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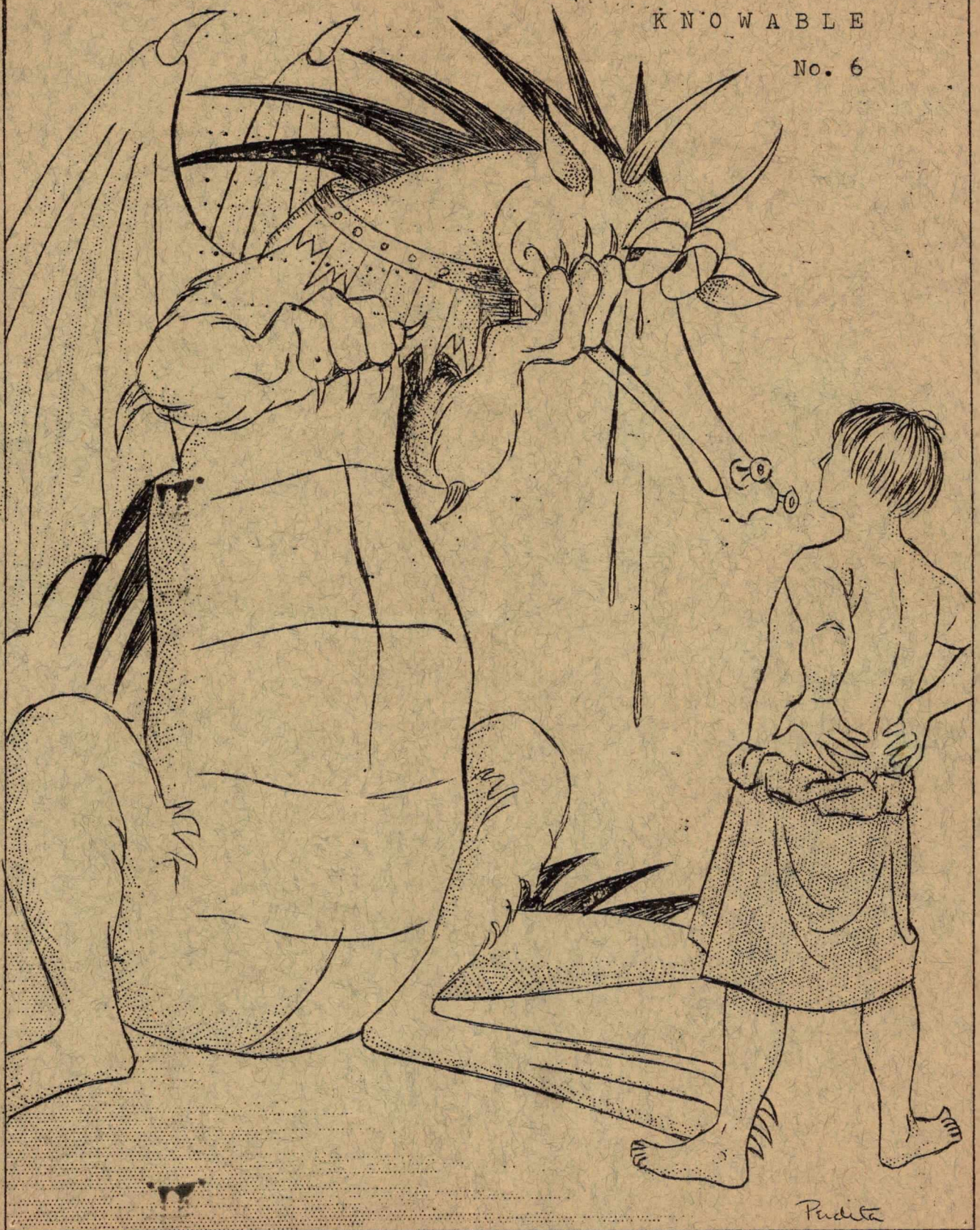


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KNOWABLE is a science-fiction and fantasy fanzine published at irregular intervals by John and Perdita Boardman, 592 16th Street, Brooklyn, N. Y. 11218, USA. It is available for trade, letter of comment, contribution, subscription (25¢ per issue, or 5 for \$1), because you are mentioned herein, or for any other good reason. Anyone may reproduce any material appearing herein, provided he acknowledges the source and sends me a copy. Please report address changes promptly; anyone who has not sent me an address change and whose copy comes back in the mail will be dropped from the mailing list.

This is

O At
P Great
E Intervals
R This
A Appears
T To
I Inflame
O Optic
N Nerves

45

Other OPERATION AGITATION publications are POINTING VECTOR, a personal newsletter of fact, opinion, and comment on just about any topic; and GRAUSTARK, a L.F. bulletin of postal Diplomacy. POINTING VECTOR is published on the same schedule and for the same rates as KNOWABLE. GRAUSTARK will be of interest to the rapidly growing number of fans of this board game of skill and intrigue. It is 10 issues for \$1; back issues are 5¢ each. It is published every two weeks, and I am now soliciting entries at \$2 each in another game of postal Diplomacy. Write for details.

The following OPERATION AGITATION publications have appeared since KNOWABLE #5

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RELATIVITY IN FACT, FICTION, AND FRAUD - I.

This is the first article in a series on one of the most important developments of 20th-century physics, the theory of relativity. From time to time a misunderstanding of this theory leads to a noisy controversy in the fannish press, or even a misapplication in a science-fiction story. It is hoped that these articles will contribute to a better understanding of relativity on the part of science-fiction enthusiasts.

Sir Isaac Newton's formulation of the laws of mechanics marked a milestone in the development of physics as pronounced as the more recent formulations of relativity and the quantum theory. Until his time, the relationship between kinematics and dynamics was not well understood. The motion of bodies could be observed in great detail, and described and summarized in such forms as Kepler's laws, which encompassed in three generalizations a great mass of observations of planetary motion. And forces could be measured, and balanced against one another. But it was Newton who formulated the laws of motion which bear his name, which show how a force will cause a body to move, or to change the manner of its motion.

