fast. You're in missile range."

Mason knew that voice well. Rather, Brond Holl had known it well. He spoke back flatly into the communic.

"Terran flitter, coming in. And a devil of a watch you're keeping to let me get this close, Hoxie."

A crow of surprise and pleasure came from the communic. "Brond Holl, by all that's holy! We got the flash that you'd broken out at Sirius, but we didn't think you'd ever make it here."

"I'm sure that broke a lot of hearts," said Mason sourly.

Speak like Brond Holl, think like him, be him—or you won't last an hour here at Quroon!

He swept in toward the single world of the green sun, cutting speed steadily until he was racing down past the two greenish moons toward the night side of the planet.

The lights of Quroon City, stretching away in a small and formless swarm, came into view on

the dark surface. Mason cut downward short of them, dropping toward the starport beacons.

On the starport, a score or more of ships flashed back the green light of the two racing moons. Mason's mouth tightened. It looked as though all the captains were in, and that should make things interesting.

THE FLITTER came to rest not far from the radar and missile-gun towers. Mason looked to the hand-gun he had taken off the crewman back at Sirius Sixteen, then cracked the airlock and stepped out.

He was used to strange star-worlds, and anyway the viridescent radiance of the two moons and the heavy, sweet and rotten smell that came from the jungle all around the spaceport were not new to him. They were in Brond Holl's memories, and he remembered very well the strange, polypous jungles of Quroon whose towering growths were halfway between plant and animal, like the sea-anemones of old Earth.

He remembered, too, the man who was coming toward him through the moonlight from the radar tower. An old Terran, with white hair and a face seamed by a strenuous and unvirtuous lifetime, his rheumy eyes now lighting up with welcome.

"So you made it after all," he crowed delightedly. "Well, well, things'll be a bit more lively at Quroon with Brond Holl back."

Mason gave him the scowl that he felt sure the real Brond Holl would have done. He said,

"What's the matter, Hoxie? Hasn't there been enough bloodshed lately to amuse you?"

"Ho, you're a rare young hellion, Brond," said old Hoxie, not at all offended. "I was just like you years ago—I'd take nothing from anybody. Those were the days when Quroon was fun."

"Listen," growled Mason, "don't you go arranging any fights for me just so you can enjoy watching."

"You've got me wrong, Brond," said Hoxie, in an injured tone. He took Mason's arm, starting back toward the tower, talking volubly. "I'm just glad to see you back, that's all. All the boys will be glad to see you back. Except maybe Fayaman."

He darted a sidelong glance at Mason as he spoke the name, a sly, quick look.

Beneath the radar tower was a ground-car and Hoxie led Mason solicitously toward it.

"I'm taking you into the City myself, Brond. My second will keep the radar watch. I want to see their faces when you show up."

"You didn't call Garr, then?"

asked Mason.

Hoxie uttered a nasal laugh. "No, *sir*, I didn't. I wanted it to be a real surprise."

As the car started forward, Mason urgently reviewed the knowledge that had come to him out of the tapes of Brond Holl's memories.

Old Hoxie was an ancient sinner who had always rather admired the tough, reckless Brond Holl.

Fayaman, a Draconid who had been drummed out of Draco's navy years ago, was Brond Holl's enemy to the hilt. There had been a quarrel between them once over loot—and Fayaman was not the type to forgive.

Garr Atten was a much more formidable proposition. Garr, who had been by tacit consent the leader of the captains of the Marches for years, had never had much love for Brond Holl either.

Mason turned his attention back to Hoxie. The old Terran was talking loquaciously as he drove down the road through the jungle. On either side of the passing car loomed up the strange polypoid growths, decked with cuplike leaves and flowers, swaying and writhing slowly in the moonlight. From their shadows came the multifarious sounds of small forms of life that he knew were as strange as the polypous plants.

"Garr's going in for trade, and

even work, now," old Hoxie was complaining. "A hell of a thing for Quroon to come to. Time was, there was fun and plunder here but now Garr raises the devil if anyone goes raiding—as you will maybe find out."

And again he gave Mason the sly, sidelong glance. But Mason refused to be prodded, his mind was too busy with his own problems. He had to find out if Ryll Emrys was here, but he couldn't ask right out.

"What's been going on since I left?" he asked Hoxie.

"That's what we'd all like to know, Brond," Hoxie answered.

"What do you mean?"

The old Terran looked at him shrewdly. "Garr's up to something, and won't say what. He's excited, and talks big about making the Marches a real independent kingdom. He says we're to hold off from any more raiding, and wait." Hoxie grunted. "The men are tired of waiting."

That meant little to Mason, and gave him no clue to what he wanted most to know. He tried again.

"Has anybody new come in since I left?"

Hoxie shrugged. "The usual people that get in trouble at home and have to run for the Marches—but nobody special. Except a fellow who got run out of Lyra for some-

thing, name of Chane Fairlie. He brought his woman along—and she's a looker. The boys all have their eye on her, especially Faya-man."

Mason didn't think this could be the fugitive Orion scientist.

"How long ago did Fairlie show up here?" he asked.

"Only a few weeks ago," Hoxie mumbled.

That didn't fit at all, Mason thought, so it could not be Ryll Emrys. It *could* be the secret agent from Orion, their ace V'rann whom they had sent after Ryll Emrys, but such an agent wouldn't encumber himself with a woman. Still he'd better take a sharp look at Fairlie.

THE LIGHTS of Quroon City rose up ahead of them, and the car entered the unpaved streets of the town.

Mason had been in many a strange city on far star-worlds, but never in such a one as this. Physically, it was unimpressive—a collection of one-story structures of black stone, built every which way along casually rambling streets, with the smaller dwellings extending away amid tall polyp-trees from the bright-lighted street that was the main axis. Here there were drinking-places, shops and dives to serve the most motley population that Mason had ever seen.

Human and humanoid, men and near-men from hundreds of star-worlds far across the galaxy, and women and near-women too. Hair and scale and feather, beaked faces and noseless faces and wicked but quite human faces. Primitive little humanoid aborigines of Quroon itself, big and furry white humanoids from cold planets who panted in the humid night, proud-crested men from the old races of Rigel who walked like tigers, lithe and serpentine men from beyond the Polar Suns who had never been sons of Adam, and all of them with two things in common—all walked erect on two legs and all had got into trouble somewhere else in the galaxy.

Speculative eyes of human woman, cat-eyes and pupilless round black eyes and blank, pale eyes that did not seem to see, stared at Mason as he and Hoxie got out of the car. He was known, and he heard the name of "Brond Holl" passing to and fro.

"Come on," said Hoxie, enjoying himself. "You came just the right time. The captains are meeting tonight."

"Why?" demanded Mason sharply.

"I told you they're tired of waiting for Garr to tell his plans, didn't I? That's why."

They pushed through the motley

crowd, and Mason let Hoxie lead the way to what appeared to be the biggest drinking-place in Qu-roon. But from the interior came no music or laughter—only the sound of an angry, bellowing voice. He went in, behind Hoxie.

The room was big and stone-paved and stone-walled, a black room whose shadows not all the suspended krypton-lights could dispel. There were tables grouped in a rough ring, and men and not-men at the tables, and others standing in a crowd around the walls, and all of them listening to the man who was speaking angrily to them.

It was Garr Atten who was speaking, and it seemed a little touching to Mason that Garr Atten should be trying to found a star-kingdom when his throne-room was a tavern drinking-room on an outlaw world.

"I'm damned if I don't give up and let you all go to the devil in your own way, if that's what you want!" Garr Atten was roaring.

He was a giant Hydran well past youth, redhaired and with a battered, bronzed face and tawny eyes that were flaming with leonine rage. He stood, great fists clenched, glaring around the crowd.

"I've told you that I've got plans, and you can trust me or not, just as you wish," he bellowed.

A handsome, pale man with

sleepy black eyes spoke up for the sullen crowd. "We trust you, Garr. But we'd like to know a little about it."

Mason's eyes flew to that speaker. He knew him very well indeed, from Brond Holl's memories. He was Fayaman of Draco, and he was a man to watch.

"Yes, there's your old friend," said Hoxie in a chuckling whisper. He added, "That's the new man, Chane Fairlie, beside him. Ain't that woman of his something? Her name's Lua."

Mason saw a man with the faintly bluish skin and blue-black hair of a Lyran, a tough-looking man with a square face. Behind him stood a Lyran girl, beautiful as only the blue-tinted women of Lyra were, her soft face anxious and half-fearful in expression as she listened to the rising clamor of voices.

A big Betelgeusan humanoid, a striking figure with his body-fur of bright yellow, was speaking. His enormous eyes were fixed on Garr Atten, but the words he spoke were mild.

"Now, Garr, when you said you could make the Marches a free kingdom, we all said we'd follow you. And we will."

A tall humanoid captain from Rigel, his feathered crest ruffed erect, spoke up. "It's just that

we're all tired of not doing anything."

Garr Atten was not placated. "What do you want to do—go raiding into Lyra and Cassiopeia again?" he roared. "Bring a half-dozen star-kings down in full force to smash us? I tell you, times have changed. You try that, and you'll end up like—"

Mason stepped out from behind the men in front of him, at that moment. The movement caught Garr's eye. The big Hydran stared at him, his mouth opened in surprise.

"Like Brond Holl?" said Mason pleasantly. "Is that what you were going to say? Your moral example has gone sour, Garr. The bad penny has turned up again."

He heard the buzz of voices, the startled exclamations, but paid no heed to them. He had to play Brond Holl to the hilt if his true identity was not to be suspected, and before these tough star-captains of the Marches there was only one way to play it.

Fayaman, his white face suddenly a shade whiter, was glaring at Mason. With a smothered oath, he jumped to his feet. His hand snaked toward the missile-pistol hidden inside his shirt.

Mason had expected something like that, and already had his hand on the hilt of his own missile-pis-

tol. He said evenly,

"Try it, Fayaman. I want you to. I'm pretty sure you tipped off Cassiopeia to capture me, and this will give me all the excuse I need."

There was a petrified silence, and then Garr Atten strode furiously out with his own weapon in his hand.

"Either one of you starts a fight, I'll kill the survivor," he bellowed. He looked bleakly at Mason and said, "Have you any proof that Fayaman did that?"

"No one else here hated me enough to do it," Mason snapped.

"That's not proof," said the giant Hydran. "So you've come back, Brond. I won't say I'm glad, you always were a hell-raiser, but the Marches are free to any fugitive as they always have been. But you bring any trouble here now when we're going to pull off the biggest thing in the galaxy, and it'll be the end of you!"

CHAPTER IV

MASON STOOD SULLENLY, as though debating in his mind whether to challenge Garr Atten or not. Actually, he was relieved that the Hydran captain had prevented a fight. The last thing he wanted was to get side-tracked into a row with Brond Holl's personal enemies, but he had had to act as the real Brond Holl would

have done.

He took his hand off his weapon, and said sulkily, "I'm not bringing any trouble, but I've still got my ideas about who made me rot a year in Sirius Prison."

Garr Atten addressed him with grim emphasis. "Brond, you get it into your head right now that things have changed. You go off on another looting expedition, and I'll send a warning to all the star kingdoms myself."

"What are we to do, then—take to farming?" growled Mason.

"There's plenty of trade with the humanoids out here in the Marches—use your ships for that, not for plundering," said Garr.

Old Hoxie raised his nasal voice. "Seems like I've lived past my time, when the captains of the Marches ain't allowed to take a little loot where they find it."

A murmur of agreement went up from many in the big room. And a flaming spark came into Garr Atten's tawny eyes.

"You fools! We've got a chance to make ourselves a real star kingdom, not a runaway's hideout. The biggest chance anyone ever had. And you'd throw it away for a little loot. I say, No."

"You still haven't told us how you're going to accomplish all this," grumbled one man.

"You'll know when there's no

danger of any of you spilling it," Garr answered roughly. "Till then, you wait."

They were not happy, Mason saw, these hard-bitten outlaw captains. But also none of them felt like challenging the redoubtable Hydran leader right now. He was forcing them to take his plans on trust.

What *was* Garr Atten planning? How could he expect to establish a kingdom that the galactic governments would recognize? Mason's brain began to turn over fast. It might—it just might be, that he had here a clue to the object of his mission.

The captains were turning away, the gathering breaking up. Mason strode across the room, ignoring the hostile stare of Fayaman, and went up to Garr Atten.

"I've got some news I think you ought to know," he said.

The Hydran scowled at him. "What?"

"I can blab it all over Quroon at the top of my voice if that's what you want," Mason said. "Is it?"

Garr Atten turned dull red in the face. "Brond, you've been asking for me to break your neck ever since you got here. Keep on, and I'll oblige. All right, come on and tell me your precious news in private."

He headed for the door. Mason followed him, noting that Fayaman was still watching, with an expression that seemed strangely familiar to Mason. He tried to remember where he had seen it before, and out of his personal memory banks there popped the image of a huge gray cat fixing that exact hungry and intense stare upon a young rabbit in the grass. He had a moment of hot irritation. Sooner or later this cat was going to spring and he would be forced to do something about it, no matter what vastly more important things he was concerned with. He wished Fayaman at the figurative bottom of the Coalsack.

He did not see Fairlie and the girl Lua until he was outside, and then he saw them going away down the street arm in arm, the girl looking at Fairlie as though hanging on his every word, her hips moving with provocative grace under bright silk, her long hair swinging down her back. Mason envied Fairlie briefly, and then forgot them both for the moment.

Garr Atten led the way through the swarming street. It was a way Brond Holl remembered well, past the glaring lights with the stream of human-inhuman-unhuman faces moving under them like the many colored masks of a strange chorus in a play, past darker places where

the windows of the houses were shuttered and the lights discreetly dim, past a belt of the tall and grotesque polyp trees that in their strange semi-animal way writhed away from each passerby, their great sweet-stinking pennants of bloom nodding and shaking.

THE PLACE they went to was a sprawling place of black stone set by itself at the edge of town in a polyp grove. The jungle seemed to claw at it with thick fingers. Millions of tiny night-voices of minute creatures clamored at it from every creeper and grass-blade. Mist rose from the ground and tried to hide it in a silver veil. But it was there, looking as stubborn and immovable as the man who had built it.

The servants who let them in were familiar to Brond Holl, too, but Mason could not repress a personal quiver of distaste. These native humanoids of Quroon were more -oid than human, little scamp-ering creatures with prominent teeth and unpleasantly naked skin. Garr Atten sent them off and led Mason into a big bare room, quite austere-ly furnished in comparison with the luxury the other captains indulged in.

"All right, Brond," he said. "We're alone here. What is it?"

The screek and shrill of the little

insect voices drifted in from the night outside, riding the currents of warm air through the windows. Mason sweated. He wiped his sleeve across his forehead and said,

"I thought you might be interested to know that there's a full squadron of somebody's cruisers hanging in Dumbbell Nebula. I almost rammed them in the cloud, coming through."

He startled Garr Atten and before the man's usual tight control took over, he said fiercely, "By God, if Orion—"

He stopped there suddenly.

"Why," asked Mason innocent-ly, "would Orionid cruisers be sitting in the nebula out there with their eyes full of dust? What are they waiting for—a signal to attack?"

"Maybe," said Garr Atten curt-ly, thinking many thoughts very rapidly as he walked up and down. "Maybe."

The hot damp air was heavy in Mason's lungs. His nerves pricked him with sudden needles. The monotonous voices of the insect nightsingers outside rasped his ears. Too much, too little—one word, a false look, a mere breath could lose him both his answer and his life.

He made his voice harsh, chal-lenging—Brond Holl's voice.

"Why did you say *Orion*? You

didn't even have to stop to think. What do you know, Garr, that the rest of us don't know?"

Garr Atten looked at him heavily, preoccupied. "Nothing I can tell you now. You'll have to wait—"

Mason walked up to him. "Wait," he said. "That's fine. Me and the rest of them, we wait with a squadron of cruisers hanging over our heads until you get ready to tell us what they're there for. I don't think the others would buy it, Garr. I think they'd want to know how far their necks are stuck out, and what for."

Something quick and quiet happened to Garr Atten's face. It made Mason's back feel cold in all that sticky heat.

"Don't try to blackmail me, Brond," he said. "I don't like it. I want you to keep this information from the others, yes. But you're not going to use it to force me to tell you anything."

How far do I push it? Mason thought. How far would Brond Holl go if I were Brond Holl and thinking only of my own neck and not of what I'm really thinking about?

Damn the heat and the crickets, or whatever the nasty little brutes are on this stinking world—

"I'm not going to trust my safety to you without a word of explanation, either," he said to Garr At-

ten. "Those cruisers—"

He stopped in mid-flight, listening.

Listening to something—

Listening to nothing.

The night-singer insects had all stopped singing. Beyond the open window the jungle-garden was silent, as though it held its breath.

"Those cruisers," Mason continued smoothly, "are a long way off." He moved to a writing-table in the corner. "I can make you a rough chart of their position—"

He saw a puzzlement, and then a sudden understanding, in Garr Atten's eyes. "Yes, I wish you'd do that," Garr Atten said, and leaned over his shoulder and watched with absorbed interest as Mason wrote, *Someone's in the garden—*

Garr Atten reached out and touched the lamp. The room turned black. In the same instant Mason heard Garr Atten whisper, "Move!"

But he was already moving. He flung himself halfway across the room and before he hit the floor a tiny star, intense and blinding as a nova, flared briefly by the writing table and vanished, taking with it most of the table and a part of the neighboring stone wall—all without so much as a whisper of sound.

Energy-missile, lethal and silent.

MASON SCUTTLED the rest of the way across the room,

drawing his own weapon. There was the light *spung!* of an ejector mechanism and then a second star burst and died beyond the window. Garr Atten, firing back. He was unhurt, then. Good. The assassin had missed—

Good. Yes, indeed. Good for Hugh Mason, too, because they two had stood together at the table and the energy pill might have been aimed at either one of them. So who had fired it?

Fayaman, wanting to get Brond Holl?

One of the captains, wanting to get Garr Atten out of the way, with his insistence on a new regime of law and order?

Or someone by the name of V'rann, wanting to get a masquerading spy of Earth by the name of Hugh Mason?

Mason scrambled out into the hall, with Garr Atten so close on his heels they almost tripped each other. Behind them in the room there was sudden light, and as they ran along the hall the door they had just passed through vanished in a noiseless flare.

"The other side of the house," said Mason. "Get out and circle around—"

Garr Atten gave him an odd look, but he said nothing. They ran through a longish hall where half a dozen of the humanoid servants

had made themselves into a tight ball in the corner, their alarmed little faces peering. They went out onto a terrace of black stone slippery with dew, and then circled back around the corner of the house. The little singers of the night were still crouched silent among their leaves and grass-blades, waiting for the giants to stop shaking their world. The air was rank with that smell of mingled life and death common to jungle no matter where you find it. And there was death lurking somewhere in the shadows under the tall polyp trees, where the greenish moonlight lay mixed with mist like sweet poison in a cup.

Garr Atten gestured silently and they separated, each one now his own citadel of defense, creeping in shadow while the cold dew soaked into his garments, listening, halting, starting at the writhing quiver of a polyp tree he passed, darting swift as deer across the moonlit places with every nerve taut and screaming in the expectation of sudden light and the impact of destruction.

They stalked someone, and the someone stalked them.

The wall of the house, with the window by which the assassin had stood, showed black and bare in the moonlight. Mason stood in the shadow between two towering polyp

trees, not close to either one of them, and listened. As he listened, he wiped his hands on his coverall to get the greasy sweat off them, shifting his weapon from hand to hand. His hands were cold, and so was the rest of him despite the humid warmth.

There was a deep silence, and it was as though this whole world had been dead for a million years.

Then of a sudden Mason heard the stir and murmur of a polyp tree a score of yards from him, making a vague sound on the air as it writhed and twisted.

Instantly, knowing that the sound meant that someone had slipped close to the grotesque tree, Mason dived away from where he was and hit the wet grass a dozen feet away.

There was a burst of silent light where he had been.

He rolled over and triggered a silent shot with his own missile-pistol, at the place where the polyp tree had stirred.

His missile hit the tree, exploding in another soundless star. But there was a man close to the tree, a man whose weapon was raised for another shot at Mason, and the star touched his side.

Darkness again, and a sound like a grunt, and then the noisy crash of the severed polyp-tree falling. Mason scrambled to his feet and

ran forward. With his free hand he snatched out his pocket-light and flashed it.

Chan Fairlie's body lay there, face up, his eyes wide and sightless, one hand still clutching his gun. The other hand, and arm, and part of his body, had been touched by the star and weren't there.

Mason's thoughts raced as he looked down at the stony blue face of the dead Lyran.

Had Fairlie been the agent from Orion? Had he been—V'rann?

"If he was," Mason thought, "he'd suspect that Brond Holl's timely escape might be a trick to get a disguised Terran agent here. But he brought that woman here with him, and that doesn't fit—"

His mind leaped to another thought. That Lyran girl who had come to the Marches with Fairlie—she was still alive. He could find out from her—

He spun suddenly around as he heard a step. His light caught the towering figure of Garr Atten, coming between the writhing trees.

"I thought he'd got you," said Garr. "Who the devil—" Then he was silent a moment as Mason swung the light onto the dead face. Finally he said, "Chane Fairlie. But he's been here only a few weeks, why should he try to—"

He broke off and asked Mason keenly, "You never knew him be-

fore you came here, Brond?"

"No," answered Mason truthfully.

Garr Atten nodded. "He showed no sign of recognizing you tonight. So he couldn't have had any grudge against you. It was me he was trying to kill."

"If he's only been here a little while, why should he?"

Garr said somberly, "He could have been put up to it by one of the captains. By someone who wants what I've got."

"What *have* you got, Garr?" Mason asked boldly.

The Hydran looked at him somberly. "You kept me from getting killed in there, Brond. I owe you something. I'll tell you."

His big frame seemed to loom gigantic in the green misty moonlight, and his voice throbbed harshly.

"I've got a man. Brond. A man who came here while you were in prison—and who holds the secret of a power such as the galaxy has never seen."

Mason kept his face unmoved, but his brain shouted, *Ryll Emrys!*

"And with that power," Garr Atten said, "I can make the Marches a free kingdom. I tell you, I can smash all the star-kings like eggshells if they try to stop me!"

A cold feeling came back over Mason, as he looked at the craggy

face dark with passion and purpose. He remembered Oliphant's dying warning of a weapon of cosmic power, and it was as though for a moment he saw the galaxy and all its empires and star-kingdoms on the brink of an abyss.

"But there's little time," Garr Atten said tightly. "Too little! With Orion's cruisers watching out there, and my own captains against me, I've got to strike now or never."

CHAPTER V

THE PLANET was rolling toward dawn. Already a dimming had crept over the blazing splendor of the cluster-sky, the hosts of stars paling as a sickly green light well-ed up from the horizon. Then there was an upflinging of spears of green radiance, and the emerald sun rose and glared a hot light over the polypoid jungles around Qu-roon City.

Garr Atten's humanoid servants had taken the dead man away for burial, chattering among themselves like apes. Garr himself paced to and fro in the big bare room that had nearly seen his death, and Mason watched him.

"They've been demanding and demanding to know what I plan," muttered Garr. "All right, I'll tell them. You can pass the word that

the captains are all to meet here this evening."

Mason was eager to go, for he had his own plans and he needed to be fast. He started toward the door.

"Remember, you're to say nothing yet about those Orion cruisers," rumbled the Hydran.

Mason nodded. "I won't."

Garr Atten stared at him. Suddenly he came and stood in front of Mason and looked searchingly into his face. He said,

"In some ways, Brond, you're no damned good. But I don't remember you as a liar. Will you tell me something?"

"What?"

"This," said Garr. "One true word. Are you for me or against me?"

Mason felt a queer emotion. He was on a mission for the Terran Empire, for the peace of the galaxy, and he would break men like matches to accomplish it. This Hydran was an outlaw, and a dreamer, but he was also a man.

"I'll give you a true word, Garr," he said. "I think you're fit to be a star-king, and I'm not against you unless I have to be."

Garr grunted. "A man who asks for truth is a fool. I was almost ready to trust you completely. Well, pass the word to the captains."

Mason went through the dazzling green sunrise back to the main street. There was still noise and activity in the drinking-places, and he looked into them until he found Hoxie.

The old Terran outlaw's eyes lit up when Mason delivered Garr's message.

"I'll sure tell all the boys," he said. "So Garr's finally going to tell us something, eh? About time."

"Where does Chan Fairlie live?" Mason asked.

Hoxie grinned. "So you're after that woman of his too? Well, that ought to make Fayaman love you even more—like I told you, he's always hanging around her."

He told him, and Mason went away from there. He went to one of the streets of black stone houses and huts that rambled casually toward the jungle, and he found Lua, the Lyran girl, sitting in front of one of them carefully combing her long black hair.

The grotesque green polypoid trees swayed and writhed away from him as he came, and she looked up at him swiftly and startledly. Her dark eyes were wide in her clear, faintly blue face, and the striped silk pants and jacket she wore were tight on her, and Mason thought that old Hoxie was right and that this was a woman there was bound to be trouble about. He

meant to find out if she was anything more than that.

"Chan Fairlie's dead," he told her, hitting her between the eyes with it because he didn't know any other way.

She leaped to her feet and stood, her face shocked and unbelieving. She looked at him, for a long moment, and then said,

"Who killed him? You—"

"Yes," Mason said. "He came to assassinate Garr Atten, and would have killed me into the bargain, and I had to—"

He got as far as that, and then he was too busy to say more, for she was at him like a wildcat, her fingers raking his face, while her other hand grabbed for the weapon at his belt.

He stopped that, and pinioned her arms between his hands, and shook her. He said roughly,

"Murderers are liable to get killed. You ought to have thought of that before you came here with him."

Lua suddenly stopped struggling, and burst into tears. "What will become of me here now?"

Mason said acidly, "I'm glad your grief isn't so permanent that you can't think of yourself."

He let go of her, and stepped back a pace. And the Lyran girl was now neither a sexy piece nor an angry wildcat, but just a scared

girl, her cheeks smeared with tears and her mouth quivering.

"Who was Fairlie?" demanded Mason. "Who was he *really*?"

SHE STARED at him. "I don't know what you mean. He came to Linnabar, where I was dancing in a starport pleasure-palace. He wanted me to go with him, he told me he was a star-trader and owned a small ship. I went. Then later he admitted that he was an outlaw, that he'd stolen the little ship, and that he was on his way to the Marches where the law couldn't reach him."

It could all be true, Mason thought, but if Fairlie had been just an outlaw fleeing to the Marches, why had he tried to kill Garr?

On the other hand, if Fairlie had been V'rann, the agent of Orion, he could have posed as a Lyran outlaw and picked up the girl as a piece of protective camouflage. And V'rann would have had good reason to suspect that "Brond Holl" was a Terran agent, and want to kill him.

"What will become of me now?" Lua asked dolefully, again.

Mason grunted. "I don't think you'll find it too hard to find another—protector, here."

"Fayaman of Draco has been nice to me," said Lua, a thoughtful look in her eyes.

Mason told himself disgustedly that she was a cheap little tramp, but he stuck to his main problem of establishing Fairlie's identity. Of course if Fairlie had been V'rann, his blue Lyran look had been all disguise, but modern make-up tricks were so good it took laboratory techniques to detect them. He hadn't had a laboratory, and he hadn't even had the time, since Garr had had his servants bury Fairlie at once.

Mason stepped toward the open door of the small black stone house.

"What are you going to do?" asked Lua uneasily.

He didn't answer her, but went on in and left her looking after him half-fearfully.

Only three of the shadowy, dank rooms of the stone house had been lived in. The kitchen was a mess, and he decided that cooking and housekeeping were not among Lua's talents. But in the sleeping-room, her tawdry silks and bangles were laid out neatly with loving care.

He rummaged swiftly through Chan Fairlie's effects. They were just the sort of stuff an outlaw on the run would take with him—spare weapons, charts, bottles, and some tri-dimen photos of girls that should have made Lua jealous if she had seen them. There was not a thing here to show that Fairlie *had* been V'rann of Orion. On the

other hand, if Fairlie *had* been V'rann, an ace secret agent like that would be too clever to carry anything around that would give him away.

As Mason stood frowning, he suddenly heard the sharp voice of Fayaman from outside.

"Lua, I've just heard that Garr Atten is finally going to tell us his plans today, and—"

Lua's voice, rising to shrillness, interrupted. "Chan's dead! Brond Holl killed him, he said. And he's in there now!"

Mason strode out into the dazzling green sunlight. With an oath, Fayaman turned from the girl, his hand darting toward the front of his shirt.

Mason said, "I'd just like to know, Fayaman, how surprised you really are by that news. If you put Fairlie up to trying to kill Garr, you can't be surprised at all."

"What the devil are you talking about?" demanded Fayaman, his marble-white face tight and dangerous.

"He said Chan tried to kill Garr," wailed Lua. "He said that's why he killed Chan." Tears started again in her eyes as she added, "And he shook me."

Fayaman hesitated, not grabbing for the weapon inside his shirt. There was a shade of indecision in his face now.

"It's true," Mason nodded. "Garr doesn't figure that Fairlie, a newcomer, would think up the assassination himself. Garr is very keen to know who put Fairlie up to it."

Fayaman's hesitation deepened, and slowly he took his hand away from his shirt. After a moment, he said,

"I see. You make a big play of saving Garr, to get in close with him. You're clever, Brond. The trouble is, you're never quite clever enough."

"I wasn't, when I went off raiding and left you behind to send out the tip that got me captured," Mason said harshly. "I won't give you a chance like that again. I'll make sure of you before I go."

Fayaman smiled thinly. "Any time, Brond. Any time at all."

Mason went past them, and noticed that already Lua was snuggling against Fayaman like a puppy trying to pick up a new master.

He didn't think he had got very far. He would have liked to believe that Chan Fairlie had been V'rann, because that would mean V'rann was dead, but he had no proof of it at all. And if it wasn't true, if V'rann was someone else here, he was walking on a live mine. An agent of Orion here, and a squadron of Orionid cruisers waiting out in the nebula, could add up to hell breaking loose when the missing

Ryll Emrys was located.

He thought about it, and went back to find Hoxie again. The old Terran had had news by now, and he hailed Mason with a crow of welcome.

"So you killed Chan Fairlie! Well, well, things are livening up at Quroon again. I guess you and Fayaman will be having it out for that wench now."

He clapped Mason on the back admiringly. "Come on home with me, Brond. You've been gone so long your house is a wreck by now. I've got a few good bottles."

MASON WENT, and sat in Hoxie's house drinking with him until his head buzzed. He forced himself to think clearly, for he had to pump Hoxie without arousing suspicion. He wanted badly to know what other newcomer to the Marches might possibly be V'rann.

"No, we don't get the bold and lusty boys we used to get here," Hoxie said regretfully, wiping his mouth. "Garr's too finicky, he don't want murderers and such. As if a few honest murders mattered."

"You mentioned a chap named Zin Diri who came and then left," Mason reminded.

"He wasn't any good outlaw material," said Hoxie. "A thin, twitchy fellow who said he was from Argo

though he didn't look it to me. But that was months ago—Garr gave him a lift to somewhere else."

That didn't sound as though it could be V'rann, thought Mason. But he suddenly realized that it could have been Ryll Emrys.

But V'rann? Mason realized that he was obsessed with an uneasy conviction that the Orion agent was still alive. And with Garr Atten about to reveal his secret within a few hours—

A thought came abruptly to Mason. If V'rann was here, hiding in some guise, there was one way he *could* be spotted, after the meeting of the captains with Garr this night. V'rann would surely have a way planned to learn what Garr said, and V'rann would act swiftly and that was his, Mason's, chance.

Mason decided it was the only idea he had, and he might as well follow it. To avoid further drinking with the hard-headed old Terran, he pretended to go to sleep.

"Prison must have weakened you down, to pass out so soon, Brond," he heard Hoxie saying, and then his pretended sleep became real.

Hoxie, looking no whit the worse, woke him hours later. "Time for Garr's meeting. You sure don't want to miss that."

The green sun had set and the hosts of stars were leaping out again in the darkening sky when

he and Hoxie came to Garr Atten's house. Armed men were posted here and there outside it, but let them through.

"Guess Garr don't want anybody but us to hear his big secret yet," mumbled the old Terran.

Mason thought he was right, and he also thought that if V'rann was living he'd not be stopped by a few guards from hearing.

In the big, bare room, Garr Atten stood and faced his captains grimly. They were all there, human and humanoid, and they were silent but their faces were keen with excitement. And the eyes of Fayaman were bright as those of a questing hound.

Garr's voice was bitter. "You wouldn't trust me, and so I've got to take the chance of losing everything by a leak of information. All right, it's what you want."

He looked them over somberly before he spoke again. "For years, we've had the dream of making the Marches a free and independent kingdom. It's never been possible because if we proclaimed a free kingdom, all the star-kings on this side of the galaxy would pounce in to stop us. And we wouldn't have the strength to repel them. But if we had a weapon strong enough to hold them all off, we *could* make the Marches a nation."

He paused again, and then said,

"A few months ago a refugee named Zin Diri came here. He seemed a decent man and I gave him refuge. He was grateful. He was so grateful that after a while he began to worry, and finally he told me something. He said his real name was Ryll Emrys, and that he'd been a scientist in the Empire of Orion. He said he'd made a far-reaching scientific discovery, but that he'd been horrified when the Orionids got wind of it and wanted him to adapt it as a weapon of conquest for the King of Orion. He was so horrified, Ryll Emrys said, that he fled secretly and finally made it to the Marches.

"But now he was worried. He felt that sooner or later, Orion would find out where he was. And when they did, they'd come in force to get him, and would smash all of us to flinders when we tried to oppose them. He was grateful for the sanctuary we had given him, and was agonized that his presence here might mean doom for us."

Garr Atten's tawny eyes flashed. "I saw our big chance, then. I told Ryll Emrys, 'Give us this new weapon of yours. If it's as powerful as you say, we can use it to hold off Orion or anyone else'. But he recoiled from that idea at first. He said he'd run away so the thing never would be used for war, he couldn't do it. I pointed out to him

that while Orion would use the thing for galactic conquest, we only wanted it to defend ourselves and establish the Marches as a kingdom that could be a refuge for other people like him.

"That finally decided Ryll Emrys. He agreed to build the thing for me. It had to be on an uninhabited world, though. So I took him deeper into the cluster, to that region where the drift is so bad that Devil's Channel is the only way through it. There's a dying star-system in there beyond the Channel, with no life on any of its planets, though to judge from the ruins on the innermost world, it had humanoid life once. Ryll Emrys set up his work there. I've gone in to him many times, taking him the materials he needed. He's got *one* weapon ready—but we'll need more, many more, before we can face the border star-kings, not to mention Orion. That's why I need all the time I can get."

Mason, like the others, had listened in tense silence. But now he heard Hoxie ask the question that was in the minds of all the captains.

"But what *is* this weapon, Garr? What was it that Ryll Emrys discovered?"

Garr answered slowly. "He discovered something scientists have been looking for since the old Earth days. He found a way to neutralize

external gravitational pull, in any or all directions."

They looked blank, and Garr Atten added a pregnant sentence.

"He can do that on a planetary scale."

MASON WENT COLD. The nightmare possibilities of such a thing rushed upon his trained mind, while the outlaw captains were still staring puzzledly at Garr Atten.

"But what does it *do*?" demanded Hoxie.

Garr Atten's voice rumbled like distant thunder. "Can't you understand? Neutralization on a scale like that can eliminate all pulls on a planet except in one direction. You can move a planet in any course you want—it'll *fall* in that direction, faster, and faster."

His face was flaming. "Do you get it now? Ryll's apparatus makes that dead planet a missile. If we build the same apparatus on other dead worlds, we'll have as many planetary missiles as we want. And will the border star-kings or the King of Orion himself come to crush us, when we have fists that can smash star-systems?"

Mason felt aghast. He had utterly underestimated the potential of Ryll Emrys' mysterious discovery. He had never expected a thing of incredible possibilities for destruc-

tion such as this. No wonder that Janissar of Orion had sent a squadron across the galaxy, to wait and spring and snatch a thing of such awful power.

But the outlaw captains were flaring with the same excitement that blazed on Garr Atten's face. Shouting voices filled the room. Only a few faces had a tinge of awe, of dread.

"By all the gods of Rigel, with a thing like that we could take over the galaxy!" cried Shaa.

"No," said Garr Atten. "You can forget that idea. Most of us are here because the damned grasping star-kings' ambitions drove us out one way or another, and we're not going to become like them. I swore to Ryll Emrys that I'd only use it for defense, and that goes."

His eyes swept them fiercely. "Now listen to me. I'll go at once to consult Ryll about the men and materials we'll need to build the thing on more dead worlds. We'll need all the time we can get, to do that. If one of you blabs this thing in the meantime, I'll kill him. Understand?"

They left the house an hour later, a taut, excited group. Mason was among the first out, and instantly he slipped away in the humid darkness and turned down a side way and started running.

He felt as though he was running

a footrace with cosmic disaster. The stars of the cluster blazed over his head. And when he thought of what was on a dead world amid those stars, the threat to galactic peace that was hidden there, he ran faster through the dark back streets to Hoxie's dark house.

He had noted when they left that the old Terran's battered jet car was outside the house, and he prayed that it might still be there. It was, and Mason jumped in and sent the car hurtling out of Quroon City, running without lights by back streets until he reached the jungle road that led to the starport.

He kept looking back, but there was no one behind him yet. There would be someone soon, he thought, if V'rann was still living. The secret had been told, and the first thing V'rann would do would be to send a message to the Orionid Cruisers out there in Dumbbell Nebula. And he had found out from Hoxie that there was no long-range communic equipment in the town itself, so V'rann would have to come out here to use the communic of a ship or of the radar tower.

Mason pulled off the road and stopped the car amid the dark polypoid trees, when he reached the starport. He got out, and drew his missile-pistol, and crouched down in the shadows just beside the star-

port edge.

He waited.

The big ships out on the tarmac glittered brightly as two jade-green moons came chasing each other up over the horizon. The lights up in the radar tower shone steadily. There was no sound except the night-singing insects of the jungle, coming from everywhere but not from close by him.

Then there was another sound, and Mason tensed. It was the purr of a motor, coming down the road from Quroon City.

Its lights flaring, the car roared past him and raced out onto the starport.

CHAPTER VI

MASON DARED not shoot for he could not see who was in the car, and it might be Garr Atten. Garr had said that he was going at once to see Ryll Emrys. He dared not take the chance.

Instead, Mason ran out onto the tarmac after the car. It was racing down a long line of the outlaw starships, and turned out of sight between two of them. Mason's feet pounded the tarmac hard, as he sprinted along beneath the looming flangs of the ships, their grim missile-launchers protruding from them to catch the moonlight.

He ran between two of the

great craft, and then he saw the car. It was parked, with lights out now, beside a ship. Mason knew that ship at once, from the rocket-blast insignia picked out upon its bows. He knew it from the memories of Brond Holl, who had had every reason to remember that particular craft.

Fayaman's ship.

Was Fayaman really V'rann? It couldn't be.

It could very well be. More than one empire's intelligence knew the tricks of disguise and impersonation. If he, Mason, could be Brond Holl, the ace of Orion might just as likely be Fayaman.

He ran up to the ship. The airlock door was closed and locked, and he tugged at the handle in vain.

Mason, desperate as the moments ran away, leaped back a little. He triggered fast, and three quick silent stars of white light burned, and when they went out the airlock was gone and part of the metal wall around it.

He plunged forward, through the gaping opening.

The lighted main lateral companionway was right in front of Mason, and as he leaped in through the jagged wide opening he saw Fayaman coming running down the steps. His white face was very deadly, and his weapon was in his hand and they both shot at the

same time.

In their haste, both missed. Fayaman's missile-pellet went right past Mason's head and on out into the darkness through the opening.

But Mason's missile, grazing past Fayaman, struck the wall beside him.

The silent white star blazed exultantly and wrapped Fayaman in a halo of radiance, and he fell.

There was not too much left of him when Mason went forward and looked down at him. Suddenly he looked upward. He had heard something.

The murmur of a voice, up in the communic room.