Newton's first law, which states that a body will continue at rest or in a state of uniform motion unless a force acts upon it, wiped out a classical distinction between motion and rest. Until Newton's time it had been believed that motion was qualitatively different from rest. This led to an argument that motion exists in the universe only as a consequence of a "prime mover", and a lot of philosophical claptrap was developed about this concept. But Newton's first law, verified by experiment, shows that rest is merely a special case of uniform velocity where the magnitude of the velocity is zero.

Newton's second law showed how force affects motion. The rate at which the velocity of a body is changed is called its acceleration, and this acceleration is proportional in magnitude to the net force which acts on the body. The acceleration is in the direction of the force, though this does not necessarily imply that the body will move in the direction of the force. For example, the earth is attracted towards the sun, and is therefore accelerated towards it, but its motion is in a nearly circular orbit about the sun. The constant of proportionality between the force and the acceleration due to that force is the mass of the body. It is constant for all forces in Newtonian mechanics.

The third of Newton's laws describes the interaction between two bodies. The force exerted on the first by the second is the same as the force exerted on the second by the first in magnitude, and opposite in direction. This statement has led to the formulation of the "horse and

carriage paradox". If, it is claimed, the force exerted on the horse by the carriage is equal in magnitude and opposite in direction to the force exerted by the horse on the carriage, why does the carriage move forward? The apparent paradox is resolved if the reader notes that only the forces exerted on the carriage determine how it is accelerated. Forces exerted by the carriage, including the force on the horse, do not enter into the relation between the dynamics and the kinematics of the carriage.

In the subsequent development of physics, Newton's laws of motion were shown to hold for several different kinds of force: gravitational, elastic, electric, magnetic. A "Newtonian relativity" exists between two frames of reference moving with a uniform relative velocity. A physical system which obeys Newton's laws as seen from one of these frames of reference, will also be seen to obey these laws from the other frame of reference. In mathematical language, Newtonian mechanics are invariant under a transformation from one set of coordinates (x, y, z) to another set (x', y', z') , where $x' = x + vt$, $y' = y$, $z' = z$, and v is constant. Such a transformation is called a "Galilean transformation", and its effect on Newtonian mechanics is described by the phrase "Newtonian mechanics are invariant under a Galilean transformation".

There is no theoretical upper limit to the velocity of a body in Newtonian mechanics. The more work is done on a moving body, the greater its velocity becomes. Implicit in Newton's third law is the assumption that the force between two particles is along the line joining them.

At first the forces exerted on one another by electric charges seemed to obey Newton's laws, as did the forces exerted on one another by magnetic poles. However, during the early 19th century a number of physicists began finding interrelations between electricity and magnetism which did not agree too well with the mechanics of Newton. The experimental discoveries of Davy, Faraday, Oersted, and others were summarized by James Clerk Maxwell in 1864 with eight equations which described the interrelationships among charged particles and electric and magnetic fields.

Discrepancies between Newton's mechanics and Maxwell's electromagnetic theory perplexed theoretical physicists for the remainder of the century. Maxwell's laws were not invariant under a Galilean transformation. Unlike Newtonian mechanics, electromagnetic theory contains a special velocity, the velocity at which all electromagnetic radiation is transmitted through a vacuum. This same velocity $c = 300,000,000$ meters/sec crops up in the relationship between electrostatic and electromagnetic units of charge, a most unlikely place for it to appear. Mechanics offers an explanation for the presence of elastic waves in a material medium, and a relationship can be found between the physical properties of this material medium and the velocity of elastic waves in it. But if these ideas about elastic waves are applied to electromagnetic waves, it is necessary to assume that a vacuum is actually a material

medium. Physicists who accepted this contradiction found that it led to other contradictions, e. g., the Earth was neither in motion nor at rest with respect to such a light-carrying material medium.

Nor do magnetic forces obey Newton's third law. In fact, a charged particle moving in the x-direction which encounters a magnetic field in the y-direction will be accelerated in the z-direction. This acceleration is proportional to the velocity of the charged particle, another non-Newtonian state of affairs.

It is only natural that physicists at first tried to adjust the relatively new Maxwell theory to fit Newtonian mechanics. But by 1905 a number of such attempts had been fruitless. Albert Einstein was the foremost but by no means the only physicist who was led to the conclusion that Newtonian mechanics had to be adjusted to fit Maxwellian electromagnetic theory. Poincare, Lorentz, and Hasenöhrl also addressed themselves to this approach.

A transformation was found under which both Newton's and Maxwell's laws were invariant. Like the Galilean transformation, it relates the laws of physics as observed in two frames of reference moving at a uniform relative velocity with respect to each other. Unlike the Galilean transformation, this new transformation, which bears Lorentz's name, involves time as well as the spatial coordinates.

Let the x-direction be the direction in which one of these coordinate systems is moving with respect to the other. Then the laws of physics are invariant under the following Lorentz transformation:

$$\begin{aligned}x' &= \frac{x + vt}{\sqrt{1 - v^2/c^2}} & ct' &= \frac{ct + \frac{v}{c}x}{\sqrt{1 - v^2/c^2}} \\y' &= y & z' &= z\end{aligned}$$

Like Maxwell's equations, the Lorentz transformation contains c explicitly. If v is small compared to c , the Lorentz transformation reduces to the Galilean transformation.

A number of interesting consequences follow from the fact that this transformation relates the laws of physics in one inertial frame of reference to the laws of physics in another. (An inertial frame of reference is one in which Newton's first law holds. If one frame of reference is inertial, another frame moving at a uniform velocity relative to the first is also inertial.) For one thing, lengths and times measured in one inertial frame are not the same as lengths and times measured in another inertial frame. For another, c is an upper limit to velocities in relativistic mechanics. Furthermore, Einstein noted in one of the ground-breaking papers published by him in 1905 that energy could be regarded as theoretically equivalent to matter. If you looked at a physical system from two different inertial frames, a mass m might be thought of as equivalent to an amount of energy E such that $E = mc^2$.

These findings did violence to many traditional concepts of physics. When they were published in popular language, the debate went outside academic precincts. Human intuition is accustomed to deal with objects of unchanging mass and length, and with an even flow of time. Everyone knew that, the more work you did in pushing an object, the faster it ought to go. The measurement of the exact wavelength of a line in the spectrum of hydrogen usually does not concern anyone but physicists, but a surprising number of people took exception to the announcement that the mass of a body varied with its velocity according to the following equation

$$m = \frac{m_0}{\sqrt{1 - v^2/c^2}}$$

or that the sum of two velocities v_1 and v_2 is

$$\frac{v_1 + v_2}{1 + v_1 v_2 / c^2}$$

These objections have led to the writing of a great volume of literature, challenging one or another of the assumptions of Einsteinian mechanics. One of the purposes of this series of articles will be to examine some of these objections, particularly those that have appeared in professional or amateur science-fiction magazines.

The historical development of Newton's and Maxwell's laws, and the special theory of relativity, is described by E. T. Whittaker in History of Theories of Electricity and the Aether. However, Whittaker was an anti-Semite, and consequently downgraded the contributions of Jewish scientists. A concise account of how the special theory of relativity alone can be made to explain the behavior of light is given by Wolfgang Panofsky and Melba Phillips in Classical Electricity and Magnetism, chapter 14.

CONTINUED IN THE NEXT ISSUE

THROUGH HILBERT SPACE WITH SWEET FANNY ADAMS - VIII

In 2541 Fanny Adams received a Feghoot Fellowship for historical research on Restoration England, and traveled by time machine to that period for fieldwork. During her residence there, she met and fell in love with Isaac Newton. During the years that they lived together, he worked out the physical laws which bear his name, and she bore him two daughters, Ephrosynia and Emma May.

One day a quarrel developed between the girls while Newton was trying to work. Just as the elder hit the younger, Newton called out, "Fanny, how can I work out a simple formulation for my second law when those kids are hollering? What's going on in the nursery, anyhow?"

Fanny replied, "Effie quells Em May."

SCIENCE MADE TOO EASY - VI

V. Biology

by Judith Orlove Glattstein

Biology is concerned with life. Biology also includes chemistry and physics as biochemistry and biophysics. So far there haven't been any complaints from chemists and physicists. (Biochemistry is a further refinement of organic chemistry.) Biologists are afflicted with alphabetitis, like the Pentagon - DNA, ATP, PABA, LSD, etc. This is because biologists can't spell.

Biology is divided into two groups: botany and zoology. The first gets all the plants and the second gets all the animals. Nobody knows what a virus is, or even if it is alive, but zoology gets it anyhow.

Biology has a counterpart of the periodic table. This is known as taxonomy. This starts out with the animal kingdom, or the plant kingdom and works down into smaller and smaller groups, or the reverse of chemistry, which starts with elements and builds up.

Beginning biology students learn that the answer to any question in biology can be answered either "photosynthesis" or "osmosis". Advanced biology students learn that we don't even know too much about photosynthesis.

Animals are divided into those with backbones (vertebrates) and those without (invertebrates). Invertebrates are not to be confused with characterless people.

Rare animals are either hard to find, imaginary, or extinct. Some rare animals are man-made (not woman-made) like mules or ligers. Nature gets her innings in the fact that these hybrids are usually sterile. If more women were sterile we wouldn't have a population explosion.

Biologists have learned to take things apart very well. They even have micromanipulators to take cells apart. So far they aren't too good at putting things back together.

As pretty well all existing plant and animal life on earth has been discovered, biologists dig up dead animals (paleontology) or create new ones (experimental genetics).

*

In response to a surprising demand, the six installments of "Science Made Too Easy" will be collected in a separate publication. This publication will be available sometime in January 1964 at a price of 15¢.

*

East Coast fans are again reminded that travel expenses to the WorldCon in Oakland on Labor Day weekend, 1964, can be reduced if a group of us can charter a plane for the trip. If you want to get in on this trip, drop me a line. Those interested will be kept posted on the state of negotiations for a charter trip.

THE STORY

Each author who undertakes to write a chapter of The Story has complete freedom to do what he wishes in his chapter. When the present total of 21 chapters has been printed in KNOWABLE, The Story will be opened to further volunteer authors.

SYNOPSIS

Sir Tinly the Purest and his squire Dumbert have recently returned to the royal castle, after a Quest on which Sir Tinly has slain the giant Borborygmus. A poor old sot of a dragon has followed them home, pleading with Dumbert to arrange a match for him with Sir Tinly. The giant Groothulbore is about to foreclose the dragon's lease on his cave and evict his family, unless the dragon pays up a huge back rent which includes several knights. But no knight will fight the dragon because his fires have gone out with too much boozing.

Ignoring the dragon's pleas, Dumbert composes a bawdy riddle which he tells to his friend, the court wizard Lysenconius. But when the wizard tells the riddle at the royal supper table, and names Dumbert as its author, the puritanical Sir Tinly is enraged, and Dumbert flees from a threatened beating. He encounters the beautiful young witch Lilith, who deserts her middle-aged lover Sir Cumference to seduce him. When Lilith learns that a dragon is in the castle, she flies off with him after giving Dumbert a strange talisman which identifies him as one of the "Sons of Earth". When he returns to his quarters, Dumbert learns that the dejected Sir Cumference has committed suicide.

The next day Dumbert leads Sir Tinly a hectic chase through the royal castle as the Pure Knight tries to catch and punish his mischevous squire. Dumbert takes refuge in the royal pantry, where he takes part in a poker game which several squires and scullery lads are playing with a tarot deck. Aided by loans from a Jewish money-lender, Yankel ben-Kalvah, Dumbert wins a huge pot from an ill-tempered scullery lad named Gasphilt who is a distant illegitimate kinsman of the king. As Dumbert collects his winnings, Sir Tinly reappears, and the squire takes to his heels.

CHAPTER X

by John Boardman

An elaborate system of protocol was rigidly established at the royal court. The Minister of State, Hugo Fürst, an imported Swiss nobleman who presided over such matters, had a stiffly continental sense of propriety which guided him in drawing up the seating or marching arrangements of the festivities under his direction. Indeed, Herr Fürst had, upon one memorable occasion, forcibly prevented Lord Holpus, a mere viscount, from marching next to the beau-

tiful young Duchess of Lollbridge in a royal procession; that Lady Lollbridge had raised a lump on the head of the conscientious minister had in no way detracted from the dignity of his bearing.