In agonized haste, Mason dashed up the steps. He heard the voice more clearly, and he knew it now, and it was speaking very rapidly of a dead world and the way to reach it.

He burst into the communic room and it was Lua, the Lyran girl, who was talking fast into the mike of the long-range communic.

Mason grabbed her, and reached with one hand and shut off all switches, and then swung Lua around to face him.

She laughed in his face. "You're a bit too late. I got through to the squadron."

She was not any longer the half-scared girl he had talked to that morning. The soft, timid look was

all gone from her, and her face was as keen and ruthless as a beautiful sword-blade, and her eyes had nothing but mockery and contempt for him.

Mason knew now, and he whispered her name.

"V'rann."

She laughed again. "Yes, Terran. I don't know *your* name, but when Brond Holl broke prison so providentially I suspected a Terran agent would show up here wearing his face. And you confirmed my suspicions this morning."

The mockery in her eyes deepened. She was a secret agent and she had crowned her career with its greatest exploit, and in the blaze of her triumph neither the deaths of two men nor her own possible fate mattered one little bit to her.

"You never thought that Orion's ace agent could be a woman, did you?" she taunted. "You suspected Fairlie, but not me. Why, man, Fairlie was only an underling obeying my orders. And bungling them, too—as he did when I sent him to kill you and Garr."

Mason said slowly, "And Fayaman knew who you were, and was in on it with you."

"Fayaman," she said scornfully, "was a fool. It was easy to win him over by promising that Orion would give him a kingdom here if we got Ryll Emrys. He actually

believed it!"

"You're happy, aren't you," said Mason. "You know what you've maybe turned loose on the galaxy, and you're happy about it."

"I know that it will make Orion supreme and nothing else matters!" she flashed.

THERE CAME into the ship from outside a throb of racing motors, growing rapidly louder.

"That'll be Garr and the rest," Mason said. "You should have known the radar tower would hear your message, and call him."

She shrugged. "I did know it. I never expected to get away. But of course I had to tell Fayaman I'd use a secret wave that wouldn't be heard. He believed that too."

Mason's hands tightened on her arms, and she looked at him with cold amusement. He said grimly,

"Don't be too happy, V'rann. That squadron of Orionid cruisers has quite a way to come. We may do something before they reach Ryll Emrys."

The mockery left her face at that, and a sudden alarm and ruthless purpose shone from it.

"Oh, no," she said. "Whatever clever idea you have won't work, once I tell Garr and the others that Brond Holl is a Terran agent."

The roar of motors was now loud outside, as the cars pulled up be-

side Fayaman's ship. There was a rush of feet below.

"I was thinking of that," said Mason.

He drew back his fist and suddenly hit her on the chin, hard.

V'rann's eyes glazed and she sagged against him and he lowered her to the floor. There was an angry, excited shouting and then Garr Atten, weapon in hand, came into the communic room with Hoxie and Shaa and a crowd of others behind him.

Garr's face was terrible. He looked at the unconscious girl and then at Mason, and he said,

"Radar tower called me about that message she got off. Then she's an Orionid spy?"

Mason nodded. "Yes. And she pulled it off. Right now, the Orionid squadron that's been hiding in Dumbbell Nebula is on its way to that dead planet and Ryll Emrys. Fayaman told her at once."

Garr's mighty shoulders sagged, and a dull look came over his face. He stood, the weapon in his hand hanging limply. The outlaw captains looked from one to another with stricken eyes, and nobody spoke at all until old Hoxie's nasal voice broke the silence.

"Then that's goodbye to our super-weapon and our star-kingdom."

Mason went up to Garr Atten.

He spoke to him and his voice had the lash of a whip.

"It's maybe just as well," said Mason. "The devil of a star-king you'd have made, when you give up this easily."

Garr raised his massive head and a leaping flame of rage was in his tawny eyes. He half-raised his weapon, and then his expression changed and he looked at Mason with narrowed eyes.

"We're nearer that dead planet than the Orionid cruisers are, by a long way," said Mason. "We've almost as many armed ships here as they have. We could give them enough fight to hold them up while we take off Ryll Emrys and destroy his apparatus so they can't get it."

Mason felt that it was a desperate gamble, but if it succeeded he might be able still to get Ryll Emrys away from the Marches and suppress a secret that could rip the galaxy asunder.

But Garr Atten was no puppet to be manipulated by any man. His moment of shock and dismay had passed.

"We can do better than that," he said. "Devil's Channel is the only way through the drift to that planet. We can hold them in there long enough for Ryll Emrys to use his apparatus and move the whole planet out of there, hide it deeper in the cluster where they'll never

find it."

His voice suddenly blared loud. "You've all been spoiling for action. Here's your chance for a bellyfull of it. If we hit that squadron hard, we save the thing that'll someday make the Marches a free kingdom. How about it?"

There was no doubt about it at all, among the human and humanoid captains of the Marches. Their voices rang fierce and instant affirmation.

"All right, get your crews together on the double," said Garr. "I want every ship off here in an hour. Get going!"

They got going, with a rush of trampling feet and a yelping like wolves let loose to run.

Hoxie looked down at the unconscious V'rann and said, "How about this devil's wench? She's mighty pretty, but so's a snake."

"Time enough to deal with her when we get back—if we do," said Garr. "This ship can't go anywhere with its airlock blasted. Lock her up in a cabin and put a guard outside it."

MASON FELT a relief when he saw V'rann, still out cold, tossed into a bunk in a windowless cabin, and the metal door locked upon her. She might come to later and yell her head off about Bronnd Holl being a Terran agent, but by

that time they'd be gone and the decision would be coming up.

Very quickly the whole starport swarmed with cars and trucks and running men and humanoids, and motley women screeching with excitement and fear. Lights flared, and voices bawled orders through talkers, and then finally the take-off sirens let go in frantic warning and Garr Atten's ship led the way up off the planet.

Mason was in the control-room with Garr. So was old Hoxie, his face gleaming with vulturine happiness at the prospect of a fight. But there was no happiness in Mason. The chances of beating back a naval squadron did not seem good to him, and even if they did it the power of Ryll Emrys would swiftly become known and would be a prize that half the star-kings in the galaxy would grab for.

Twenty-three ships rose up into the green glare of Quroon and swung sharply away. Mason knew there were more ships than that in the Orionid squadron and they were faster and better-armed. But he could see no apprehension at all in the grim, battered face of Garr Atten, as he stared through the scanner-window.

They were going deeper into the cluster, and a wild glare beat upon them from the close-packed hive of suns. Across the peacock glory of

the swarming stars there trailed mighty nebulosities, cosmic folds as vast as the mantle of God, and the constant patchy blurring and streaking of the radar screen showed heavy drift in many places. But the hardy captains of the Marches kept building speed, flying head-long now toward the star-mark of a triplet of glaring white suns.

They raced past that triple glory and then turned sharply toward a region of drift so dense that it made ordinary shoals look like clear space. Mason could visually catch the constant sparkling of scintillations all across the firmament, and he knew he saw a wilderness of great and small chunks of debris catching and winking back the star-blaze as they danced and rolled and tumbled in the void.

"It's a *little* bit fast for Devil's Channel," said Hoxie, and Garr spoke back to him without turning.

"Don't worry. My pilot knows the Channel. I've been in here a good many times."

Mason hoped the pilot knew. All around them the space between the close-clustered suns was webbed thick with the winking points of light and the radar screen showed only one passage, a narrow, winding gut, through the blur of the drift.

The ship rushed on, and on the screen showed the blips that were

the other ships of their little fleet, running equally fast behind them.

"We've beat the Orionids here," said Garr. "Now to set it up."

He had given his orders before they left Quroon, and the ships behind now acted upon them. They decelerated, and started moving toward the drift around them. They were to stop and hover by the drift, where Orionid radar could not spot them, and ambush the squadron when it came through.

But Garr Atten's ship did not decelerate. It raced on down the channel at full speed, until it came out of the drift and into open space. Close ahead glowed the dying red fires of an ancient star, and around it swung eleven dim planets. Their pilot cut speed now, and swung in toward the dun-colored world that was innermost.

Peering down as they swept in for landing, Mason saw an arid, lifeless landscape. There was nothing but sand and eroded rock and an atmosphere whose winds lifted the dust in little whirls and eddies. Then he saw scattered piles of red stone too symmetrical to be natural.

"There hasn't been any life on any of this system's worlds for a long time," muttered Garr Atten. "But there was life on this one long ago. Humanoid, to judge from the ruins."

The ship raced down to a land-

ing. A bitterly cold breath rushed in upon them when the airlock was cracked open.

"Not you, we have to move too fast," said Garr when Hoxie made to follow them.

Mason followed the Hydran out onto brown sandy ground, and looked across a vista of infinite desolation. The dying sun peered down upon them and the little winds whimpered and fretted, and the piles of crumbled stone lay in the sad red light like forgotten tombstones.

"This way," said Garr.

HE LED THE WAY, and as they tramped around the ship Mason saw a quarter-mile away in the ruins the loom of a massive truncated cone of red stone. It was massive as a pyramid of old Earth, and carved steps led up to the flat top. On that top rose an incongruously modern square structure of bright metal and glass, and upward and outward from all around it glistening limbs of metal reached in every direction skyward like arms raised in prayer.

"Is that it?" said Mason, unable even yet to believe wholly.

"That's it," said Garr. "And hurry!"

There was more than one reason to hurry, Mason found out swiftly. The cold, thin air was so poor in

oxygen that his nose and throat and lungs began to sear and burn.

"It's why we had to build that airproof lab up there for Ryll and the men I gave him to work with him," said Garr, coughing.

They climbed the steps, up the side of the mighty cone of stone, and reached the airlock door of the metal-and-glass cube. They had been noted, and the airlock was open, and quickly they went through it.

There was a great, quiet room that was the interior of the whole cube. Around it towered glittering machines that to Mason's eyes looked unfamiliar, and also very puny and small. There was no reactor for power, though he guessed that was in the cone beneath them somewhere. But even though he knew that this thing operated by the simple projection of some radiation that neutralized the force called gravitation, it did not seem to him that these little machines could ever move a world.

There were a half-dozen men here waiting for them, and they were of many races, but the foremost of them had the pinkness of an Orionid. And Ryll Emrys did not look like a man who could move a world. He was thin and small and middle-aged, a man who looked as though he had borne a weight too big for him for too long

a time and had been crushed by it. There were fear and an old pain in his deep eyes.

"What is it, Garr?" he cried, his voice shrill. "You weren't to come back so soon—has something gone wrong? Tell me!"

Garr told him. And it seemed to Mason that he saw the foreshadowing of cosmic catastrophe in the agony that came into Ryll Emrys' eyes.

"I knew it would be so," he whispered, when Garr had finished. "I knew they would hunt until they found me, and that some day the thing I foolishly made would be let loose in war."

"They haven't got you yet, and they haven't got *this*," said Garr forcefully, striking his fist against one of the shining machines. "You can move this planet, Ryll. Move it! Take it away from here, deeper into the cluster, while we stop that squadron."

Ryll Emrys looked at him with haunted eyes. "It'll do no good. The kings of the galaxy will never rest until they have this secret."

"We can stop them from getting it," Garr said. "That's in the future. Right now you must move the planet away from here, in case some of the Orionids get by us. You're space-proof in here, and leaving the sun won't bother you."

Ryll Emrys turned away from

them, and walked past his staring, silent assistants, and then came back. His face was tragic but he spoke calmly.

"I brought those ships into the Marches to destroy you, Garr. Whatever you want, I'll do. I'll take the planet away."

"Take it fast!" said Garr. "We'll be back later—if we're alive."

He turned and Mason followed him out into the bitter, rasping air again. They ran down the side of the great cone, and toward the ship.

Within minutes, the ship swung sharply up and away. And looking back, Mason saw that now the great arms of metal that reached skyward from the cone were alive with a throbbing radiance that wove a net of almost invisible light far out across the dead planet.

"I don't see it moving any," muttered Hoxie.

"It will," said Garr. "It's already falling, toward the one direction in which gravitation isn't neutralized. Slowly, at first, like any falling thing. But building speed every second—"

The ship raced toward the wide, winking haze of the drift, and into the narrow Channel. Now Garr spoke an order, and their speed lessened rapidly until they were hardly moving.

Cautiously, the pilot edged the ship toward the drift. And present-

ly the craft was right beside the mighty field of tiny to massive chunks of debris that wheeled forever here. To the radar of oncoming ships, their craft could not be distinguished from the drift.

They waited, as the ships of the captains of the Marches were waiting all along the sides of the Channel.

It seemed to Mason that they waited for several eternities, before the pilot silently pointed to the big radar screen.

Garr Atten, his face as expressionless as bronze, nodded. He picked up the mike that would take his voice to the communic room and from it to all his other ships. He said,

"Hit them."

CHAPTER VII

THEY HIT THEM. From all the outlaw ships clinging along the edges of the drift, the faster-than-light missiles sped up the Channel toward the oncoming Orionid squadron.

Mason, staring tensely that way with Garr and old Hoxie, glimpsed a far crackling of sudden little points of white light that shone out briefly against the winking haze of the drift, and then were gone.

"By Heaven, we got a quarter of 'em!" yelled Hoxie, his voice crack-

ing.

In the radar screen, a half dozen of the oncoming blips that were the cruisers of Orion had suddenly vanished. The other blips were slowing down in the channel, starting to turn and swing into as dispersed formation as was possible.

Mason thought that the Orionid commander had been coming too slowly. At high speed he might have run the squadron through the gauntlet of outlaw ships, and taken his losses, but his cautious slowness in navigating the Channel had worked against him.

"Keep firing, and work toward them along the edge of the drift!" Garr shouted into his mike. "Press up the Channel!"

The Orionids were at a bad disadvantage. They were out in the open space of the Channel where radar could easily spot them, while the outlaw ships were hard to separate by radar from the blurred jumble of the drift.

Two more of the Orionid ships vanished in distant flares. Then suddenly, on the radar, the blips ceased forming up in the Channel, and instead moved fast toward the jumbled blur that was the drift.

"They're going to try to break past us through the drift!" Mason warned.

Garr nodded grimly. "They'll wish they hadn't. So will some of

us. But we know more about flying the drift than they do."

He spoke sharply into his mike. Streaking down and across Devil's Channel came the ships of the Marches, and with Garr's ship leading a loose formation they left the Channel and plunged into the drift.

By ordinary star-ship standards both outlaws and Orionids were now moving at a mere crawl, the tiniest fraction of light-speed. No higher speed was possible in the drift. Yet even so, the sight that met Mason's eyes as he peered through the windows was appalling.

Jagged hunks of metal and stone and nameless cosmic debris as big as houses rushed past them, and swarms of smaller particles that ranged down from pebbles to sand-grains. The pilot played his controls like a frenetic musician, dancing the ship this way and that through the whirling maze. The radar was a useless blur and alarm signals kept screaming of imminent danger like hysterical old women. And still Garr's ship pressed forward, with the other captains of the Marches following, to intercept the Orionid cruisers that were trying to shortcut through this maze.

A long metal bulk loomed up ahead, running toward them through the rivers of stone, and

Garr yelled coordinates into the intercom and the missiles leaped from the launchers below. But the Orionid cruiser had seen them, it veered simultaneously in evasive action.

It veered regardless of the drift that was more deadly than any missile, and a rolling, tumbling swarm of jagged stone slashed through it and sent it reeling away, a twisted wreck.

"Grab onto them and pound them!" Garr bellowed into the mike, and the long ships of the Marches leaped through the deadly labyrinth like hounds through a jungle.

Mason had seen star-ships in action before, and had served in one of them, but he had never seen anything like this. In here, where radar and target-trackers were useless, ships fought each other by visual contact in close combat, dodging through the swirling debris and attacking each other, and dodging and hitting again.

The men of the Marches of Outer Space had had to dodge and hide in the drift more than once in their lives. They knew this kind of crazy flying better than any conventional navy could, and it was their one big advantage over the faster and more heavily armed Orionid ships. Out in open space the squadron of Orion would blow them to atoms

before they could close the range, but here in the drift it was different.

ALL AROUND them deadly flares burst and died. Most missiles launched by either side missed and exploded against some chunk of debris, but here and there a ship vanished in a radiant halo. Mason saw two of the outlaw ships go like that, but five Orionids had gone and still the men of the Marches fought and dodged and fought again.

Old Hoxie was yelling and swearing in a high, shrill voice, and he began to crow in triumph.

"We're giving them a bellyfull! They wanted to fight in the drift and they're damned well getting more than they wanted—"

Mason saw that it was true enough for now the Orionid cruisers were falling back, trying to withdraw from the drift but getting hit harder and harder. Then he heard the communic suddenly squawking.

Garr Atten, who had been bel- lowing his orders into the inter- com, turned and roared at Hoxie.

"Shut up! I can't hear the com- munic and someone's calling—"

Hoxie shut up and they heard the slurred, heavy voice of Shaa of Rigel shouting from his ship some- where in the maze.

"Garr, I've been trying to reach

you! One of the Orion cruisers broke out of the fight and slipped away west through the drift. I've been fighting two others and couldn't turn to follow."

Garr's dripping face flashed with alarm. He yelled into the mike,

"Keep hammering them, you've got them on the run! But one has got through and I'm going after him!"

— He swung around to the pilot. The man had overheard and was already bringing the ship around fast. He zigzagged it through the drift until they broke into Devil's Channel again.

Mason's eyes and Garr's clung to the radar screen. The channel was empty of blips.

"That cruiser's on its way to Ryll Emrys' planet!" Garr cried, "We've got to catch it."

The ship streaked down the Channel westward, building up to milli-light-speeds on the highest scale of acceleration. But Mason knew that an Orionid navel cruiser was far faster, and it had a start, and had Janissar of Orion and V'rann won after, all?

They burst out of the Channel, and rushed through open space to- ward the dying red sun. The radar showed no ship anywhere and the agony on Garr's face deepened. And then as they raced closer, old Hoxie pointed a trembling hand

and quavered,

"Good God, look at that!
Look—"

They were all looking, and a cold awe and dread fell upon Mason as he saw a thing no man had ever seen before.

The dun-colored planet that had been the innermost world had moved out of its orbit during all this time. It was riding majestically outward in a tangent, and would soon cut across the orbit of the second planet a little ahead of that second dead world.

A secret of nature had been found by a questing mind, and a power had been unloosed, and now a man was charioteering a planet. And in front of Mason loomed the terrible foreshadowing of the things to come when that power should be loosed by the star-kings in galactic war.

"They've already landed!" Garr was shouting. "Their ship will be near the tower—all batteries ready but for God's sake don't hit the tower!"

They swooped past the icy second world toward the dun planet that had gone rogue. With a scream the atmosphere went past them as they decelerated, and then beneath them were the desert and the crumbling stones and the looming cone with its uplifted metal arms spraying forth the eery ra-

diance that controlled the movement of this world.

An Orionid ship was trying to get off the ground a mile from the tower, trying to avoid getting caught flatfooted. It started to roll as it rose upward, to bring its missile-launching batteries into play in quick rotation. But it was too late, Garr's ship had already loosed its missiles and the Orionid cruiser was smothered in bursting flares. The flares died, and only bits of wreckage fell to the ground.

They dropped fast to a landing near the tower, and Mason followed Garr as the big Hydran ran down to the airlock. He was shouting,

"They'll have men in the tower—all hands out!"

They burst out into the cold, searing air, and ran toward the tower. Up there on the flat top of the cone, in front of the glass-and-metal cube that was Ryll Emrys' laboratory, uniformed men ran out and fired down at them.

The small missiles burst amid them like brilliant, dancing will-of-the-wisps, and men went down in scorched heaps. Mason had his own gun out and shot upward and so did others. And Orionids fell, up there.

"No shooting!" yelled Garr Atten, in an agony of apprehension. "If Ryll and his machines are

destroyed, we've lost everything!"

They went on up in a run. The airlock door of the cube-shaped laboratory had already been forced open by the men of Orion and now they could not close it. Garr and Mason and their followers went in with a rush.

THE GREAT ROOM was strewn with bodies. The men who had worked for Ryll Emrys here lay dead about it, and they had not been killed by missiles but by the knives and metal bars that were held by the uniformed Orionids in the room.