However, the schedules of Herr Fürst did not make up the entire social life of the court, and Dumbert, resting briefly during his flight from Sir Tinly, recalled this as he gazed at the recently posted Order of Precedence (Male), 45th Revised Edition.

It read:

1. His Majesty the King.
2. Prince Saturninus, Heir to the Throne.
3. Pandulph Cardinal Puff, King's Bishop.
4. Gandulph Cardinal Guff, Queen's Bishop.
5. Duke of Porc.
6. Duke of Oilcaster.
7. Duke of Flighcaster.
8. Duke of Smellington.
9. Other dukes, in order of age of their titles.
10. Marquis de Cinema.
11. Other marquises, in order of age of their titles.
12. Earl Ybird.
13. Earl Itubed.
14. Earl Iturise.
15. Earl of Hereford.
16. Earl of Jersey.
17. Earl of Guernsey.
18. Earl of Alderney.
19. Earl of Milking-Shorthorn.
20. Count Miyin.
21. Count Inghouse.
22. Count Uptoten.

The list continued downwards, through viscounts, barons, baronets, ministers of the crown, ambassadors, common or garden knights, gentlemen of the cloth, and the queen's relatives. Most of the listings were self-explanatory; the rest Dumbert knew from court gossip. Number 76, for example, was "Steward of the King's Tapestries"; it was commonly known that this sinecure had been created for an illegitimate son of the queen's younger brother, Baron Backside. Similarly, number 91, "High Warden of the Marchlands of Jerusalem", had been created so that its holder could be stationed several thousand miles from the queen's bedroom.

A more accurate list, the squire reflected, would rank the people of the court according to their prestige and influence. It would have run something like this before Sir Cumference's death:

1. Sir Inge, Queen's Champion, Paramour by Special and Apparently Permanent Appointment to the Queen.
2. Sir Tindeth, King's Champion, Unhorsed of Knights.
3. Sir Cumference, Senior of the King's Company of Knights, Lord Champion Winebibber and Collector of Dirty Stories.

4. Pierre de Bonchance, Procurer to the Court.
5. Lord Tassolyard, Arbiter of Taste.
6. Rhett Coldeck, Master of the Pastboards.
7. Roger Rosenose, Friar of Hammonegs, Confessor and Poacher to the Court.
8. Yankel ben-Kalvah, Moneylender to the Court.
9. Messire Lysenconius, Royal Wizard and Magister in Artibus, Only Man Ever to Have the Last Word with Lilith.
10. - 362. All others.
363. His Majesty the King.

Dumbert wondered whether his name would ever be entered on such a list. He reviewed the accomplishments which had given these men such prestige, speculating on his own abilities in those directions.

Lover? His night with Lilith had not encouraged his concept of his masculinity; his stay in her bedroom had been more as pupil than as paramour. The intransigence of Johane, the Duchess's second scullery maid, and other sundry servant and peasant girls whom he had encountered during his travels with Sir Tinly confirmed this low opinion of his abilities as a lover; an indefatigable boudoir campaigner like Sir Inge could not be emulated by an introspective, scholarly squire.

Champion? Dumbert was at present seventeenth in the 18-man Little League tilting competition.

Bon vivant? Two tankards of wine made him sleepy, and besides, it cost money; also, he could never remember a funny story from one day to the next.

Procurer, gambler, arbiter, and moneylender were all ruled out by the special skills or resources required. Piety and poaching were also beyond his capabilities as separate or combined activities, although they seemed to be perfectly blended within the rotund form of the Friar of Hammonegs. He did not possess the diligence necessary to the study of magic, and Lilith not only had the last word with him, but left him speechless. Therefore...

A terrific blow caught Dumbert across the backside, and the squire felt Sir Tinly's hand grasp him by the scruff of the neck.

"Aha, you young reprobate!" The Pure Knight snapped. "I'll teach you to spread scandal and disgrace the knightly order to which you aspire!" He jerked down Dumbert's breeches, and flailed his bare buttocks with the flat of his sword. With the first blow the squire resolved to take his punishment in noble silence, but by the fifth he was howling loudly. Finally, after having raised a ruddy glow on his squire's podex, Sir Tinly sheathed his sword.

"Let that be a lesson to you!" he said sternly. "And no whimpering! When I have made you a knight, you will thank me for such corrective discipline as I am forced to give you. And now, go get Puritas ready for a journey tomorrow."

"Have you a quest, sir?" Dumbert asked meekly.

"Aye. The King has this hour appointed me to travel to the Old Wold and slay the foul troll 'Yog-Thuthuthoth, who prowls the fogs at night. Make you haste!"

Dumbert first scurried off to a jakes, where he applied the lotion which Lysenconius had given him. He then proceeded to the stables, and spent the rest of the day polishing armor, currying Puritas, sharpening weapons, and playing poker with the stable-boys. (His fantastic streak of luck earlier in the day did not hold, and he lost tenpence and a farthing.) There was barely time to change into a clean tunic for dinner when he had finished, but all was ready to go on the morrow.

The squire ate dinner moodily and silently that night; fortunately, however, Lysenconius's lotion enabled him to eat sitting down. The meal was mutton, which he detested, and instead of cider the squires were served an even sourer and weaker beer than that of the Cone and Shine. To make matters worse, the youths were served that night by a new scullery maid, young and pretty, who to judge by her frosh, familiar accent came from Dumbert's own part of the Kingdom. By the time he returned, she would probably be either the definite property of another squire or a scullery lad, or else pregnant.

Dumbert retired to the squires' dormitory immediately after dinner, knowing that Sir Tinly habitually rose before the sun when on a quest. He slipped off his tunic and shoes, and was just about to crawl into his cot, when he heard a snorted giggle from a corner of the room. The dragon sat there, tired and weak-kneed, with a bleary look in his red eyes, and a keg worn round his neck like a collar.

"Hello, young shir," greeted the dragon. "I - hic - I hope I don't inconveniensch you, coming here at thish time."

"Eh?" said the squire sleepily.

"Truth ish - hic - I heard Shir Tinly the Puresht an' you wash leavin' on a quesht tomorrow, an' I wanned to remind you that - hic - you promised to get me a bout with him."

Dumbert did not remember promising anything of the kind. "You've been drinking again!" he said sternly.