"No shooting!" Garr shouted again as they closed in.

Mason had seen that in a far corner of the room an Orionid officer was stooping over Ryll Emrys, who sat in a corner and did not move.

Trying to reach him, Mason slugged with the barrel of his gun, and felt the blade of a knife graze like hot iron along his shoulder.

The room, the very focus and shrine of the most super-modern science of the galaxy, was being fought in with the most primitive of weapons because neither outlaws nor Orionids dared take the chance of destroying the things around them.

Mason glimpsed Garr going down as a metal bar cracked across the side of his head. The officer had

left Ryll Emrys and was running into the melee, shouting to his men, and without a leader the outlaws were wavering.

Mason levelled his weapon. He was the one man of them who was not afraid of destroying the machines around them, who wanted those machines destroyed before they tore the galaxy in twain. He shot, and shot.

His tiny missiles sent dancing death-stars amid the Orionids, and the uniformed men, unable to stand before the weapon and forbidden to reply to it in kind, broke and ran for the door.

Mason started out after them and then he saw the Orionids had their hands raised in surrender.

"Take them to the ship and tie them up," Mason told Garr's men. "There comes Hoxie—he'll take charge."

He ran back into the laboratory. He bent first over Garr Atten. The Hydran's skull was tough or he would have been a dead man. He would be unconscious for a while, but Mason thought he would come out of it.

He ran on to Ryll Emrys. Ryll was conscious, and looked up at him with a fixed, shadowed gaze. He had a deep knife-wound in his breast, and it had been this wound that the Orionid officer had been trying to bandage when the fight

started.

"When they came in and killed my men," Ryll whispered to Mason, "I ran into the fight. They didn't want to kill me. But they have."

Mason knew they had, for with that wound Ryll Emrys could not live. He thought that the scientist had deliberately sought death as a way out of his problem.

"Is Garr dead?" whispered the scientist.

"No," said Mason. "He got a bad blow, but he'll be all right."

"He was my friend," said Ryll Emrys. "I brought him only trouble. And now he will take and use this thing I built, and in the end it will bring him and all the galaxy destruction and disaster."

Mason bent lower. "Listen, Ryll. You don't have to worry about that. I'm going to do my best to destroy this whole installation. I'm a Terran agent, and the Terran Empire doesn't want this thing loose either."

Hope flared up in Ryll Emrys' darkening gaze, like a dying flame. "If you do that, you'll prevent me leaving a terrible legacy to men! For the secret will die with me, if the apparatus is totally destroyed—"

He broke off, and then said, "No, you could not destroy it utterly. Even from fragments, men might

piece it together again. But I can annihilate it completely. Take me to the control panel."

Mason lifted and supported the man, and felt him dying in his grasp as he helped him to the great panel of incomprehensible controls and meters. Yet a fierce purpose nerved Ryll Emrys, and one by one he named the controls and told Mason how to change their settings.

He was silent then, sagging in Mason's grasp but still watching the great banks of indicators. Finally he whispered,

"It's done. This world will not now cross in front of the second planet. It is on a collision course. Take Garr and leave quickly."

Mason carried him to a chair. But Ryll Emrys was already dead.

He went over to Garr and got the massive figure of the unconscious Hydran on his shoulder. Staggering from the weight, and with the air rasping his lungs more and more, he went out of the room of death into the sad red daylight.

Hoxie and two of Garr's men were coming up the side of the cone toward him. The two men took Garr, and Hoxie asked,

"Ryll Emrys?"

"Dead," said Mason. "And we'll all be if we don't get off soon. Ryll set the controls to put this planet on collision course."

Appalled, Hoxie looked skyward.

And up there in the sky the second planet gleamed like a brightening moon.

The old Terran yelled with terror in his voice. "Hurry, then!"

A HALF HOUR LATER their ship rose up fast and raced away from a planet that was moving doomward.

Mason and Hoxie and others of the crew looked down at the dun-brown planet that now was moving on a changed tangential path, toward the second planet.

Shaa's voice came from the communic. "Garr, we sent the last of the Orionids flying! Only six of them left—but we lost five."

Mason answered. "Garr's out of action, but he'll come round soon. Brond Holl speaking. Join us, but don't go near that planet."

The ships drew together, and poised in space, and the men in them looked down in an awed silence as the dun-colored world and the brighter one slowly converged.

The two planets met.

Burst asunder, riven and shattered, they reeled in a fiery, unstable mass. And then the mass slowly broke into crumbling fragments, and soon a great new swarm of cosmic debris moved in a new orbit around the dying sun, and two lifeless worlds had perished.

And Ryll Emrys and his secret had perished, and Mason hoped it

was forever. But the strongest trait of the sons of Adam was the insatiable curiosity that had taken them from old Earth to the stars. Would that curiosity unlock again someday the door just closed?

Old Hoxie sighed. "Well, that's that. And we might as well all go home."

As the outlaw ships flew back through the Channel, and out of the drift toward Quroon, Mason locked himself into the communic room. He sent coded messages far away, and presently the answers came.

By the time he came out of there, they were running down on Quroon. Hoxie told him,

"Garr's come out of it."

Mason went and found Garr Atten sitting in his cabin, a bandage around his head and a stony look on his face. He looked up at Mason and said,

"So Ryll and his work are gone. And our chance for a free kingdom with him. Well, we did our best."

Mason told him, "I said before that you give up too easily, Garr. There's still a chance—just a chance, mind you—that we'll see the Kingdom of the Marches set up after all."

Garr Atten said sourly, "It's nice of you to try to cheer me up, Brond, but don't be a damn fool."

"Listen, Garr," said Mason.

"Orion may not be at all convinced that Ryll's secret has really perished. They're extremely likely to move in and try to take the whole Marches by forced annexation, to find out. If they do, the border star-kings will declare war at once, to stop them."

Garr nodded. "It's liable to happen so. And precious little comfort for us there'll be in that."

"I've been talking with some Terran Empire officials," Mason said. "They agree with me that a crisis like that can be averted, if an independent kingdom is set up in the Marches. Terra would recognize such a kingdom and guarantee its frontiers—and neither Janissar of Orion or the lesser star-kings would dare bother the Marches then."

Garr Atten had listened with growing amazement, and now he got to his feet.

"They're going to decide fast back at Sol, and they'll let me know as soon as the Council has met," concluded Mason.

"They'll let *you* know! *You've* been talking to the Terran Empire officials!" burst out Garr. "Why, you're—"

"I'm not Brond Holl, Garr," said Mason. "I'm a Terran agent."

ONLY THREE DAYS later the word came to Quroon. It came to Mason, waiting in the communic

room of Garr's ship. He went out of the ship at once and drove through the green blazing sunlight to Quroon City, and walked into the big drinking-place where Garr and his remaining captains waited.

Garr would not ask the question, but Hoxie said eagerly,

"Well, what's the word?"

Mason smiled. "Two hours ago, by formal Council vote, the Terran Empire recognized the new Kingdom of the Marches of Outer Space. As soon as the usual plebiscite here indicates that the people here want it so, Garr Atten will be recognized as lawful sovereign."

He got no farther than that, for the roar that went up from the outlaw captains drowned his voice.

Mason thought of the first time he had seen Garr Atten, dreaming of kingship in this tavern drinking-room, and of how a man's dreams could come true in strange ways.

Later, Mason said to Garr, "I'll be leaving soon—I want my own face back. But what about V'rann?"

Garr raised his voice for them all to hear and said sternly, "We'll have laws here now, and people will obey them. She instigated attempted murder and she'll do a sentence for it in prison here before she goes back to Orion."

Hoxie groaned. "That's it—that's the last straw. A *prison* here at Quroon!"



A Case Of Ptomaine

by

Harlan Ellison

Their job was to make sure a planet was safe before Earthmen came to colonize it. Their mistake was in thinking Earthmen had a right to do this . . .

WHILE THE SHIP *Circe* burnt its way like some eternal Roman Candle through the surrounding dark of forever, within:

"You make me sick, Dembois! Absolutely sick to my gut!"

"Sick? Why you sleazy crumb, I ought to break you in half! Who the hell do you think you're—"

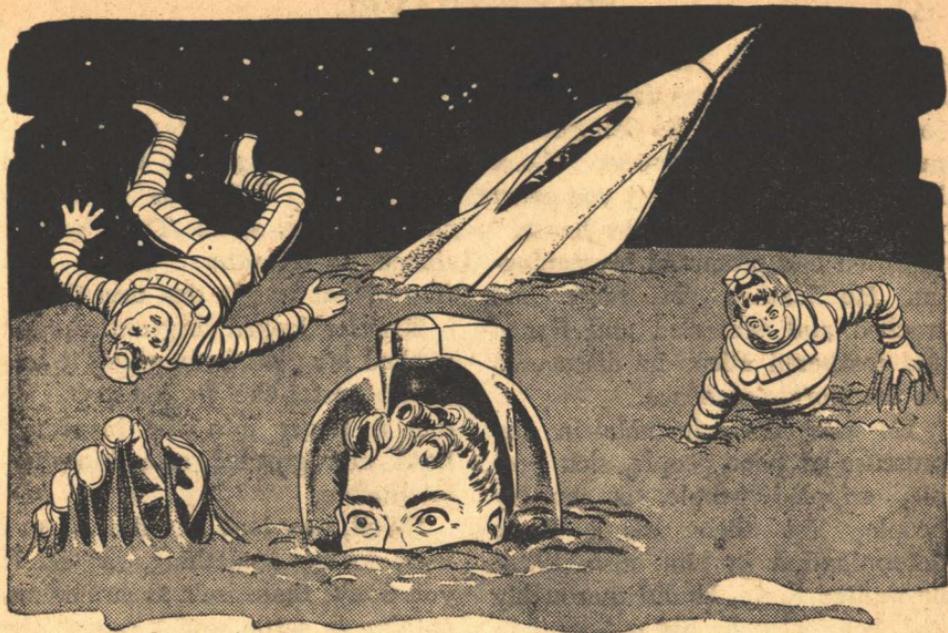
"All right! Now! That's it from the both of you. I've got enough on my hands now with just getting there and back—I said knock it off, Kradter—just getting there and back, and I've heard enough swill from both of you on this trip! So kill it before I take a spanner to your heads. Read me?"

There were three of them riding the flame to the stars. Three on a CatalogShip sent to chart the planets of unknown stars, and take brief studies of the worlds themselves. They were three months out,

on a jump between their last world—an ivy-covered ball of green they had named Garbo because it was the single planet of its star—and their next one, which had no name. Nor chart position; nor star whose light had reached the Earth as yet. But there was another island of star clusters across this immensity of black between galaxies, and as soon as they had hopped it through inver-space, they would find yet another shining light to draw them on.

It had been that way for over one year and nine months. They had catalogued over two-hundred and twenty worlds, each one different from its predecessors.

But the work was not enough. Time hangs like an albatross about the neck of the space-wanderer. He sees blackness all about him, and occasionally the starshine, and even more occasionally the crazy-



quilt patchwork that is inverspace. There is no radio contact with Earth. There is little recreation and even less provision made to keep fit and alert.

But nature knows when its creatures need sharpening. So, the arguments.

There were three of them: Kradter, who was descended from Prussians, and had the look of them. Tall, with heavily-muscled torso and the square, close-cropped blonde hair of his ancestors. Rigid in his thinking unless pried forcibly from the clutch of his convictions. Poverty and determination had combined to bring him into the

high-paying but dangerous Seek-Serv branch of the Navy. He was a Lieutenant, with the opinion that rank was unimportant, only drive was essential.

The second was Dembois, who was a bigot.

He came from Louisiana wealth, and his background was one of idleness, dissipation and revelry. A serious affair with a half-breed Indian girl with smooth, straight limbs and high breasts had forced his father to order the boy out of the city, and into the Navy. Authority and wealth and position had saved Dembois from a prison sentence, but for him the Navy was

sentence enough. He despised the SeekServ, and it was for that reason he had joined it. Self-punishment, in the adolescent "Look how I'm suffering, aren't you sorry you threw me out of the house!" tradition had prompted his signing-on. He loathed the furry and tracked and tentacled and finned and feathered aliens he discovered on the worlds of space.

He was uncomfortable in the presence of poor people, sick people, crippled people, or hungry people. Yet there was a fierce determination in him, also. What he wanted to do, he did thoroughly and well; what he did not want to do, but knew he *must* do, he did in a similar fashion. He was an Ensign 2.

The third was the Captain of the *Circe*.

His past was the reflective, mysterious face of a mirror; any man might look, but all he would see was the image of himself. No more. His past was silent in its shell, but its form was there to be seen in the man. His name was Calk.

HIS PERSONALITY dominated the *Circe*, held the other two in check. Calk was strong, perhaps too strong for his own good. The bickering was beginning to tell on him.

"What the hell was it all about

this time?"

Dembois and Kradter spoke together, their voices rising automatically in anger as they found competition. Calk was forced to shut them up again. Then he motioned to Kradter. "Okay. You first. What was it this time?"

Kradter looked disgruntled, and yanked his pipe from where it was thrust pistol-like in his belt. He dug a finger into the blackened bowl and growled something unintelligible.

"Well, now look, Kradter, if you want to say something, say it. If you don't, there isn't an argument, nothing to settle, and I can go the blazes back to my plot-tank."

Kradter looked up, as though ready to throw a string of curse-words, but merely said, instead, "We were arguing the nobility of Man."

Calk's eyebrows went up. They were thick and black, and struck the impression of two slanted caterpillars inching up his forehead.

Kradter explained hurriedly, expecting Dembois to burst in momentarily. "I was saying that the poor slobs we find on these worlds *deserve* human care. It's our *obligation* to these lesser creatures to provide them with the comforts a greater race can offer."

Dembois snorted, and Calk

looked over sharply. "Now, what was your beef, that you wanted to start a brawl?"

The Ensign 2 snorted again, and turned to the viewport, where the crazy-quilt of inerspace flickered and danced and changed from instant to micro-instant. He was a tall, narrow-hipped man, with ears that protruded slightly and effeminate good looks combined with dark wavy hair that misled a casual observer to Dembois' disposition and temper. He sent up a dark laugh from deep in his throat. "Crap!" he muttered sharply.

"If you've got something to say, Dembois, then say it. If not, I'll go back upship." Clak was nearing the end of his rope. "I assume you don't agree that Man is *homo superior* and everything else that lives in the universe is inferior, right?"

Dembois looked over his shoulder in sarcastic amusement. "No, I don't disagree. For all I know, we're all the brains in the world." He turned to them, "But what I say is it's not our place to do anything for these stinking savages. The only thing we owe them is conquest. They'd overrun us in a month if we gave them the chance. Kill the bloody bastards, that's the answer to colonial expansion out here.

"Put them away for good, the

first thing we see them. It's the only way we can be sure we're protected. Certainly Man is the highest form of life in the universe, I wasn't arguing that! This ass—" he stopped at Kradter's bleat of anger, and as the other man took a half-step forward.

Clak stopped them. "Okay, knock it off. So one of you thinks we should play Big Daddy to the poor natives, and the other thinks we should mow 'em down on sight. Okay. Fine. Good. Now shut your traps and let me get our plot set, or we'll wind up frying inside some sun when we pop out."

He gave them both a strange look, and murmured, "*Homo Superior*," and walked out of the lounge.

The other two sat staring at points between them. Neither spoke. The nobility of Man had once again been demonstrated.

The *Circe* moved out.

A GREEN FOG in the ever-changing pattern of inerspace.

A speck of crimson that flickered and steadied and exploded into sharp golden fragments.

A lurch, a twist, the guts heaving and the puke-masks filling, and the eyeballs burning without heat. The roots of the hair straining, and the arches of the cheekbones stretching the skin tight as

a corpse's. Then a grey-out, a blackout, a white-and-black-out and the ship was free of the crazy quilt of inerspace. They were traveling in the normal universe again. They were in sight of the cold, chiselled stars and the steady multi-colored stars. They were a CatalogShip and there was work to be done. The constellation firmed out in the plot-tank, superimposing itself almost exactly over Calk's lined-in course. The CourseComp chattered eerily and the few discrepancies in course variation were merged, so that the wing-shaped constellation was directly on the Captain's pattern.

Dembois and Kradter knocked politely on the bulkhead door to the control cabin, and slid it open when Calk said absently, "Come."

"How's it set?" Dembois asked.

"About three points off, but we've corrected already," Calk replied, indicating the plot tank. He slipped the infra-red goggles off and stuck them on their pad. "You start undogging the gear yet?"

Kradter nodded, addressing the nod totally to Calk, and Dembois' lips pursed in annoyance that the conversation had been stolen away from him. He thrust back into it with, "I hope we don't run up against any eetees. The last batch was enough to turn my stomach for quite a while."

Kradter whirled on him again. "I thought we had this out once and for all, man. I thought you understood our job is to befriend and aid these unfortunate—"

"Bull!" Dembois snarled. "Show me in the Regs where is says that? Show me . . . or shut your trap . . ."

Kradter had swung before Calk could stop him. He caught Dembois along the cheekbone and spun the smaller man. The Ensign 2 staggered backward, crashed into the bulkhead and slid to one knee, shaking his head. Kradter started for the other, but Calk was on him quickly, slipping his hands under the Prussian's armpits and up behind his neck, where they locked. He dragged Kradter half off the floor in a full-nelson, and shook him solidly, taking the Lieutenant's breath away.

"Now . . . knock . . . off . . . that . . . stuff!" Calk whispered loudly in Kradter's ear. He held the man completely paralyzed, his feet dangling a quarter inch off the floor. Tremendous muscles stood out on Calk's arms, beneath the sleeves of his T-shirt, and a blue pulse of nerve throbbed at his right temple.

Dembois staggered erect, clutching his face, and made a few idle stepping motions; then, in a blur, he hurled himself at Kradter—held immobile in the Captain's grip—

and sank a doubled fist into the Lieutenant's belly. Kradter gasped and moaned softly and slumped in Calk's grasp.

The Captain dropped him, and reached over with one hand—as though in slow motion—and brought a judo cut down on the neck of Dembois, even as the Ensign 2 came back for another strike.

Dembois clattered to the deck-plates beside his adversary.

Calk returned to the plotting seat, and snapped his goggles back on. Once more he murmured softly to himself:

"Homo Superior!"

THE THREE OUTER planets were catalogued without difficulty. The blue dwarf was not able to reach them with its rays, and they were frozen; but there were deep treasures of pitchblende and phosphorous and trace elements from which ferro-zinc could be collandered and strained with little effort. They were marked in the log as triple-A planets, well worth the trouble to reach and mine.

The center ring of planets—fifteen of them—was not as worthwhile. There were three desert worlds (too much harsh silicon), seven barren rock worlds without atmosphere, and ignored by the hand of God (nothing grew there, nothing of value), four jungle plan-

ets (one with technicolored tyrannasauri), and one oddity.

They saved the oddity for last.

Before they would catalogue the inner round of worlds—there appeared to be nineteen, though one of those they credited as being a moon of a blue and white planet might have had an atmosphere of its own—they would set down and explore the oddity.

The oddity was a pale silver globe without ground feature and without atmosphere. It was a great ball of smooth tin foil set in the black of space; it was a featureless plain without hump or depression, mountain or valley, stream or even rock formation. No grass and no clouds. In fact, nothing.

They stared down at the planet inching its way to greatness in the ports. It was as though they were settling toward a gigantic beach-ball.

"That's impossible!" Dembois gasped.

"How can it be impossible, you clown? It's there, isn't it?" Kradter was spoiling for another fight. The pains in his stomach had not yet completely left him.

"Break!" Calk snapped. "Not this close to landfall, you two. And it may be impossible, but it's there, and we have to check it out. No telling *what* a planet like that might have beneath the surface."

Dembois cast a sharp glance at the potentiometer and the gauging devices for composition. "They say you're wrong, Captain."

Calk turned to the dials and studied them at length. They read zero. Not negative, as they read in space, but zero. At the exact, micro-spot that labeled the planet completely empty. But that, too, was impossible. It had to be made of *something*.

They looked at each other, and said nothing, for there was nothing to say. They had encountered a phenomenon. "Could it be contra-terrene?" The question hung unasked in the air of the control room. The question went unanswered, for the only way to answer it was to test.

They shot out the missile when they were still ten miles above the smooth silver surface, and it sped down down down without hindrance of air or course correction. It hit, and exploded. But its indestructible plasteel devices continued to register on the *Circe's* banks, so it was apparent the planet was of terrestrial matter, not the negative matter of a ct world that would disintegrate the rocket on contact.

They landed.

WHEN THE THREE men emerged from the ship, slid-

ing down the landing ramp as children on a playground slide, they were encased in bulky pressure suits and clear bubble helmets. Each carried a triple-thread stun-rifle, for despite the utterly safe appearance of the planet, there was no question as to carrying weapons. Space was deep and angry at Man. Its creatures were varied and utterly unpredictable. So they never took a chance.

As they walked out across the featureless plain, their chest-panels humming and gauging and studying, they moved in a tight triangle.

Calk, in the front, at the apex of the triangle, cast about warily, his triple-threader swinging in lazy arcs.

"Have you noticed the ground?" Kradter asked, his voice hushed and solemn as a man in a cathedral, transmitted over the stereophonic intercom system.

Calk nodded and they saw it, but Dembois put it into words.

"It's spongy. Springy. Like the 'giving' floors back at SeekServ Central. What's it made of?"

"I don't know," Calk answered, and that was the final word any of them said.

There was a shivering in the planet. A shaking and a trembling. A soft trembling, like a bowl of jelly. It shivered and pulsed and

seemed to deepen as they stopped.

Then, through their intercoms, they heard a distinct crunch and clang, and as one they spun around. Half a mile behind them—how short a time it had taken to walk that distance, were they that far from the ship?—the *Circe* was trembling, tottering, falling, and then—

The planet swallowed the ship.

They screamed. Each of them, and the pitch was the same. The meaning behind the screams was the same. They were lost; the situation was so clear, so sharp, they were lost. The ship was gone. They began screaming as they ran toward the spot where the planet had opened—smooth lips opened—and taken down the ship in one gulp.

For they were stranded out here, somewhere out in the nowhere, with only the oxygen in their tanks to sustain them, and their transportation gone!

Then . . . they realized the greater danger. *The planet was carnivorous!*

They realized it too late.

Beneath their feet, the ground swelled, like a bubble bursting, and abruptly opened with a wet, smacking sound . . .

Their screams were cut short as they fell fell fell—and the silver, featureless, spongy ground closed without a break. Without an indi-

cation that a ship of space and three men had been there.

IN THE SYRUP. Grey and all-consuming. Heaving, tumbling, dragged deeper and deeper, thrust into the maw of a force without name and without being. The allness was about them; they were being—

EATEN ALIVE!

The grey substance held them in a rubbery grip. They could move but slightly. Grey and sparkling, coating their helmets. Breathing was clear, but seemed so oppressive. The planet of grey featurelessness was alive, the entire world was a creature, an entity, and they were in its gut. They turned over and over wishing knowing hoping not caring but knowing that this was all of it down to the bottom without end and without hope and hands out and legs out and their fingers spread and their eyes wide as their throats tensed and tore at the screams that rattled within their helmets . . .

Overhead, the *Circe* swam into view, was there a moment, no longer, and gone out out and out gone again in the silver nothingness that lived was them was all of them had held would not release them good-bye.

The trembling was coming again. Suddenly. Then they felt the planet

around them heaving, tremors starting low and roiling, spilling, sucking upward. They had no hope. In a few minutes the air must surely give out, for they had been down in the heart of this living world for eons, centuries, eternities, and when the air went, they would die . . . the pricklings at their skin told them the digestive fluids of the planet were even now trying to assimilate the fabric of the bulky pressure suits. But there was the heaving . . .

And they felt themselves rising, speeding as they rose, and the silver was growing lighter and lighter and with no warning they were

POP!

Thrown up and out of the planet, like corks shooting to the surface of a lake, and they fell back to the sponged surface. They were free.

The planet trembled violently, agitated beyond belief. Like pebbles they were flipped and tossed and hurled and thrown, bouncing bouncing bouncing. The *Circe* was spat forth from the planet, two hundred feet away, lying on its side, being jostled and caromed as they were.

Without hesitation they scrambled madly for the ship, and threw themselves through the lock. Fighting the unending bouncing and jostling movement of the mad planet they got to the controls and

the dampers went in and the fire chambers spurted—

The *Circe* blasted off without care or course, the men thanking God for their lives, thanking Providence for the inexplicable release from sure death. They had been Jonah, swallowed by the whale, Noah consigned to the ocean, and now they were free, and rushing away into space, away from that terrible man-eating world.

Behind them, the silver planet settled slowly, and the trembling ceased. It was silent and solid once more.

DEMBOIS WAS STILL sheet-white.

"We've got to get back into contact with Earth!"

Kradter was shaking so much he could not keep his hands from his face, where they plucked like live things at his features.

"That *thing* is a horror! A menace! No man will be able to set foot on it! We've got to get Earth to burn it out of space!"

Dembois: "It's a hazard, it's worse. It was—it was—horrible!"

Kradter: "I've never seen anything like it!"

Dembois: "It's a menace to man!"

Calk's laughter stopped them. They stared at him, for the first real signs of emotion were contort-

ing the Captain's face. His roars of mirth broke against the bulkheads and tinkled like dust motes about them. For a moment they thought he had gone mad from the experience of being eaten alive. For a second they thought of hysteria and slapping him, but when Kradter took a step forward, Calk waved him away with a mirth-weakened hand.

Finally, he stopped, sucking in breath, and clutching his sides. "Oh, you two give me *such* a pain in the ass!" he laughed.

They stared at him. Had Calk gone mad?

"What are you talking about?"

"We've got to get back to Earth to warn them!"

"That thing is waiting for Man to come along . . . to . . . to *feast* on him!"

Calk's face suddenly went rigid again. His voice steadied and he looked at them. "Don't you know even yet? Don't you understand what's happened?" They stared at him, uncomprehending.

"All the way out here," he said, bitterness living in his words, "all

the way out you've been telling me how great and wonderful man is. How he rules the universe, how it's his job to show eetes the way, or destroy them. As though Man were the end-product of the life race, as though we were at the pinnacle of development. You never could have considered that there was a higher life-form than us.

"That planet is no menace," he snorted.

They stared at him unbelieving. "What are you talking about, are you crazy?" Dembois snapped.

Kradter interjected roughly, "That world will eat any human who sets down there. Men have to do away with it!"

Calk's face was angry, really angry, as he said: "You asses! You conceited, self-important asses. Don't you understand what I'm saying? That planet won't *touch* a human being. It won't have anything to do with us. *Homo superior*, ha! That's the joke of the century. You fools, can't you see . . .

"Man has just had the greatest insult of all thrown at him!

"That planet *vomited* us up!"

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D. BRUCE BERRY



The Deadly Mission

by

Alexander Blade

He awoke in a star ship with one thought driving him crazy. He had to find a man named Atlas—and kill him. But he didn't know why . . .

THE STRANGEST PART of awakening in the luxurious cabin was knowing just three things about himself. Three and no more.

The first fact his own brain seemed to supply, as though he were familiar with the thought: he was on a starship; an exceptionally large starship. He did not know quite how he estimated the size of the vessel. Perhaps the distant drumbeat whine filling his ears the very second he awakened told about size in a language he did not understand. This first fact was easy. He was lying in a deep anti-grav berth, in semi-darkness, while dimensional murals on two walls arranged their lights and shadows, theirs gleams and murk into a shifting, real-seeming picture of outer space. And that was funny too—that he knew about anti-grav

berths, dimensional murals, outer space—all components of the fact of the ship. But the rest of it wasn't funny in the least. The rest of it was horrible.

A plasticized pass case in his tight-fitting green tunic identified him as Duncan Straker. Fact two.

It was essentially frightening because he hadn't the remotest notion whether his name was really Straker at all. And then, finally, the worst:

He wanted, more than anything else, to kill Alexander Atlas X. Whoever on the face of the system *that* happened to be.

His body seemed wiry and muscular. On inspection his face did not displease him. It was not too regular, the gray eyes were a bit wide-set but the mouth looked capable enough, a trifle thin and slashed, but not bad when he

smiled. It was a stranger's face, that was all. The face of Duncan Straker, who wanted desperately to murder Alexander Atlas X.

Crossing the cabin, discovering he knew what nutritional cigars were for, he selected one from a humidor and also determined that someone—who?—had made it very easy for him to kill. Alexander Atlas. He was discovering all sorts of things, but it was basically horrible. Like picking up the heavy-butted disintegrator lying incongruously on a taboret, and knowing at once how to use it.

Duncan Straker—he tried to accustom himself to thinking of the name in connection with his body—thrust the splay-muzzled disintegrator out of sight beneath his tunic, reached out and opened the massive tapestry-covered door. On the opposite wall of the corridor he discovered a tiny phosphorescent map. He was sure it was of the ship. There were nine separate decks diagrammed, and from the scale, each appeared to be gargantuan. A glowing purple dot indicated his current position on the fourth deck. Underneath the map of the huge ship was the legend, *The Biarritz. Your host, Alexander Atlas X.* The name rang bells. He thought about murder.

But he didn't want to think about murder. Deep in the pit of his

mind there was rebellion, like a muffled scream. He did not heed it because it was gone too suddenly.

Duncan Straker shrugged, consulted the map once more and started forward through the corridor. There were other cabin doors on either hand, all closed. From far away came the sound of squealing human voices and the splash of water. A pool? He found himself in an empty circular court with a vast domed ceiling. Without warning two men in somber wine-colored uniforms appeared from a doorway half-hidden by a pillar at the outer edge of the court.

"Who's out there?" the first man was shouting. Suddenly he spied Straker. "You! Come here!" He and his thick-shouldered companion unstrapped the flaps of their side-arm carriers.

Corridors radiated from the court in four directions. He chose the one directly ahead, running. The thought of murdering Atlas was in his mind as he charged. Boots slammed and drummed behind. Arms suddenly circled his legs. As though operating like a machine, with automatic response, Straker planted his boots firmly, ready to fight when he saw they were charging from all directions. He used his fists cuttingly, dangerously, dropping three in their tracks,

one shrieking and claspng a palm to a bloody, ruined eye. He kicked off the one on his legs. Another leaped around his neck, hanging on tenaciously, as Straker tried to pull the disintegrator from his tunic. A light metal truncheon swung by a smiling man in a maroon uniform set off flashing novas of pain in his skull.

NEXT THING HE KNEW, he was on hands and knees, and their boots ringed him. "Name?" a voice snarled.

"Duncan Straker," he breathed, rising to his feet, wiping blood from his head, staring around at the circle of impassive, brutal faces. "That's what it says in that case you're pawing."

The slender man, the smiler with the truncheon, spat on the case and handed it back. As Straker wiped it on his trousers the smiler purred, "That is what it says on the card, precisely. But that is not what it says on the guest roster. There is no Duncan Straker listed on this cruise of The Biarritz, and when Mr. Atlas tours, the roster is always precise."

Straker thought quickly. "It's a big vessel. There could be a mistake . . ."

The smiler crashed the truncheon on Straker's nose, making it bleed. "Oh, no. The Biarritz carries three

thousand five hundred guests, but there are no mistakes. The computers never lie. So you must be an interloper."

Crash went the truncheon.

"Take him to Effingham."

Straker made a final lunge at the smiler, was slugged down, and so allowed himself to be dragged into a transparent tube of light which shot them down three decks. Straker became docile, planning carefully. They had not taken his disintegrator yet, probably assuming he was unarmed since he fought with his fists. They really didn't have to worry. There were ten escorting him, along interminable corridors. Once Straker passed through another court with his guard, and glimpsed at the end of a cross-hall a vast expanse of magnificently high window, opening onto red-scorched blackness where an immense crimson-yellow sun burned gaseous in the black. As the gigantic starship cruised on its muffled rockets, the sun floated out of sight. Straker was hustled along from the court. He had to think, analyze, scheme. Above all he must not fail on his mission. He must complete the murder assignment at all costs. He didn't know why, and the more he thought about the *why*, the worse his plight seemed.

A maroon-dressed guard spun a

wheel on a high door and Straker was shoved through into an utterly different world.

Here a luminescent pearly-white sky gleamed overhead. The air was hot, dank, congestive. As far as could be seen, a veldt of yellowish grass shivered in the hot wind. Straker blinked again, realizing suddenly it was an illusion, but a marvelous one. He was in a vast chamber perhaps a mile long, a chamber carefully outfitted and designed to give one the feel of some damp, primitive alien world. The illusion shattered when one of the guards dragged an annunciator horn from what appeared to be a tree stump. The guard's magnified voice bounced booming up and down the vaulted sky:

"Chief Effingham, please. Chief Effingham to entrance B-eleven please."

A moment passed. Then, across the veldt, with a rising roar of six hammerlike feet, an iron-hided beast with a cylindrical head came charging. The guards cringed. The beast, snorting and huffing, thundered away out of sight, probably down into some cleverly fabricated dip in the landscape, while along its train roared a tiny three-wheeled vehicle with a thin pale man standing erect beside the seated driver. This individual was distinguished by a few severe decora-

tions on his maroon tunic, and by a narrow, arrogant face. The little vehicle slowed slightly, and with great agility the ribboned officer leaped down.

He drew a fragment of black silk from one sleeve and wiped the edges of his mouth, smiling contemptuously at Straker while one of the guards reported the circumstances.

"Straker, eh?" The officer chuckled. "This is a distinct pleasure. I am Nels Effingham, chief of police of the estate ship *The Biarritz*. Welcome aboard—however you managed to sneak aboard. And do enjoy your visit. Or rather, I hope you *have* enjoyed it." Though Effingham smiled, his lips were bloodless and his eyes were the eyes of a killer who savors his role. To one of the guard force he snapped, "Re-set the tracks in the beast's head. Make sure all his machinery is working. Then we'll put Mr. Straker out on the veldt and let *him* be the quarry."

The guard saluted and trotted away into the yellow grass. Straker was thinking desperately.

Effingham made a supple-wristed gesture at the luminescent sky. "Mr. Atlas has a remarkable flair for devising amusements to divert his cruise guests, don't you think? The beast is native to Europa, of course, the outer belt. Quite real-

istic in every detail. Its electronic brain was put together most carefully, so that when one is pursued, one is certain the pursuer is scientifically dedicated to destruction, and when one becomes the hunter, the beast is scientifically dedicated to self-preservation. Naturally the guests always escape, due to the speed of those little atomic carts. You should find it amusing on foot, I think. It will be an innovation. The beast has never had a kill, not since The Biarritz was launched. Oh, there *was* a messy little affair with a steward—”

“When I have a chance,” Straker said calmly, “I intend to kill you.”

Nels Effingham gave an amused sideglance to the assembled guards. “He means it, doesn’t he?” The officer’s lips tightened. “Straker, no one comes aboard Mr. Atlas’ ship without authorization. There has never been a stowaway before. How you came aboard does not interest me. Our machines will find out when we put your corpse in for dissection. But Mr. Atlas has posted standing orders for stowaway execution. And executed you shall be.” Effingham turned as the guard returned through the yellow grass.

“The beast is rigged, sir,” he reported. “Ready on the launch track.”

No, thought Straker suddenly.

No, I’ve got to break, try for the disintegrator they overlooked. Instantly he realized it would be hopeless, yet he felt driven, whipped to trying. Because he *had* to murder Alexander Atlas X, who was evidently the owner of the estate ship.

STRAKER FELT COLD. He did *not want* to kill this Atlas, who must be very powerful, extremely rich. The dim, hollow voice at the back of his mind told him he did not want to do murder, yet he knew he must escape and do it nonetheless. Why did he have to do it? Why . . .?

“Straker?” Chief Nels Effingham called lightly, amused. “Please step forward, and run.”

It was useless, dimly useless, yet Straker could not have willed his actions otherwise. He took a pair of steps, head down in hang-dog fashion, then turned and lashed out, caving in one guard’s front teeth with his great crag-knuckled fist. His lips peeled back from his teeth and he became an animal lashed to a frenzy. Another guard darted in, foolishly raising his hands, trying to sidestep in a professional way. Straker sent him rolling with blows that tore cartilage. Truncheons appeared. At the fringe of the crowd Effingham shrieked:

"Disintegrators, idiots! Disintegrators!"

The blunt weapons appeared in guard fists. Straker had his own free, was crouching now in the rotting wind from the ersatz veldt, his finger bloodless-white upon the key. What held him frozen, as it held the guards frozen, was the unexpected sputter and roar of another tiny three-wheeled vehicle approaching fast, whirling blades scything a path in the yellow grass before it.

Straker craned a head over his shoulder, loosened his muscles and his nerves a bit. This might be a way of escape. The only matter was his mission of murder. And he was not going to be killed immediately by Effingham, *that* fact shone clearly in the thin man's white-fac-ed expression of anger. The blades on the prow of the little vehicle came to rest. A few wisps of the yellow grass fluttered off in the wind, and one of the women in the cart helped the other alight.

"Lady Atlas. . ." Effingham began. "Miss Dover. I thought you were spending the day in the Pseudo-Centauri gym. Please, ladies. . ." He stepped forward, arms outspread to shield their view of Straker. "This is merely a bit of minor unpleasantness not fit for your eyes."

The young girl, handsomely

formed, copper-blond, with a full pink mouth and intelligent yet warm gray eyes, was staring directly at Straker, though her rebuke was aimed at Effingham:

"My mother and I are not required to justify our movements on The Biarritz."

"Naturally not!" the older, blue-haired woman echoed. She too was statuesquely built, with a dark, vaguely Latin face and commanding brown eyes. She appraised Straker, clearly preferring what she saw in him to the picture presented by the slight, cruel Effingham. Every line of her gown spoke riches and position, but she gave Straker a smile. "What's he done, Effingham? The racket when we came in here for a little hunt was deafening. Is he of the crew? He's not dressed like a crewman. Yet I'm familiar with all the guests."

"He's not a guest," the younger woman replied in Effingham's place. "He looks much too healthy."

Straker felt hope now: he might wrangle his freedom. He returned the girl's friendly gaze, despising himself for his own hypocrisy. Effingham had referred to the older woman as Lady Atlas. She was clearly a relative of the ship's owner—the man he must kill. But the job had to be done. Straker lowered his own disintegrator, waiting, while Effingham rushed on:

“. . .stowed away!” The chief officer could barely stifle his anger, his disappointment at being robbed of a kill. “I planned a quick execution, according to the orders of Mr. Atlas, and then an analysis of his brain retention cells via laboratory methods, to determine why and how he came aboard. I beg of you, ladies, let me carry out my responsibility.”

“Let you carry out your sadistic tendencies is what you meant to say,” Lady Atlas answered acidly. “Not at all. It is impossible for stowaways to board my husband’s vessel. Therefore, he came aboard legally, if mysteriously, and unknown to you. Or me. Nevertheless, he is much too pleasant-looking a person to be subjected to your rather coarse techniques. Come along, young man.” She threw Straker a warm, genuine smile. “We’ll talk a bit up on my deck, and unravel the puzzle of you. I’m bored. Perhaps you can divert my daughter and me as well.”

“Thank you, Lady Atlas,” Straker breathed. He stepped out though the ring of awed guards.

Effingham’s lips were livid white. “Lady Atlas! I must advise you that your behavior is extremely dangerous. We have no notion of this man’s motives. . .” He halted, silenced by a graceful yet unmistakably commanding wave of Miss

Dover’s gloved hand. Straker jumped up in the little cart. The daughter took the controls. Lady Atlas fitted herself regally into the third seat. The vehicle spun around and raced off across the yellow veldt. Straker’s final impression was of the intent, purposeful stare of Nels Effingham. A stare which promised revenge. . .

THE COPPER-BLOND girl and her imperial mother showed little disposition for talk during the trip to the eighth deck where they had chambers. Just as well for Straker, who concentrated on presenting an amiable countenance, open and guileless. At the earliest possible moment he wished to escape, locate Atlas and slay him.

(Would that damned voice far back in his head—saying he *didn’t* want to kill—*never* shut up?)

The monstrous floating rich man’s palace that was The Biarritz would be deadly with traps, if Effingham had his way. Thus, under the wing of the wife of Atlas for a time, he felt safe, and on course, too. Straight toward Atlas. For that reason he devoted all of his efforts to making himself seem a quiet, grateful inferior.