"Yesh, itsh true," the dragon said ruefully. "Jush a - hic - irre - irre - unre - hic - zhenerate reprobate, that'sh me. Got shtinkin' drunk, run aroun' with looshe wimmen. Jush a worthlesh, no-good lizard." He sank his head between his paws, drooling great tears (after dragon fashion) on the floor. "By the Ol' Serpent, wotta trip that wash. Wotta woman! An' I'll say thish for your king," he continued, "he keepshe besh: damn winesheller in Chrish - hic - Crish - hic - Crishendom!"

"What have you been drinking?" exclaimed the squire. By the light of a taper he examined the keg around the dragon's neck. "By all the saints! This is a barrel of the King's private stock of mead, imported from Iceland! Where did you get this?"

"After I came back from that trip with Lilith, I went down inna kitchen, tryin' to find out where you shtayed," the beast replied sleepily, "an' I shaw a fella carryin'

shum bottlesh outa the wine shellar. Sho I ashked him, an' he dropped the bottlesh an' ran - washte o' good wine, if you ashk me. Sho, rather than shée all that good wine go to washte, I lapped it up - wunna the advantages of bein' a dragon - an' went on in to shée what elsho they had. There wash shix kogsh of thish." He hiccupped, filling the room with an odor of mixed honey and sulphur.

"The king will be furious," said Dumbert. "You'd better leave the palace at once."

"Can I - hic - come with you tomorrow?" pleaded the dragon. "Then, after Shir Tinly killsh thish tröll, maybe he can fight me."

"Okay, okay, we'll see," replied the squire. "But you can't spend the night here. I'd never get any sleep, with you belching sulphur, and the other squires would raise a fuss. There's empty oat-bin just inside the east door of the stables. You can sleep there."

"How do I - hic - get there?" asked the dragon.

"You know where the kitchens are? Well, you leave through the scullery maids' sleeping quarters, cross the hofyard, and there you are."

"Thanksh, young shir, thank you very - hic - mush," said the dragon as he crawled out of the dormitory. Dumbert settled back into his pallet and tried to get to sleep. A few minutes later a series of horrendous shrieks from the scullery maids' quarters told him that the beast had found the right way to the stables.

CHAPTER XI

by Judith Orlove Glattstein

The sun rose bright and early; too early, Dumbert thought, as he sleepily got dressed.

"Dumbert, where are you? By Heaven's name, hurry up or I'll give you some more of the same treatment you had yesterday, you misbegotten beast. We go on a quest or have you forgotten?" Sir Tinly the Pure called in a gentle voice. "Now hurry up or you'll make me late, and if you do" He left it to a suggestive silence.

Two minutes later, they were out the castle gate, leaving on the quest. The dragon was along too, having been booted out of the stable by Sir Tinly. He limped and looked slightly bewildered, due to his binge the night before. Dumbert felt sorry for the poor thing, and fell back.

"Here," he said gently, "Lysenconius the wizard gave me this. Try it and see if it helps your hurts."

"I'll never forget this, never, truly I won't," sobbed the dragon, quite overcome.

He took the proffered bottle and swallowed it whole while Dumbert looked on, rather startled.

"Thank you, sir, I'll never forget this. But please see if you can't get me a fight with Sir Tinly, please?" The dragon looked so ridiculous on its knees that Dumbert laughed.

"Dumbert, what are you doing? Come here immediately,

this instant, do you hear? You should learn how to go about questing." Sir Tinly roared this out. "And be quick about it, understand?"

Dumbert understood. He moved fast, up to Sir Tinly's side.

For lunch, Sir Tinly decided to stop at an inn, Ye Signe of Ye Bleue Boare Inne. They stayed for several hours as a fierce and mighty storm blew up. Black clouds were piled, layer upon layer, tier upon tier, and thunder and lightning rumbled and played, crashing and flashing, through the black heavens. It was terrible.

Dumbert still had some money on him, and decided to see if he could spend any. That serving maid, for instance No, she was a wee bit too tall; besides, Sir Tinly was looking his way. Oh well, Fate is always cruel. Just then came a knock on the door. The innkeeper opened it and a slave trader came swaggering in.

"My name is Foulbrutis. Set before me your best food and wine."

Dumbert thought that he had never seen an uglier man. His forehead receded and his hair, iron gray in color, hung over his eyes, which were brown and shifty. He stood about 5 feet 9 inches, and had the ugliest temper of anybody.

"Have you any scraps or garbage I can give to my slaves? If so, throw it out to them," he thundered.

"But, sir, could they not come in, out of the fierce-some storm. I would be very glad they do so," said the innkeeper, an old and kindly man.

"As you wish, as you wish, but don't unchain them, whatever you do," he muttered. Under his breath, he said, "Stupid, sentimental fool."

The man went to the door and called, "Come in, people, come in and dry yourselves."

About twenty of the most dispirited people Dumbert had ever seen filed in. They were chained hand and foot, clothes in rags that were a bare cover for them, most of the men with ragged, uncut hair and beards. All save the last looked at the ground as they filed past Dumbert. The last one was a man well set up, about six feet three inches tall, with black hair, blue eyes, and scars crossing and recrossing his back. He was about twenty years of age, and stood erect.

Foulbrutis called out, "Hey you, Deedah, get your eyes down or I'll beat you within an inch of your life, by God, I will." He got up and unhooked a great bull-whip from his belt. He cuffed the unfortunate slave around the head and ears, unhooked him, and tied him to one of the hooks in the low roof beams. The whip snaked out five, six times and still there was no sign of a let-up.

Dumbert jumped up, aghast at the proceedings.

"Stop it, stop it, do you hear," he cried out. Foulbrutis turned to him and with a sneer on his face said, "What is it; do you wish to buy this slave?" He kicked at the unfortunate slave, grinning at the pain he caused. "I, I," Dumbert stopped at the look of suffering on Deedah's face. "I do, sir; how much do you want for him?"

"Well, now, he's a good slave, young and healthy,

strong too. Say, fifty denarii." "What is that? I offer ten shillings."

"I don't know about that; what more do you offer?" Foulbrutis snarled, running his whip through his fingers.

"Fifteen shillings, top price. Take it or leave it,"

"Done, he's yours. But let me warn you," Foulbrutis grinned, "he's killed ten men with his bare hands."