The blue-haired woman’s chambers were sumptuously decorated in a martian motif—the walls, with no dimensional murals, were hung

here and there with the carved star-and-circle symbols of the Martian religion, each one an artistic masterpiece apart from its religious function. Straker felt mildly awed. The restrained elegance of all the furnishings, and especially the priceless and nearly unobtainable Martial icons, testified to the breeding—and the *power*—of Lady Atlas.

Lady Atlas asked if he cared for food. Straker readily agreed. He felt nervous as he seated himself before a delicate platinum table and began to wolf golden, plump nutrientypoed guinea hen. Lady Atlas and her daughter, the latter with amused curiosity in her eyes, watched him eat as they rested on a pair of triple-sized foam chaise platforms.

"Effingham," Lady Atlas spoke finally, "is a vindictive little beast, though I suppose he performs a needed service aboard my husband's starship. Intruders now and then try to creep aboard. Yet they are always discovered before our departure from our private launching lock on Capitol Mountain. My husband sees that they are dealt with before we leave Mars, poor wretches. Usually petty sneak thieves or wealth-peepers hoping for a glimpse of the inside of this vessel. You fit neither class, Mr. Straker. Nor do you have the genteel and

decadent air of our invited guests." Her wise, amused dark eyes pierced him deeply for a long moment. "What are you? And who?"

He cracked a guinea hen bone, sucking at the delicious meat. "Duncan Straker, that's all."

"Oh, come now." The young girl, Miss Dover, gave a little smile of exasperation. "We *did* save your life. And I was looking forward to a long conversation. You see you're quite unlike the men who usually ride with Atlas when he cruises. They're very soft and white. They snicker endlessly."

Straker threw her a genuine smile of pleasure. Damn it, she *was* attractive, but she had no right to be so frank with him, while the hammering drive within his skull kept reminding him of murder. Murder. *Murder*.

Lady Atlas smiled tolerantly at the girl. "'Plain Jenny Dover' she prefers to call herself with an emphasis on the adjective. Jenny is the daughter by my first marriage to Sydney Dover, you see. Do you recall the name? I see you're nodding. Yes, the titanium king, as the press named him. I'll admit I had no fondness for Atlas when I married *him*. Neither am I fond of him now. But he offers me a certain position and rank, and I'm basically a ruthless woman. Not at all admirable."

"I think it's admirable that you pulled me away from the ship police when you did," Straker returned with a grim, thin smile. "I will tell you this much," he went on, fabricating the story as he talked and not glancing at once at 'Plain' Jenny Dover, who was not plain at all.

"I was engaged to conduct a certain confidential investigation by your husband, Lady Atlas. So confidential that he arranged for my entry on the ship at Capitol Mountain. But for reasons of his own, it was necessary for me to make my way to him unaided, here on The Biarritz, without credentials. He. . . he told me if I managed *that* task, he'd know I had the qualifications for another job he needed done. An even more important job, with very high stakes. That's why I've got to reach him on my own hook, without the aid of Effingham. I'm due to see Mr. Atlas in less than one hour, in fact," Straker finished, taking a last desperate leap. "But I don't even know where to find him, yet. That's part of the test."

"What does the investigation involve?" Lady Atlas said, leaning forward, new urgency in her manner.

"I'm afraid I can't disclose. . ."

"The Cartel Tribunal? He's told me he was frightened of the men on their council. I have no idea *why*

he's frightened, but I have never seen Alexander Atlas frightened before."

Straker shook his head. "I'm afraid I can't speak about. . ."

Jenny Dover, a pensive finger lying aside her cheek, said shortly and quietly, "You're lying."

Straker gave a start. Instantly his nerves began to churn. Had she discovered him? "*What?*"

Lady Atlas burst out, "Jenny, that's a horrible thing to say. . ."

The copper-haired girl shrugged. "I'm disappointed in you, Mr. Straker. I'm a bit more perceptive than my mother, and your eyes told me something, while you were explaining about your mission aboard this ship. They told me your mission was something entirely different. Something which you dislike, but cannot avoid. And. . ." Her brow furrowed a bit. ". . . something criminal."

STRAKER'S HANDS seized the fluted back of the platinum chair, gripped for support as he forced out a diversive laugh. "That's absurd, Miss Dover. If I were free to go into detail. . ."

Bitterly the girl shook her head. "Don't. Don't strengthen the lie. For a moment. . . for just a moment or two I really believed you were the sort of man, at last. . ."

"Jenny Dover!" Lady Atlas exclaimed sharply. "Where is your

restraint? Your sense of taste?"

"Gone, damn it, all gone!" she cried. "Eaten away by the stupid foppish giggles of the young men Atlas hauls aboard on every one of these rotten, boring cruises. I haven't any restraint left, nor any taste, nor any propriety! Because a man who holds his head up and looks at me honestly is like an extinct bird around here! I'm sick of being an exquisite toy for my stepfather to display. And I'm disappointed because. . .because. . ."

Fury and sadness mingled in her tones.

". . .because Mr. Straker is lying to us. Smiling and bowing and eating our food and murmuring agreement and lying—like all the rest of the pack of fools on this ship!"

And with a choked sob of humiliation, she was gone.

Straker stared dismally at the whispering curtains through which she had fled. The rhythmic tap-tap-tap of her heels died away, leaving only Lady Atlas' outraged breathing and the distant, droning counterpoint of the monster starship's great engines. Straker felt more of a traitor than ever. He felt suddenly eaten away with dishonesty, yet he forced a bewildered expression to his face.

"Don't look so baffled," Lady Atlas snapped. "The girl is right, in her way. She deserves a clean,

decent man, not these lizards who make up my husband's clique. But her outburst—her blatant attempt to literally throw herself at you—is unforgivable."

"I'm sorry if I brought it about," Straker said.

"Don't be silly. You have your job to do. You've been doing it as best you could."

Breathing a little more tightly now, Straker still fought to maintain a veneer of sincerity. "I'm afraid I must leave you, Lady Atlas. My appointment with your husband is nearly due, and it's going to take some effort to locate him. The Biarritz is a gigantic craft, and I have no way. . ." He let the words drop off suggestively, waiting, watching, hoping the blue-haired woman was not nearly so perceptive as her daughter. If she were, he'd be finished.

There was a long, agonizing silence.

"You may locate my husband Alexander one deck above. In the salon."

Quickly she rehearsed the directions which he memorized without saying a word. Then the older woman added, "This notion of my husband's to subject you to a test seems absurd. You have information to report? Very well, then, you should proceed to him with dispatch. Oh, I know he might be

angry if he learned I helped you—his peculiarities stem from a rather old-fashioned character, and I understand how he might want to conduct such a quixotic test. Can't see the proverbial forest for the equally proverbial trees. Here. . .”

Her thin veined hands took up a tiny gold writing instrument which inscribed a message on a small square of plasticized stationery. This she handed to Straker. “It will take you to him with no difficulty.” Straker was about to thank her when her eyes sharpened suddenly and she added, “Of course if you are lying, as Jenny intimated, you will be disposed of when you meet my husband face to face. He will not tolerate cheap publicists or thrill-seekers.”

Straker's heart was beating with triphammer speed. “I understand, Lady Atlas. I appreciate your trust, and I assure you that your help is for the best. Now if you'll excuse me. . . .”

“That doorway there,” she indicated. “The first tube to your left takes you to the salon.”

Straker bowed gravely, whirled on his heel and marched out before he discovered his new-found hope reduced to dream-dust by awakening. But it was no fantasy: he was still Straker, and still ready to do murder, and he still carried the pass when he closed the massive door of

her chamber and started along the corridor. He felt beneath his tunic. The Disintegrator was in place, ready. . .

Nine yards this side of the glowing inter-deck tube, they were waiting. Officer Nels Effingham and a dozen hard, slab-shouldered men in maroon.

“Far enough,” Effingham said, blocking his path. “Straker, you have made me quite unhappy.”

“That's unfortunate,” Straker began, shoving his hand beneath his tunic. Effingham reached instantly, whipping up the disintegrator muzzle.

“Keep your hand away!” he exclaimed shrilly. “Take it away, do you hear? I'll give you exactly five seconds. . . .”

Straker, sweating, still spoke smoothly: “I was about to say it was unfortunate that I'd angered you, because Lady Atlas has given me credentials which will take me straight to Atlas.”

Startled, Effingham scowled, uncertain for a moment. Then his eyes hardened. “That makes no difference to me. I'm going to carry you down to the lowest deck of this ship and spend the next three hours killing you, my friend. Lady Atlas cheated me once. But not a second time.”

“You're a fool,” Straker countered, sensing rising danger.

"My job is to execute intruders!" Effingham shrilled.

"Your job is apparently to execute intruders who manage to get the best of you, and give your police-state ego an unpleasant jolt," Straker said. He was gambling, *gambling*. . .

THE GAMBLING paid handsomely, as Effingham, goaded to fury, whipped his arm back to deliver a crashing blow of anger to Straker's skull with the disintegrator. When his arm flew down Straker caught it, levered sharply and spun Effingham around. A biting pressure of fingers and Effingham's disintegrator dropped away. Straker had his own weapon free by then, and his other arm crooked gaggingly around Effingham's throat. Pressing the disintegrator muzzle into the shaking officer's side, Straker ordered, "Make your trained animals step aside. We're going for a stroll to the tube down there, and if you refuse, the dis gun will dig a cave in your side. Understood?"

Effingham gurgled in terror. One of his patsy hands made frantic gestures to his men.

When the maroon-clad rank parted, Straker swung around so that, as he retreated to the tube, Effingham still presented a target for his own men. At the tube's mouth, with the glare of the constant force beam

blazing yellow-white on their faces, Straker cut Effingham free, gave him a spin by the shoulder and employed the officer's own tactic—a demolishing blow to the skull with the disintegrator butt. Effingham howled and crumpled. Straker dove into the tube with a single leap, letting the glowing column of force shoot him straight upward to the next level. He held the disintegrator tight in one fist, sweat dotting his forehead. . .

This was the moment. This was the moment when he must kill Alexander Atlas X.

Why? demanded the voice in his brain. *Why, when it's not in you to murder in cold blood. . .?*

But the hammering compulsion to kill drowned out the pitiful protest, sent it back down deep into the lower levels of Straker's brain as he crossed the marbled floor of a vast reception hall, tensely thrust the disintegrator out of sight and presented the plasticized pass to the captain of half a dozen guards stationed before massive doors. The captain scrutinized it, then growled, "Mr. Atlas is inside, in the salon. Pull back the doors for this gentleman. . ."

Straker's nerves tightened another notch. He passed between the ponderous doors and heard them close behind. The awesome gloom of the star salon required a mo-

ment of adjustment.

The gigantic chamber, certainly a quarter of a mile long, an eighth of a mile wide, was open to the universe, its curved foot-thick pressure-glass wall and ceiling formed in the natural flow of the lines of the starship's curved upper surface. Through each section of the mammoth arch of glass could be seen fiery suns and their planets, spread out infinitely on every hand. The chamber seemed remote, isolated, closer to the awesome emptiness of space than to the world of man represented by The Biarritz. There was no illumination save for the starshine and one very tiny, hooded magnesium lamp on a low table, dozens of yards down the chamber, where the salon's few pieces of furniture stood grouped together in the midst of a vast, polished floor.

Waiting, near the hooded lamp, head thrown back and eyes on the stars, was a man.

The murder-pulse in Straker's brain became nearly unbearable. He clawed at his tunic, got the disintegrator into his fist, began to walk toward the figure. His breath hissed between his teeth. His footsteps made a dead, hollow echo. Overhead the dumb, incandescent universe slowly wheeled. . .

Straker halted half a dozen feet from the silent shadow-black figure. He asked, "Mr. Atlas?"

Slowly the figure's head turned. In the weak seepage from beneath the magnesium lamp's conical hood, Straker had a half-glimpse of this industrial titan: a slender, dehydrated sort of figure, garbed in a poorly-cut, carelessly-woven tunic and breeches. The eyes gleaming at Straker in the starlit dust seemed rheumy and sad. The voice which was the voice of Alexander Atlas X had a despairing, querulous tone: "Thank God you're here at last Mr. Straker. The waiting. . ."

Atlas shuddered, then went on in his peevish old man's voice: "My nerves are worn to nothing. Get on."

Straker blinked. All around him in the chamber with its ceiling of stars he felt mysterious, irrefutable forces pushing and thrusting at his brain. His hand began to shake violently as he raised the disintegrator. He controlled the trembling only by sheer effort of will. Like drumbeats magnified to inhuman proportions came the instructions within his skull: Murder, *murder*. . .

That feeble voice of conscience, silenced so many times since he had first awakened on a lower deck, uttered its protest once more, forced Straker to say without thinking, "I. . . I have come here to kill you, Mr. Atlas. Don't you understand? To kill you."

What reaction Straker expected,

he did not know. Fear, perhaps. Screaming panic. Sudden struggling and protest. The horror of it lay in Atlas' dry, puckering sigh of acceptance:

"Just hurry. . ."

Straker goggled at the older man. Then, while every particle of his brain seemed to be wrenched awry, he grunted wordlessly, shook his head and lowered the disintegrator again. The single senseless syllable of negation, which did not begin to reveal the exquisite torture of force against force within his mind, hung vibrating for a moment in the star salon. Alexander Atlas X took two quavering steps forward, extending veined hands, his voice rising shrilly up the scale.

"What is wrong with you, Straker? Are you a weakling? Do what you are supposed to do. Kill me with that dis in your hand. *Burn me, Straker. Annihilate me!*"

Straker shook his head once more. "I. . . I know I am supposed to do that. I can't."

"But you must, you must!" the old man whined. "Damn you, what's gone wrong? What's gone wrong inside that thick head of yours? Those doctors. . . those damned doctors! I paid them, I paid them royally." He spat at Straker venomously: "Don't you understand? Don't you see? I paid to have your brain fixed!"

A new emotion, a cool anger, began to well into Straker's mind. He raised his eyes.

"Fixed?"

ALEXANDER ATLAS grew frightened under the dangerous sibilance of Straker's tone. He took a step away, raising his palsied hands defensively.

"I've tried suicide. Don't you think I haven't tried a hundred times? Don't be angry with me—you agreed with the doctors to let yourself be subjected to motivational therapy—to let them condition you and plant the murder impulse in your mind. You have no right to be angry Straker," he whined. "You agreed, there in that shoddy little town near Capitol Mountain. You said you'd lost your license as an astrogator, got your ship warped to pieces in space, couldn't get another berth. . . had no money. . . Straker," the man shrieked, "I was there hiding behind a screen!"

"I don't remember it," Straker said coldly. "But you said my mind had been fixed. That's why I don't remember it." He hesitated, a new timbre of certainty in his speech when he continued: "But that makes no difference. I do understand it, a little—not knowing why I must kill you.

"If I made such a bargain, I

was a fool not to realize I couldn't turn into a murderer. That must be why I've felt, all along, that I couldn't. . . skip it."

Straker tossed the disintegrator on a low table, where it fell clattering.

"In any case," he said levelly, "your doctors made the wrong choice. Whoever I am—and they'd damn well better restore my past, Mr. Atlas—I'm no killer, in spite of what I said. If I said it at all. You may have brought me aboard this ship to make your death a little easier, but I'm not buying. Not now, knowing what I do. There are others you can find to do the job." Straker paused again, letting the truth clean out his brain, scour it of the dark artificially-induced drive to kill. That drive still hammered at the back of his mind, but it was growing weaker by the second, feeble and weaker. . .

"I'll double the fee!" Atlas whined. "Triple it. . ."

"Why didn't you simply have your doctors commit an illegal euthanasia?"

Atlas crashed a trembling fist to the table-top. "I brought you aboard The Biarritz, damn you, hoping you'd *surprise* me. . . be clever, and dangerous, and kill me when I didn't expect it. That was what the doctors guaranteed." In the starshine Straker saw a trickle of a

tear like a silver thread on the old man's cheek. "But they failed. They didn't analyze you properly. You walked in here like. . . like an equal, just walked in, holding the dis. Probably because you're not the sort for subterfuge, because every second your mind went against the planted impulses. . ." Atlas raised his hands imploringly. "I have to die, Straker. I have to die, or be destroyed. Public humiliation. . . scandal the ruination of my holdings. . ."

Straker asked coldly: "Why?"

Alexander Atlas took a deep breath, lowered himself into one of the relaxer-chairs, clasped his hands between his knees, answered softly:

"The Atlas family goes back over a century and a half. You must know that. My ancestor, an immigrant with an unpronounceable name, took the name of one of the puny—but in that time, monstrous—destructive missiles used in warfare. Took it, and in a small electronics factory began to build components for the first missile-drive ships that eventually reached Luna. There was a progression of sons, all somewhat less honest than the first, and while the holdings of the Atlas family grew to astronomical proportions, those holdings were amassed at the price of the most vicious manipulations and crimes. Fake buy-outs. Dummy leasing

firms. And then, when it came time to ship to the stars, piracy, murder. . . all bringing power, but all putting blood on the name of Atlas."

The old man raised his face, pleading. "At last The Cartel Tribunal, with its huge data-sorting evidence computers, began to sift through the tons of faked records, bogus papers, illicit deals. . . the job has taken more than four generations, there are so many things for them to learn, so many secrets to uncover. It was inevitable, once electronics were adapted to the processes of justice. I could not corrupt the tribunal, nor could my father, nor my grandfather. In another year at the most the machines will produce their final report. I know it. I have certain sources of information." His old, mad shoulders slumped helplessly. "I cannot face the result. But I cannot destroy myself, for I am a coward, the weak and diseased blood of a dozen generations of immensely wealthy robbers. That is why. . ." He rose tottering from his chair. ". . . why you *must* destroy me. I'll not have the courage to try again. . ."

Straker said, "I'm sorry, I won't."

Alexander Atlas uttered a shrill, sobbing cry of anguish. In that instant Straker heard a rap of boots

behind him, and he spun around. His stomach knotted. Lurching along the polished floor of the chamber in a zig-zagging run, backed by more than a dozen of the maroon-uniformed guards, came Effingham, a huge disintegrator rifle braced on his hip. With his free hand Effingham signalled wildly to Atlas, shouting:

"Out of the way, Mr. Atlas. Get back, get back! He's a killer. . ."

STRAKER WENT for the disintegrator he had thrown down, knowing desperately that he was in the final trap now. Effingham turned sideways, presenting a narrow target, and threw the disintegrator rifle to his shoulder. The rest of his troops followed suit. Straker lunged to the floor, fingers clawing around his own disintegrator, bringing it into position for a last defense. Effingham's face was contorted into a mask of pleasure. He fired. . .

Straker, rolling wildly, fired a second after Effingham. The disintegrators of the guards scorched out along Effingham's beam. Because Straker was moving, the first charge missed, scorching over his head, putting the smell of burned hair in his nostrils. But Effingham took Straker's charge full in the chest, jackknifing over, his face hitting against the gleaming floor. He

kicked out with his legs in the last throes of death. Straker, belly down on the floor, breathed fast, gaining a second's advantage before the next volley from the guards. There was a ghastly gurgling sound, somewhere in the darkness behind.

And one by one the guards were dropping their weapons. One gagged, swung around and fled. Then another. . .

Straker rolled over quickly. . . and watched the last remains of Alexander Atlas X disappear in a foul-smelling curl of smoke, generated by Effingham's blast, the blast that had gone over Straker's head. For a moment, thinking himself mad, Straker imagined a dry, hideous cackle of laughter floating near the little column of smoke, as though Atlas' voice alone remained, echoing final salvation. Straker rubbed knuckles in his eyes, then he realized slowly that the wild laugh had come from his own throat. He pushed to his knees. The face of a guard peered in at the chamber's entrance, drew back again in terror. . .

Straker very nearly fired on the figure advancing from a shadowy sector of the star salon. Only the gleams from the hooded lamp on coppery hair stayed his hand. The girl, 'Plain' Jenny Dover, stood a few feet away, regarding him blankly for a moment.

"Well. . ." Straker said thickly, insanely, "Well, I killed him. Atlas. You predicted I would do something like that." He didn't know if he wanted to laugh or cry, now.