Dumbert was visibly staggered. What had he done but buy a slave he had no use for, and a killer to boot.

CHAPTER XII.

by Judith Orlové Glattstein

"Well," remarked Sir Tinly, "what are you going to do now? You have to take care of him yourself, you know. Ugly looking brute, isn't he?"

Deedah stood by as this was said. What else could he do but act passive? "But," he thought, "give me a chance I can take, and I shall kill these pig things and escape."

Dumbert stood up and took another look at Deedah. He was not, as Sir Tinly said, ugly. In fact, many women might find him well favored. He stood erect, like a king, not like a begging, whining slave, though he was one. In fact, you might say that he was one of the barbarians' gods, he was so tall and handsome.

Dumbert didn't know what to do at first. How did you go about addressing a slave? You ordered him about, true, but Deedah didn't seem to be the type of slave that you ordered about. Besides, that isn't how you get to know people. All this ran through Dumbert's mind quite rapidly. Then he decided to try and make friends with him, as he would with an ordinary boy. After all, what harm could come of it? None, unless Deedah took affront. But who could tell unless they tried?

"Hello Deedah; how are you?" Dumbert regretted it as soon as it was out. It sounded so silly, but it was out already, and nothing could be done about it. But Deedah didn't hear; he was crumpled on the floor, unconscious.

Dumbert called to the innkeeper. "Sir, if you please, bring water and soft, clean clothes to clean and bandage his wounds. But hurry, for he is losing much blood!"

"Yes, young master, at once," the innkeeper babbled, afraid. "You, boy, apprenticed serf, get clean rags and some warm water, now be quick about it. Move!" The lad moved quickly out of sight, accompanied by a swift kick to his rear.

"To you, sir," this was addressed to Dumbert, "you have bought a strong slave. It is a wonder how he stood so long. He must have great endurance. But be careful that he doesn't attack you."

Then Dumbert, kneeling on the floor, wiped the blood from the back of the slave Deedah. After the wounds were cleaned and bandaged, Dumbert went over to where Foulbrutis was seated. "Will you please tell me what you know of my

slave, please?" Dumbert moved upwind when he got a whiff of Foulbrutis' body odor.

When Foulbrutis saw this he grinned. "Well, what do you want to know about him? How many men he has killed or maimed and their names or what?"

"About his parents and where he was born and such, if you know it."

"I don't know over-much about his parents save for his mother," Foulbrutis grinned and ran his fingers through his greasy hair. "She was a Pict and a cute one too. Knew all the tricks. Many times did I bed down with her. As for his father," he shrugged, "he was a stranger to me. He looked a lot like Deedah. Same proud carriage and everything. He called himself Conan. Said he came from some country called Aquilonia. They never did get married. As for Deedah, he's 22, and a proud devil. If he will work you have a bargain. But he never does. And be careful of what you do to him, for his father claimed to be of the magicians of Cimmerania, those who eat of the black lotus, the evil ones."

Dumbert fell back and crossed himself. Those devils of hell! They took the black lotus only to revive their evil powers. No sane man would touch it. And it was rumored that the powers passed from father to son. And if this was true, Deedah held all the wicked powers of his father! Why, in Heaven's sacred name, had he done this foolish, stupid thing?

By this time Deedah had revived, and was looking stoically at the ground. The storm, also, had abated, and the sky was clear and blue.

"Dumbert, you dolt. Come, we leave on my quest. Take that Deedump character, or whatever his name is, and let us leave. We must be in Kingsly by sundown, and it is 40 miles away. Now hurry," Sir Tinly roared out in his normal tone.

"Come on," Dumbert said gently to Deedah, "we go with my master, Sir Tinly." Deedah got up and sullenly followed Dumbert to the door. Dumbert thought sadly of the serving maid. "Bet she woulda been easy," he muttered to himself. But on to the horizon, and see what the future brings.

CONTINUED IN THE NEXT ISSUE

The first survey of the science-fiction and fantasy of 1963 is the "In My Opinion" poll of S-F Times. For copies of the poll form, write to James V. Taurasi Sr., 119-46 27th Ave., College Point, N. Y. 11354. The poll includes a question on non-fiction articles, monster fan questions, preference of prozine format, and "Would you like to see another author carry on the Burroughs characters?" (Honest!)



THINGS THAT GO BUMP IN THE MAILBOX

GEORGE COWGILL, 99 Hancock Street, Cambridge 39, Massachusetts: Your insight into the parallels between the Arthurian giant and his treatment and that of the southern (?) racist attitude about Negroes is quite good and rings very true to me. However, I see no special need to postulate non-Indo-Europeans to provide the "giants" (incidentally, I'm pretty sure that the surviving non-Indo-European speakers of Europe --- the Basques --- have their own "giant" stories which are I imagine pretty much like those of their neighbors). The whole myth of the lustful monster indicates things about the people who have the myth, not about their neighbors. There would always have been plenty of "furriners" around, not right around here, but not too far off, on whom the fantasios could be projected, whether they were Indo-European speakers or not.

I see no need to invoke a hypothetical ikon, of a form which so far as I can tell no one has ever seen, in order to account for the story. In fact, I'm quite uneasy about your whole set of notions about the "pre-Indo-Europeans" and their "White Goddess". I don't know where all this comes from, but maybe from Robert Graves? It all seems slightly fishy to me.

Although I believe no one can be sure, there is every reason to think it plausible that the early pre-plow horticultural cultures of Europe were matrilineal, as are the modern Hopi, or were until recently the Iroquois, or as are the Bemba and many other tribes of Africa. That is, there were corporate kin groups in which descent was traced through women, not men. It might even be quite reasonable that the characteristic household was a group of related women --- sisters, their daughters, husbands of these, and immature children of both sexes; as was found until the late 19th century among say the Mandan or Hidatsa. But this does not mean that there was anything like a matriarchy, with women actually running things. It is true that matriliney is very rarely, very likely never, found with the extreme subordination of women found supposedly in some patrilineal societies (though that too is often exaggerated --- perhaps it would be better to say the extreme sexual jealousy and possessive attitude toward women of some cultures, such as urban Arabs or in Spain or south Italy or Sicily --- it is real enough that in many of these societies, as in northern Europe too, the legal position of men and women were decidedly different.) But the old idea of a real full blown matriarchy seems to be a myth; anyhow, I know of no such cultural arrangement ever observed by reliable ethnographers. Maybe the closest approach would be something like the very independent (in certain contexts) women entrepreneurs in West African markets.