The lines on the girl's face softened. The coppery hair shook in negation of his words. "No, it's not your fault. I heard him talk about his scheme. I saw the fight." She pointed back along the way she had come. "There, on the left, a concealed lift tube rises up from the lower decks into an observation room set between this deck and the next below. It's wired for sound, and has periscope screens in it. I. . . I came up here to see. if my premonition had been right. I saw you come in, I heard what my stepfather said. I heard it all."

Suddenly he saw that her eyes were shining. And she wasn't plain. Far from plain. The light in her eyes drove some of the panic from his mind, healed it, calmed it. . .

She extended one hand. "We must tell my mother what has happened. And tell her that, at last, I was right in my appraisal of a man. It. . . it has never happened before," she added in a voice both pleased and sad.

Straker winced. Overhead the stars wheeled. A comet shot out beyond a distant planet, a hurling streak of light. "How do you know what I am? I have no idea myself."

"The doctors can undo everything that was planted in your mind."

"I may not like what I remember. Evidently, I made a deal to do murder."

"But at the crucial time, in spite of all their mental tricks, you couldn't do it. That's what is important."

"Still. . ." Straker looked hard at her. "Digging out the past can be grim. Very grim."

"Let me take the chance, Straker. Please."

Straker breathed deep. "All

right." He moved to her side. Together they walked out of the star salon, past the tiny knot of terrified guards still frightened at what they had done. In the deserted salon two infinitesimal piles of ashes—Atlas and Effingham—lay beneath the great curved surface of the ship, in the light of stars burning down on last remains of a great family's heritage of destruction. On the deck below, just entering Lady Atlas' quarters, Straker lifted his eyes upward and thought, *I hope before he ended everything, he was happy once. As happy as I am now.*



Lunar Flight Now?



A SMALL BUT VOCIFEROUS group of engineers, scientists and rocket technicians, is clamoring for a crash program on the long-awaited Lunar flight. Not content with the sure and steady progress that is now being made in rocketry, these people want the government to go "all out" and to throw in the necessary numbers of zillions of dollars it will take to do the job. Proponents of this scheme insist that the results will well be worth the cost, both scientifically and militarily.

It is possible to summon up plausible arguments for that kind of a program. Point one of course is that they believe it can be done! This encouraging, optimistic belief

makes all of us feel good, especially since most of the clamorers are not just mouthing words - - many are respected scientists and they know that the job is possible - - now.

Then, why not?

Probably the best argument for not indulging in such an overwhelming crash program is simply that it is not necessary. The rate of progress of the regular rocket research groups has been so satisfactory, the goal is so near, and so much has been learned by the more leisurely pursuit, that the Moon-rocket will be here soon enough.

It also should be pointed out that this approach, the slower one, avoids the fiercely wasteful and disappointing steps that ensue when cau-

tion is entirely abandoned.

For example, a rocket capable of the Moon journey, if constructed now would be a terrible compromise in every way. The motors would be crude, the fuel consumption incredible and the probability of success slim. True, the effort could be repeated.

But we are on the verge of some tremendous advances, particularly in metallurgy, and that is one of the major barriers. When suitable metals are available - - and fuels - - the rocket will be assured of landing on the Moon.

Those who argue for avoiding the slow, surer, but more tedious steps - - satellites, space stations, moon

flights - - really are doing themselves a disservice.

Chemical fuels are being rapidly improved, to the point where chemistry says they can go no farther. There is the faintest hint of possible success with nuclear power in the form of heat applied to a carried fuel. This tantalizing suggestion offers a great deal of hope for the whole program.

We all want to see men get to the Moon. And if the hot-heads slow down a little, we'll be sure to do it. Let's not make the first Lunar flight a monument to dead men. Crumpled chrome-steel and magnesium alloy lying on the Mare Imbrium is small consolation . . .



"How was I to know it understands English?"

Tipsy - Turvy Planet

by

Larry Fisher

Water had a strange effect on the natives of this peanut-sized world — it made them giggle. It was driving Choate nuts — with HQ's blessing!

FROM:

John Choate, Construction
Engineer First Class Planet
37, Galaxy Four

TO:

Brevet Major George Berelson
HQ Unit Commander,
Galaxy Four Expansion Project
New York, N.Y.

July 21

1. Acknowledging receipt of your consignment of mirrors, dollar watches, combs, toothbrushes, pencils, etc., which arrived via supply carrier yesterday.

2. The above named items should aid in bargaining with Planet 37 natives. Planet 37 economy is still at the barter level. The idea of money is too sophisticated for these people as yet.

3. Smith requests one case bourbon.

4. Please request next weekly supply carrier to refill Planet 37

Unit water bottles. Local water is contaminated for humans.

5. You will be kept informed of our progress.

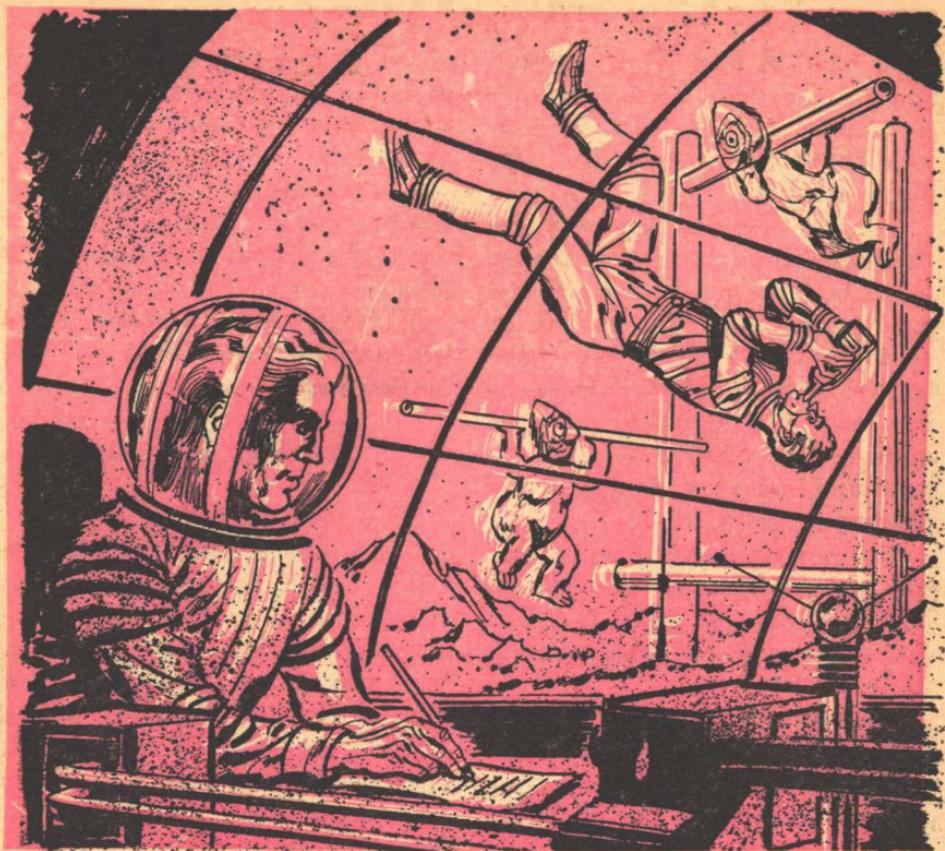
Signed,

Choate, Con. Eng. 1st.

P. S. Off the record, George, this is the damndest post you've ever dropped me onto! You must still be mad at me for that week end back at Oklahoma University, when I tied you up for a dozen dates with that fat dishwasher blonde, Mary Lou Fink. What the heck, George, can't you take a joke?

Anyway, if this is the way to get a HQ Unit Commander's desk job, I'll stick it out. But I'm not sure it's worth it.

Thirty-seven is a small planet in the first place. About one-fourth Earth gravity. Old Smith sure looks odd jumping five feet into the air like a ballet dancer. I know—he



looks odd anyway. But this is too much, really.

To make matters worse, the old boy's bourbon seems to take a stronger grip on him here than at home. He gets higher in more ways than one.

I don't really like the idea of these two-man construction outfits anyway. Local labor is too finicky. You have to spend half your time keeping the natives happy. And

in my case, I spend the other half sitting on Smith. He's a first-rate parlor psychologist for getting natives to work.

But George, that man has all the resistance of a confirmed alcoholic when it comes to booze. I tell you, something has to be done about him. I'm legally and operationally required to enter his request for that case of bourbon, but if the request goes through, I quit! I'll

come back to New York and run an air taxi before I'll spend another six months on this hunk of rock with Smith *and* an unlimited supply of hootch.

You see, George, I'm very intense about that promotion. I want to settle down and find a girl and get married and pilot a desk at Headquarters. I never have been one for hopping all over space, as you know. I'm definitely the stay-at-home type—maybe a quick run over to Mars on a Sunday afternoon, but that's all.

So you keep them happy at that end and I'll get this Visio-station built if I have to make it out of egg crates with my own two lily-white hands!

Oh—and please make sure the bottled water comes through. We're running awfully low.

Your brother in Omega Delta,
John

FROM:

Brevet Major George Berelson
HQ Unit Commander, Galaxy
Four Expansion Project New York,
N. Y.

TO:

John Choate, Con. Eng. 1st.
Planet 37, Galaxy Four
July 22

1. Your communique of July 21 received and contents noted.

2. You are instructed to proceed with all speed in the construction

of the Visio-station, utilizing formal or informal procedures for the recruitment of personnel from Planet 37 natives.

3. Your request for one case of bourbon denied. Reason: Tightening of shipping regulations prohibits sending nonessential materials.

4. Next weekly supply carrier will arrive at 0900 July 24 with bottled water.

Signed,

Berelson, HQ Unit Cmdr.

P. S.

Hey, John, boy!

Good to hear from you. You're right. I still remember that bag you saddled me with for the week-end four years ago. Mary Lou Fink. That was the longest, lousiest three days of my life. Man, the Omega Delta house didn't let me forget it, either. Whenever I see one of the boys it's always: "Well Berelson, how you doing with that sensational blonde these days?"

Grrr!

But I don't hold a grudge, John. To prove it, I'm re-interpreting Shipping Regulation 109 to classify bourbon as a non-essential in this case. You can tear this note off the bottom of the page-printer and show the above message to Smith if he gets nasty about not having his Pablum. That's one heartening aspect of the Expansion Service—you can always kick the blame upstairs to HQ.

You'll also be happy to hear that Ellender is retiring next year. He's HQ Unit Commander of the Galaxy Five project.

Do your duty on Planet 37, John boy, and Ellender's job could fall right into your lap. If you play your cards right, of course.

Yours in Omega Delta,
George

FROM:

John Choate, Con. Eng. 1st.
Planet 37, Galaxy Four

TO:

Brevet Major George Berelson
HQ Unit Commander, Galaxy
Four Expansion Project New
York, N. Y.

Aug. 12

1. Bottled water arrived on schedule. After some experience with same, we know that this water has intoxicating effect on Planet 37 natives. We think atmospheric conditions are responsible. Please instruct.

2. Visio-station building proceeding with extreme difficulty. Intoxicated natives impossible to deal with. Please instruct.

Signed,

Choate, Con. Eng. 1st.

P. S.

Hell, George, what are you trying to do to me? I realize Mary Lou Fink was a real double-dyed dog, but after all, four years!

This is too much—water that gets the natives swizzled. Thank

goodness Smith's supply of laughing liquid is gone. It ran out day before yesterday, and he's been sober for 24 hours now.

I like him better drunk, actually. Sober he has the disposition of a starved mink. But at least maybe we'll get something done now. He's trying to come up with an idea for making the natives heave to.

It'll have to be a dilly of an idea, though. These idiots refuse to drink their own water since they tried ours. And if we don't give them any, they just disappear into the woods and we don't see skin nor scale of them. So we sort of ration out enough to keep them happy. They go around giggling all the time.

You'd better send another shipment of the stuff. And this time do something to it. I don't know what, but I'm not letting anything like this keep me away from that HQ desk job. When Ellender moves out, I move in!

Yours fraternally, in O. D.

John

P.P.S. What do you mean, Ellender's job could fall into my lap "if I play my cards right?"

FROM:

Brevet Major George Berelson
HQ Unit Commander, Galaxy
Four Expansion Project New
York, N. Y.

TO:

John Choate, Con. Eng. 1st.
Planet 37, Galaxy Four
Aug. 13

1. Your communique of Aug. 12 received and contents noted.

2. Repeat: Use all informal and formal techniques for the recruitment of working personnel from natives.

3. More bottled water arriving on next weekly supply carrier, due Planet 37 on Aug 15.

4. Also on weekly supply carrier due Aug. 15 will be Chemist 1st Class M. L. Fink to aid you in rectifying intoxicating water situation with natives. Please treat Chemist Fink in accordance with rank and supply with quarters befitting 1st class technician.

Signed,

Berelson, HQ, Unit Cmdr.

P. S.

John, you lucky hound, you!

What a jim dandy coincidence this is! Finding Mary Lou Fink, I mean. I ran across her name in the files the other day and decided she was just what you needed to cheer up your life out on that cold, desolate, barren, drunken meteorite. After all, you once did the same for me—four short years ago!

Hope you have a *large* room for Mary Lou.

Lovingly, in Omega Delta
George

P. P. S. The phrase "play your cards right" means be nice to me,

George. I've just been made Chief of Assignments for HQ personnel!

FROM:

John Choate, Con. Eng. 1st.
Planet 37, Galaxy Four

TO:

Brevet Major George Berelson
HQ Unit Commander, Galaxy
Four Expansion Project and
Chief of HQ Personnel Assign-
ment New York, N. Y.

Aug 14

Sir:

1. Regret to inform you progress on Visio-station is at a standstill. Natives will not co-operate.

2. Feel presence of a chemist is not necessary and will only complicate this detail. Suggest you cancel assignment of M. L. Fink to Planet 37.

Signed,

Choate, Con. Eng. 1st.

P. S. George, I have only two words for you, gleaned from my loving study of ancient 20th century history.

Drop dead!

John

FROM:

John Choate, Con. Eng. 1st.
Planet 37, Galaxy Four

TO:

Brevet Major George Berelson
HQ Unit Commander, Galaxy
Four Expansion Project and
Chief of HQ Personnel Assign-

ment New York, N.Y.

Aug 28

Sir:

1. Please excuse two-week delay in this communique.

2. Presence of Chemist 1st Class M. L. Fink is great addition to Planet 37 unit. Request indefinite extension of her tour of duty.

3. Natives co-operating fully on Visio-station. First building completed and work begun on second.

3. Request double ration of bottled water on next weekly supply carrier.

Signed,

Choate, Eng. 1st.

P. S.

George, boy, forgive me for my harsh words of Aug. 14. You are a gem, a noble soul of a man, a benefactor, a true friend and fellow Omega Deltan.

Obviously, you have not seen Mary Lou Fink in some time. Probably four years, to be more nearly accurate.

George, lad, that girl has changed! If you'll allow a moment of giddy rhapsodizing from a usually pedestrian fellow, I would like to say that she has turned herself into one of the most gorgeous women I've ever laid my tired eyes on.

Remember the fat? She's lost at least 35 pounds. What's left is all lean. Well, not *quite* all, George.

Remember that scroungy blond hair? She's not dying it now. It's

a natural chestnut brown—shiny and with the faintest suggestion of a wave in the back where it touches her shoulders. And what shoulders!

In addition, she has proved to be a miracle worker with the natives. You see, up here they don't reproduce by sex. They have another process, almost like a couple of cells growing together, or apart, or whatever cells do. Anyway, they'd never seen a woman before. They have a nice sense of color and form. Mary Lou's big blue eyes and that out-of-this-galaxy figure have knocked them. They'll do anything for her. She's very gentle and kind and good to them, and they love her.

George, I hate to say this, but when you fluffed her off four years ago, you pulled the large-sized goof of your career.

There's really only one fly in the ointment. And maybe it isn't really a fly, but a blessing in disguise.

This morning when I got up, Smith was sitting out on the front steps of the Visio-building with a bottle of water in one hand.

I went out to ask him something, and you know what he did, George?

He giggled!

Yours gratefully in O. D.

John

FROM:

Brevet Major George Berelson

HQ Unit Commander, Galaxy
Four Expansion Project and
Chief of HQ Personnel Assign-
ment New York, N.Y.

Aug 28

URGENT!!!

1. You are instructed to return
Chemist 1st Class M. L. Fink to
New York immediately. She will
report to HQ Personnel office.

2. Bottled water supplies will be
reduced to normal.

3. Planet 37 Visio-station is being
discontinued. Abandon building and
proceed to Planet 40 to begin battle
hangar.

Signed,
Berelson, HQ Unit Cmdr.

P. S.

John, you are a louse! Of course,
this serves me right. I deserve it.

But that doesn't change things
for you. Ellender's still retiring—
ahead of schedule, in fact. His
papers came through yesterday.
He'll be out in three months.

Now, with the Planet 37 base
out of the way, you can step into
Ellender's position.

That is, you can if you're a good
Omega Delta and come home and
bring Mary Lou with you.

Reciprocally,
George

P.P.S. Ask Mary Lou if she re-
members that marvelous weekend
she and I spent together four years
ago.

FROM:

John Choate, Con. Eng. 1st
Planet 37, Galaxy Four

TO:

Brevet Major George Berelson
HQ Unit Commander, Galaxy
Four Expansion Project New
York, N. Y.

September 6

Sir:

1. Please be notified of resigna-
tions from Expansion Service of:

A. Smith, Engineer, 2nd Class.

B. Fink, Chemist 1st.

C. Choate, Eng. 1st.

2. Since Planet 37 is being aban-
doned, bottled water can be stop-
ped sending.

Signed,
Choate, (Ex.) Con. Eng. 1st.

P. P. s.

Boy, oh boy, George, this is It,
with a Capitle T!

Mary Lou found out whzt makes
this water so good. It's mineralized,
I think she called it. So the na-
tives use To drink 7ust plain oLd
Rain wazer, but our stufff has kicks
in it.

Also,,, no hangover.

No cirrho . . . no sciros . . .
no messed up liver, either.

We fixed upa hoMemade miinx-
eralizer, Guorge. Its in the ba6h
room) where the Visio-scope sp-
posed to been.

Oh—almost forgot—Mary Lou
and I got marriedd yesturway. Lo-
cal nativEs ceremoney—simple but

binding. We are settling down here
on ;lanet 37.

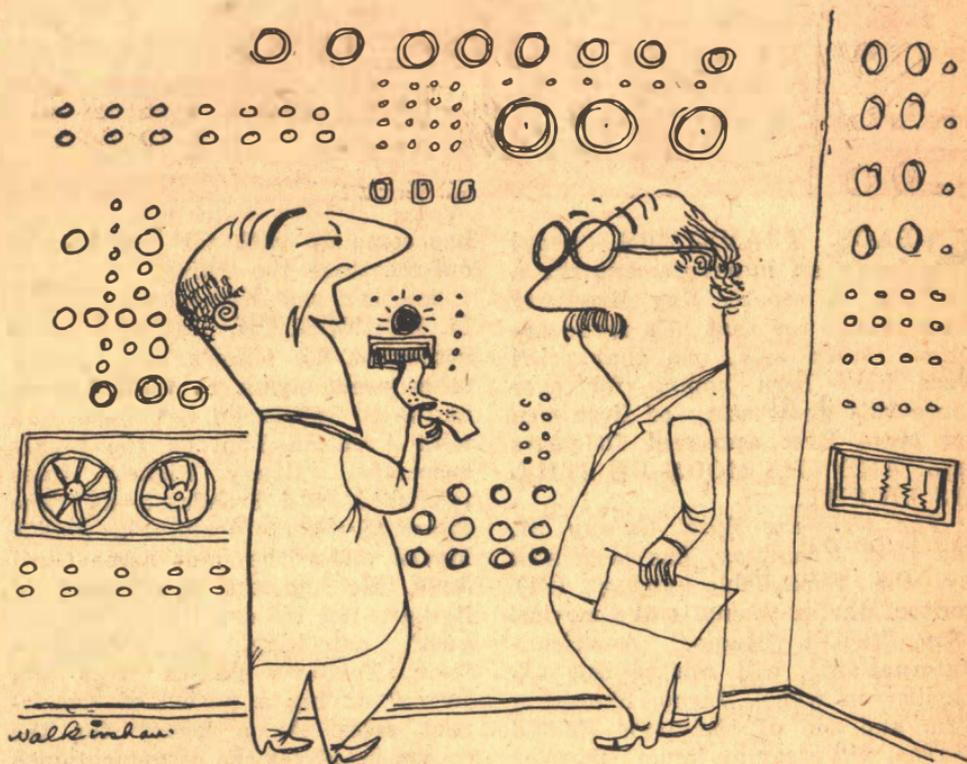
One final word, Gaorge;: I don't
need that proamotion to Ellenders
job. I got it t oo good here.