On the contrary, one of the quite interesting things about matrilineal descent groups is the fact that male status and dower do not pass from father to son, but by way of women, so that it is commonly from mother's brother to sister's son. You might be interested in looking at a

recent book by Kathleen Gough and David Schneider, Matrilineal Kinship, which explores and describes a good deal of this. Sometimes it leads to things such as avunculocal residence, where a man goes to live with his mother's brother, bringing his wife with him, so that after all it is a group of matrilineally related men, rather than the women, who belong to the same descent group and live and work together. Or you may find a preference for certain types of cousin marriage which, when you diagram them out, work out that a man's grandson belongs to his own descent group, and hence, after skipping a generation, things are back in the man's matrilineage again. (His son, of course, has to belong to a different matrilineage because marriage is outside the lineage and the son belongs to his mother's lineage.)

Ritual king-killing is certainly not particularly common in any societies, matrilineal or otherwise. There is, of course, plenty of evidence in Fraser alone that this custom did exist (with a mock king) in parts of Europe until quite late - late enough that it makes one wonder offhand if it weren't possibly an Indo-European development. Rather reminds one of the custom of pampering and fattening up prisoners among Amazonian tribes (whose descent system I'm not sure of at the moment) and even adopting them as relatives before killing them.

Anyhow, also rather offhand, I rather think that plow agriculture, which is rarely associated with matriliney today, much more with patriliney (as you will see in the Gough and Schneider book), may well have come into Europe quite some time before Indo-European speakers.

The last American Anthropologist has a nice, though rather formidable, article by Marija Gimbutas, attempting to assess relations between archaeologically known cultures and Indo-European speakers. Her thesis is that the Indo-European speakers were central Asian nomads. This is the kind of assertion that can hardly be definitely proved, but I think it quite plausible - much more plausible to my mind than other recent notions, such as Paul Thieme's (publicized in Scientific American a few years back), which puts the Indo-European homeland around the Baltic. If she's right, one would almost think that the Indo-European onslaught on Europe was the first, and most successful, eruption of central Asian nomads, of which later examples were the Huns and the Mongols. (There is a fine article by Owen Lattimore on the later in a recent Scientific American.) First, one supposes, because previously horse-riding hadn't been developed, so there were no mounted nomads around.

WALTER BREEN, 2402 Grove Street, Berkeley 4, California: Many people speak of matriarchy, to be sure, when they mean a matrilineal society in which women are not subjugated. I do not know anyone who seriously maintains that women ruled such societies; not even Graves makes any such claims. More often, according to him, the king in such a society obtained his title by marrying the youngest daughter of the previous queen, and -- as in the cases of David and of Solomon, among others -- a king extended his dominions by

similar plural marriages.

As for iconotropy, this seems to me a simpler hypothesis than any other which could account for the forms myths have taken. Actually locating the icons (or ikons, if you wish) ((I so wish. Transliterating "kappa" with "c" often leads to ludicrous pronunciations.)) is not impossible in all cases; the existence of even a few such will naturally strengthen Graves's case for the rest of his reconstructions. Graves includes photographs of Mycenaean sealstones (constituting icons in his sense) in more than one of his books; and -- in identifying Jahweh with Dionysos Sabazios of Thrace -- describes a unique Greek silver coin found at Gaza depicting the identification even down to the Tetragrammaton. I took the trouble to check his reference, which is one of the volumes of the British Museum Catalogue of the Greek Coins of Palestine, compiled by George F. Hill, and the coin is exactly as Graves describes it. In an age in which literacy was the exception rather than the rule, religious instruction was most easily done in pictorial form, the pictures being kept in a certain order and explained by priests of hierophants to the neophytes or other worshippers less advanced or less literate. Seizure of a shrine where such pictures were kept (as sealstones, gems, vase paintings, paintings on tablets, engravings, etc.) would almost inevitably mean misunderstanding by the captors of the scenes thereon depicted, especially if the pictures were originally meant to be read boustrophedon as were many early Greek inscriptions. ((Literally, "boustrophedon" means "as the ox plows". Such inscriptions are read left to right in one line, and right to left in the next.)) This is the iconotropy theory in a nutshell; so stated, it seems simple enough. Graves's methodology -- reducing myths to pictorial form, then rereading the pictures in boustrophedon order -- is spelled out in detail in his Adam's Rib. At the moment, the results so obtained are at the very least of great interest, and in some instances make sense out of what was earlier only nonsense, or what Christians call "mysteries of faith, beyond human understanding". I fail to see any reason why pure nonsense would have been given so much importance in an age when literacy was exceptional and when something had to be terribly significant to justify expense of cutting it into sealstones or coin dies or the like for long-term use. It follows that nonsense would most likely be a reinterpretation of what had earlier made sense, as best the reinterpreters could do it, preferably in terms of their own god or gods.

Ritual king-killing may or may not have been an Indo-European development, but if so it apparently goes back to Aurignacian times. Graves describes several Aurignacian cave paintings depicting it. In the most explicit of these, nine dancing Maenads -- three young, three mature and three old hags -- surround a young "Dionysos", preparing to tear him to pieces and devour him, exactly as in the rituals described in Frazer for the slaying of the king's surrogate or tanist at the winter solstice. (The White Goddess, 1948 edition, pp. 133-332.) Cowgill's "mock king" is probably the same surrogate or tanist. "It was expedient that one man should die for

the whole people" or however the quote goes.

((An echo of this ancient religious attitude was heard as late as the French Revolution. On the way to execution, King Louis XVI is reported to have said, "I die that France may live."))

CHARLES F. WELLS, Apt. #1, 200 Atlas, Durham, North Carolina: That "any illiterate slob is encouraged to interpret scripture with the same authority as a man who has spent a lifetime in study" (KNOWABLE #4, p. 20) is in the tradition of Protestantism is a half-truth in several ways. ((The remark was made in a discussion of the religious backgrounds of fans, and referred to an anti-intellectual attitude in some Protestant sects.)) Since this is a subject in which I have a bit of interest, I'd like to put most of my comment-effort on KNOWABLE #4 into some blatherings about that.