Yours fatunerlally in ojugu doltus

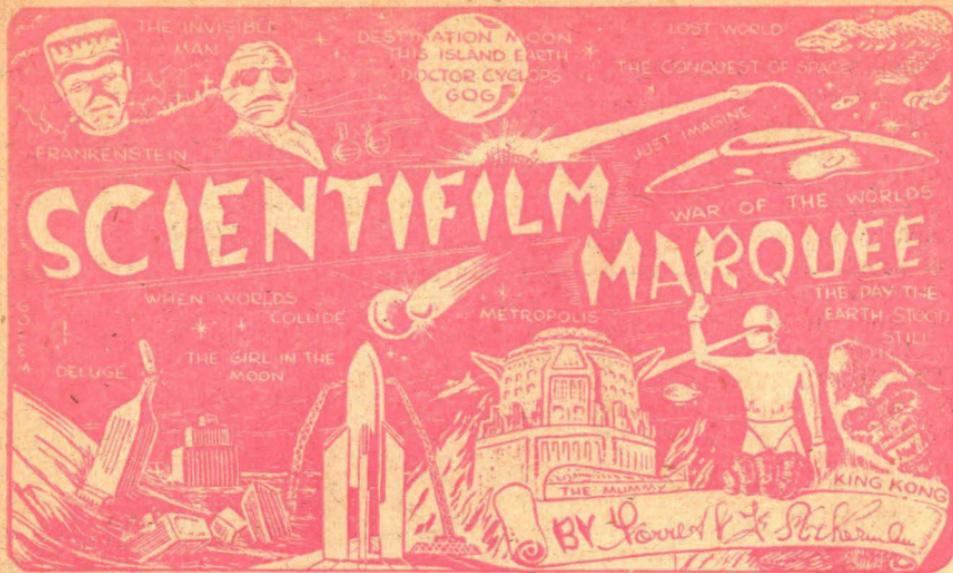
P, p.s.

Mary Lou say she don'T rme-
mmber anYone maimed Blerel-
son. 'Sorry, Gaorj.

THE END



"Fleetfoot in the fourth."



SPACE TRAVELERS, ahoy! Here's an announcement it's a joy to report. Ray Bradbury just phoned me that he's made another screen sale, one that sci-fi fans have been hoping for ever since this great story of first men on Mars first appeared 10 years ago: **AND THE MOON BE STILL AS BRIGHT.**

The Creature from Galaxy 27, his first screenplay, has been sold by the remarkable young (21) writer Martin Varno to the movies. The "Sci-Fi Studio," American-International, will release this s.f. thriller in which Varno, himself a fan, and son of the actor Roland Varno, will essay an important role! Fanne Pandora Bronson will also be tested for a part in the picture, artwork for which has been done by another ardent s.f. reader and talented brush-wielder, Ron Cobb. Wait'll you see the monster Cobb

has come up with for this one: it out-creates the Thing!

Another sad *Memoriam*: **CYRIL M. KORNBLUTH**, dead of a heart attack at 35. Known also, among other pseudonyms, as Cecil Corwin and S. D. Gottesman, he collaborated with Frederik Pohl on the highly successful "Gravy Planet" (also published—and broadcast—as "The Space Merchants") and with Judith Merrill under the joint name Cyril Judd. He had the satisfaction of living to see his own "Not This August" outselling, in pocketbook form, Tolstoy's classic "War and Peace" during a period of concurrent sales. As a legacy for the screen he leaves the aforementioned future-novel plus the rocket novel "Takeoff," both of which have been optioned for filming.

Nicholas Nayfack, producer of **FORBIDDEN PLANET** and *The Invisible Boy*, also died since the

last issue of *SPACE TRAVEL*.

On the brighter (and lighter) side, Leonard Wibberley's spoof, "Take Me to Your President," will be turned from novel into film by Columbia Pictures.

\$1,000,000 is being budgeted for Kong-type spectacle *GARGANTUA*, scripted by David Duncan of "Dark Dominion" and "Beyond Eden" renown . . . Continuing the gigantism cycle, *ATTACK OF THE 50-FOOT WOMAN* and *WAR OF THE COLOSSAL BEAST* are ready for release, as is *COLOSSUS OF NEW YORK*; and *ATTACK OF THE GIANT LEECHES* and *THE AMAZING SEA GIANT* are in the company of *THE GIANT WOMAN* as titles slated for production. Incidentally, the latter title is currently covering two potential pictures, one an original screenplay by Frank Quattrocchi, the other a to-be-scripted scientifarce to mark the return of Lou Costello to the screen. The Costello story would naturally be in a comedy vein; the already completed Quattrocchi script, with priority claim to the title, is serious.

Geo. Pal has optioned a screenplay, *Man in Orbit*; Geo. Moskov will produce *First Man into Space*.

Oops, another giant just lumbered onto the scene: *THE GIANT BEHEMOTH*, being shot (and undoubtedly shot at as well) in England. Other way 'round, *World of Giants* is a projected teleseries about incredible shrunken people.

MASTODON is being made by Layton Productions; *PREHISTORIC* by Corman Productions. Martin Varno will be seen as a dinosaur-tamer in the latter.

Script of *THE BOY WHO*

SAVED THE WORLD has been polished to perfection by Budd Bankson, Thad Swift and James Edwards, and has young Timmy Hovey champing at the bit to star.

ATLANTIS, LOST EDEN and H G Wells' *TIME MACHINE* are all on Geo. Pal's busy schedule.

The Girl from 5,000 A.D. will be released as *TERROR FROM 5,000 A.D.*

Other title changes:

Instead of the previously announced *Water Witch* it'll be *THE THING THAT COULD NOT DIE*.

WAR OF THE COLOSSAL BEAST supercedes *The Return of the Colossal Man* and *The Revenge of the Colossal Man*.

HORROR OF DRACULA is the title of the British color remake of *Dracula*. *RETURN OF DRACULA* (with Francis Lederer) is an entirely different, modern day *Dracula*.

CRAZY MUSIC will be the re-issue title of the fantasy classic, *The 5,000 Fingers of Dr. T*.

LOST MISSILE and *Missile into Space* are two different pictures, the latter's title having been changed to *SPACE MASTER X-7*.

IT—THE VAMPIRE FROM SPACE has metamorphosed into *IT—THE CREATURE FROM OUTER SPACE* (which title may yet be changed again because Universal-International considers it too uncomfortably close to its own *IT CAME FROM OUTER SPACE*, which is being re-released).

OPERATION SNOWMAN, collaborator Larry Jackson tells me, has taken a title change to *WHITE HELL* (what, no *Creature from*—?)

Correction: *WHITE HELL*, co-scripter Budd Bankson updates me,

is now known as CHOOKNA. Special pre-production artwork has been prepared by Ron Cobb, the artist who made Hannes Bok flip.

Karloff as *The Haunted Strangler*, replacing the previous title *Stranglehold*.

Prehistoric has grown to PREHISTORIC WORLD.

For one brief moment CREATURE FROM GALAXY 27 was almost *Attack of the Star-Beasts*.

It appears that Hollywood producers are no longer making pictures, they're too busy changing titles.

Flash! SINVALA, the rib-tickling scientifiilm rib scripted by Thad Swift and the team of Larry Maddock-Corrie Howard, is still SINVALA! There is no truth to the rumor that the title will be changed (to lure in the innocent) to *Valley of Sin*. (That comes later.) I have been approached by certain interests, who wish to remain subliminal at this time, to essay the role of a mad scientist with cannabalistic tendencies who captures a succulent mortal named Lollobrigitte Barginadot. They assure me it's a part I can sink my teeth into: my problem is—which part?

Psychorama, "the fourth dimension in movies," is what they're calling the subliminal perception process introduced in the horror-thriller *My World Dies Screaming*. John Eppolito, intimately connected with this first film to employ *subcep*, recently invited me to a one-reel preview. Theory is that subconsciously seen symbols of death (skull), menace (snake), love (heart), etc., heighten the viewer's reaction, just as mood music and

lighting augment the emotional content of a film.

My Swedish correspondent, Hans Siden, airs me that a local company will collaborate with a USA filmmaker and go on location far up in isolated, frozen Lapland to do a Thing-type chiller about a creature that lands in a spaceship. Robert Burton has been set for the scientist.

"The Rag Thing" by David Grinnell is being developed as a movie idea by Sid Marcus, temporary title *The Crazy Quilt Terror*.

Films for the future: *Invasion of the Gargons* . . . IT FELL FROM THE FLAME BARRIER . . . *Night of the Ghoul* (Tor Johnson) . . . ON THE BEACH . . . *Attack of the Blood-Leeches* . . . VILLAGE OF THE DAMNED (John Wyndham) . . . *The Fly* . . . HIGH VACUUM (Charles Eric Maine) . . . *The Space Children* . . . CONQUEST OF INFINITY . . . *Debbie and the Demon* (introducing sci-fi fanne Starla Kaye in color) . . . COSMIC MAN . . . *Return from the River Styx* . . . RETURN TO KING SOLOMON'S MINES . . . *Tarzan's Fight for Life* . . . THE END OF THE WORLD (1962) . . . *Satellite in Blood* . . . FIEND WITHOUT A FACE (Amelia Reynolds Long) . . . *Curse of the Faceless Man* (Jerome Bixby) . . . THEY LIVED A MILLION YEARS . . . *The Night Creatures* (Richard Matheson) . . . THE LAST WOMAN ON EARTH . . . *The 7th Voyage of Sinbad* (Ray Harryhausen) . . . and Jules Verne's FROM THE EARTH TO THE MOON.

FRANKENSTEIN'S DAUGHTER is on the way!

Of making monsters there never takes an end:

THE MONSTER OF PIEDRAS BLANCAS will be manufactured by a former Universal-International makeup man . . .

MONSTER IN THE NIGHT will creep out of U-1 Studios . . .

HOW TO MAKE A MONSTER will, American-International prexy Jim Nicholson told me during lunch at Frascati's, feature no less than 17—count 'em, if you don't faint during the process—monsters. Many of Paul Blaisdell's most gruesome horrors—The She-Creature, Three-

Eyed Mutant, Marauder from Venus, etc.—will be reprised during the unfoldment of this shocker, which will have a flaming color finish . . .

And, to cap the climax, Paramount will cast caution to the winds and produce I MARRIED A MONSTER FROM OUTER SPACE!

—Forrest J. Ackerman

SCIENTIFILM MARQUEE is a regular feature. Columnist Ackerman may be contacted via the Beverly Hills, Calif., telephone exchange by interested contributors.



"Beamish, your lack of confidence is discouraging."



A department for all our readers throughout the world; here you can meet new friends who are interested in the same things you are. Listings are free, so send in yours today!

STUDENT

Joel Light: 999 Portola Dr., Monterey, Cal.

Age 14: "I'm a freshman in high school, interested in s-f, psi powers, and the possibility of extra-terrestrial life. Hobbies include stamp collecting, dancing, and swimming. Hope to hear from guys and gals my age."

STUDENT

Lois David: 2370 64th St., Brooklyn 4, N.Y.

Age 15: "I would like to hear from others interested in pop music, dancing, writing, ESP and physical sports such as swimming and skating. I like to make up crossword puzzles and exchange them by mail. I plan to study medicine in school."

NAVY MAN

Ronald D. Gear: AN 487-32-84, AT-

A School S-238 W-5, NATTC, Memphis 15, Tenn.

Age 18: "I enjoy science fiction and would like to correspond with other fans. I also enjoy modern music."

PAPER MILL WORKER

Charles R. Mann: David's Motel & Apts., Port St. Joe, Fla.

Age 24: "I'm married, and have two children. I'm interested in s-f, electronics, aviation, and writing. I work for a paper mill locally."

STUDENT

Toney Atkins: P.O. Box 58, Chickamauga, Ga.

Age 15: "I'm a high school freshman interested in astronomy, s-f movies and stories, pop music, writing, and am a firm believer in flying saucers. Hope to hear from other fans my age."

BOOKKEEPER

Margaret Ann Rodgers: 347 W. Spazier Ave., Burbank, Cal.

Age 26: "I love sports, both indoor and outdoor, and animals. Have my own horse, dog, four parakeets, and a siamese tomcat. I collect stamps, coins, bills, postcards, miniature wine & liquor bottles, books and maps. Hope to hear from others soon."

STUDENT

Raymond Potterf: Box 131, Colby, Kansas.

Age 16: "I am interested in mathematics, physics, chemistry, biology, human physiology, s-f, and natural phenomena. Currently working on spectroscopic and hydroponic research. Have a tape recorder. Hope others will contact me."

MARINE

Pvt. Henry K. Allen: 1684352, TTOC #6, OP. COMM. SCOL. CO., C & E Bn. MCRD, San Diego 40, Cal.

Age 19: "I'm wide open with my interests, particularly rock 'n roll, s-f, UFO, and generally anything not easily explained. Hope fans will write me."

SOLDIER

Daniel J. Immediato: SP/3, US 51-374-275, Company E, 4th Training Rgmt., Fort Dix, N.J.

Age 21: "I'm an s-f fan, with current interests the army—but others including painting, sculpture, sports, and dancing. Hope I'll hear from s-f fans with like interests."

STUDENT

Tom Milton: 324 17th St., Dunbar, West Va.

Age 14: "I'm interested in s-f, studying science—biology, and enjoy writing letters. Hope other fans my age will write."

HOUSEWIFE

Frances L. Light: 3715 N. Marshfield, Chicago 13, Ill.

Age 33: "I'm a housewife, and have two sons. I enjoy s-f and anything related to it. I also collect stamps. Will look forward to hearing from others—anywhere!"

STUDENT

Russ Bowers: 5500 60th St., Sacramento, Cal.

Age 17: "I'm interested in s-f, travel, rock'n roll, calypso, and sports, particularly ice skating. Hope other fans with same interests will write me."

BEAUTICIAN

Miss Stasiann Kozik: Rt. 2, Vitale Trail, Bound Brook, N.J.

Age 21: "I'm a beautician, with hobbies including writing letters, reading, traveling, dancing, and sports. Also like s-f, movies, and TV."

STUDENT

Ramon Lar: 75 Bourdon Blvd., Woonsocket, R.I.

Age 18: "My interests are varied, ranging from sculpture to creative writing. (The kind nobody under-

stands but the author!) I'd like to hear from other s-f fans."

STUDENT

Marshall Wilcoxon: 128 N. 11th Ave., Canton, Ill.

Age 14: "I mostly like s-f, astronomy, sports, rock'n roll, and horror movies. Will write to anyone who drops me a line."

FACTORY EMPLOYEE

Florence E. Walters: 8 Fay St., Taunton, Mass.

Age 22: "I work in a watchband factory days, and attend night school. My interests include UFO, time travel, and legends of Atlantis. I'm a collector of cat figurines, stamps, and records. Hope others in my age group will write."

STUDENT

Zenny Hybke: 318 Marquette St., La Salle, Ill.

Age 13: "I like s-f, and would enjoy trading s-f mags with guys and gals. Interests include tropical fish, some types of rock'n roll, fishing, and horror movies."

STUDENT

Sherry Barr: 5574 Van Buren, Chicago 44, Ill.

Age 14: "I'm interested in s-f and science, especially astronomy. Hope guys and gals my age will write."

AUTO MECHANIC

David E. Schnyer: 118 N. Burgher

Ave., Staten Island 10, N.Y.

Age 21: "I'm an auto mechanic by trade, with interests including s-f, stock car racing, motorcycles, and writing letters. Will answer all mail."

TELEPHONE CO. CLERK

Arlene Horowitz: 8746 23rd Ave., Brooklyn 14, N.Y.

Age 18: "My nickname is Shorty because I'm only 5 feet tall! I like pop records, and have a fairly large collection. Enjoy wrestling, roller derbys, and hockey on TV, and like all types of s-f. Am also a flying saucer fan."

STUDENT

George Wagner: 46 Harrison Ave., Bellevue, Ky.

Age 16: "I'm interested in s-f, UFO, science (chemistry) and space flight. I collect many things, including s-f. Hope to hear from other fans in this country and abroad."

COOK

Richard D. McMullen: 321 Knob Hill Ave., Redondo Beach, Cal.

Age 22: "I'm a cook in a local restaurant. Like s-f, time travel ideas, and ESP. Also space flight. Am a novice at chess and would like to correspond with others on the subject."

STUDENT

Miss Pat Burke: 7532 Krause Ave., Oakland 5, Cal.

Age 17: "I'm a high school student, and my interests include s-f,

extra-terrestrial life, music of varied types, sports cars, physiology, and dancing. I hope to hear from young people in any part of the world."

SOLDIER

Charles Szalay, SP2: Hq. & Hq. Co., 6th A/C, Fort Knox, Ky.

Age 24: "I'm presently doing supply work, and some radio & TV in the army. I'm interested in s-f, with other interests including electronics, books, and astronomy. Will look forward to hearing from others with similar interests."

COLLEGE STUDENT

James Cook: Men's Dorm., Morris Harvey College, Charleston, West Va.

Age 22: "I am majoring in business administration. Interested in ESP and hypnosis. Hobbies include swimming, music, and traveling. Hope to hear from other s-f fans."

GERMAN FAN

Manfred Alex: Schwabische Str. 3, Berlin W30, Germany.

Age 17: "I'm a member of the Science Fiction Club Europa, interested in all types of s-f, but particularly time travel. I like popular music, particularly your Elvis Presley, ESP, astronomy, and collecting s-f books and magazines. Would like to hear from American fans."

STUDENTS

Stanley Berkowitz: 10 Kilsyth Rd., Brookline, Mass. & Arnold Huber-

man: 1895 Beacon St., Brookline, Mass.

Ages 15: "We are writing together since our interests coincide. We are s-f fans, interested in UFO, strange happenings in general, hypnotism, and ESP. We would like to exchange ideas with other fans."

FACTORY WORKER

Miss Mary Jane Wilkey: 520 N. Thomas St., Gilman, Ill.

Age 22: "I work in a local factory. My interests include horses, movie stars, music of various types, and sports like basketball and football. I like dancing, TV, s-f, travel, and general reading. I would like to hear from fans in the Southwest and Farwest particularly."

STUDENT

Gary Neal: 1803 Siam Rd., Elizabethton, Tenn.

Age 16: "I'm a high school student with interest in sports such as swimming and diving. My main source of reading is s-f, and I'd like to hear from other fans."

SOLDIERS

SP3 Douglas O. Clark, Pfc Donald G. Martin, SP2 Maynard G. Person: Co. A, 8th US ARMY SIG. L.L. Bn. APO 59, San Francisco, Cal.

"We three buddies have the same interests over here in the Korea-Japan area. We like s-f, sports, music, electronics, and hunting. Most of all we like to write letters. Hope s-f fans will contact us—guys and gals."

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reports W. H. Boosinger, Sugar Creek, Mo.

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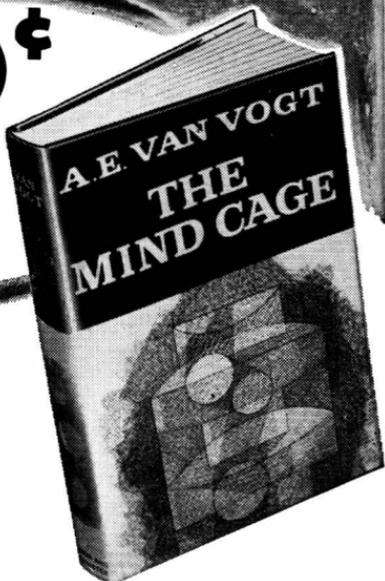
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