In the first place, even if your words are unloaded of their connotations, it is still a half-truth. That is, it is still an exaggeration even to say, "The Protestant tradition encourages everyone to read and interpret the Scriptures as he sees fit -- there is no need for anyone to accept another's interpretation, no matter how learned he may be." Loaded that way, there are still many Protestants who would not assent to the statement. Martin Luther, for example, would not have. He very strongly opposed the Anabaptists and others who attempted to make theology entirely an individual matter -- he wanted theology left to the pastors. The Calvinist churches share his sentiment, for the most part. (And in this country, Presbyterianism is noted for the schools it has produced and the less-shameful-than-most intellectual tradition it has.) The Anglicans, if they can be called Protestants, also generally assume that theology is for those learned in the subject.

The Protestants who have most assiduously promoted the individual-study concept have been the Baptists -- and those innumerable groups more fundamentalist than the Baptists (usually). Most Baptists would agree wholeheartedly to my rewording of your statement. And I am sure you are aware of the poor intellectual reputation of the Baptists.

Most Unitarians would agree to that statement, too. Do you consider them to have a poor intellectual reputation? And why aren't the Lutherans as well known in this country for learning as the Presbyterians are, given my remarks above?

These questions, I think, point up a second way in which your statement is a half-truth...the consequences you draw from it are not intimately connected with it. The reasons some denominations have an intellectual tradition and others do not is, I believe, primarily sociological and has little to do with whether or not they encourage individual interpretation of the Bible. The Unitarians are the modern descendants of an upper-class religious schism; the Anabaptists, the ancestors of today's Baptists, were a lower-class movement. The Presbyterians, in this country, tend to be upper-middle-class; the Methodists, lower-middle-class. Their intellectual reputations vary accordingly. Spanish Roman Catholics have high

respect for authority and a poor intellectual tradition; German Roman Catholics exactly reverse that pattern -- this latter, of course, is not an argument for my sociology theory, but merely one against your point of view.

There is one last way that your statement is perhaps misleading. Although all Southern Baptists assert a belief similar to the one I stated above, they often are very lax about putting it into practice. As one who was raised a Southern Baptist, I can assert with confidence that very few Southern Baptists consider themselves autonomous Biblical Scholars. Most of them are just as slavish about accepting whatever their minister says as gospel as any Catholic is about accepting what his Pope says. Yet the Southern Baptist intellectual tradition is poor -- because the ministers believe all that stuff about individual interpretation and "inspiration" and therefore undervalue education seriously.

I'm enjoying KNOWABLE immensely (except that damn story...)

((The intellectual tradition of Roman Catholicism is based on one central interpretation which is radiated outward through the church's intelligentsia. This has led, over the centuries, to the development of a rich but circumscribed intellectual tradition. Jewish intellectual tradition is based upon deliberation by well-read scholars about doctrine and tradition, and has a great many ramifications. By contrast, Protestantism has a relatively sterile intellectual tradition. The two major exceptions to this, which Wells cited, do not contradict this generalization. Anglicans regard themselves as Catholics separated from the Roman Catholic communion, rather than Protestants as the term is commonly understood. And Unitarians, since they do not recognize Jesus as God, do not classify themselves as Christians.

((Martin Luther took the first step in decentralizing the Roman Catholic intellectual tradition. The Anabaptists simply took the next step. Towards the end of his life, Luther was horrified at the anti-authoritarian movements he had set up in religion and politics. He endorsed the brutal suppression of the peasants by the German princes, and wrote the most vicious anti-Jewish propaganda to be seen in Germany until Hitler's time.

((I cannot see the workings of a particularly intellectual tradition in contemporary Calvinism/Presbyterianism.

((A few years ago a Scientific American survey showed that a disproportionately large number of scientists are of Jewish birth, a disproportionately small number come from Roman Catholic families, and many have departed from any religious belief. The above-mentioned Jewish scholarly tradition is similar in many respects to the interplay of ideas in the sciences, which is why the Jewish intellectual tradition carries over so frequently into secular topics. The more restricted intellectual tradition of Catholicism does not permit this transition so easily. And it is almost impossible for a man to accept simultaneously a religion based on individual interpretation of religious doctrine and a body of scientific knowledge built up over the centuries by the efforts of thousands of men.

((I feel the same considerations to exist in fandom. A man whose curiosity is wide-ranging will not be satisfied

in a non-intellectual religious tradition. This, I feel, explains in part Walter Breen's statement in KNOWABLE #4, p. 20, that "Roman Catholics are the second most frequent religion in fandom, the most frequent by a small margin being agnostic/unaffiliated" and "Jews run between 5 & 10%".))

RANDALL GARRETT, Kevin's Bar: I see by KNOWABLE #5 that you intend to farm out future chapters of The Story. Would that I could write a chapter, but, alas, my present schedule is so tight (not to say positively drunken) that I can hardly squeeze in correspondence, much less writing-for-the-fun-of-it....The present chapter, for some reason, caused Connie and me to burst forth in a sudden creative flood. The result was a list of characters, any or all of which you and your collaborators may feel free to use. To wit:

Sir Amic Potts - a slightly cracked chap	Sir Ranrap - An egotist; "all wrapped up in himself"
Sir Fitto Lampreys - a glutton	Sir Oollian Blue - a fair-weather friend
Sir Vance Quarters - who prefers women of the lower classes	Sir Cuitous Root - who never gets to the point
Sir Roses O. de Liver - a heavy drinker	Sir Caesar Sorrow - who found the Lost Lenore
Sir Affic Smyle - a benign-looking fellow	Sir Rocco - a windy fellow
Sir Monon de Mount - a holier-than-thou type	Sir Lee Puss - a nasty bastard
Sir Rahayvo - an assassin	Sir Van Return - a tennis player
Sir Ender - a coward	Sir Fahri - an African explorer
Sir Donic Grynne - who views the world with detached amusement	Sir Valence - a detective

And a few noblemen:

Earl de Woiks - a Brooklyn nobleman	Baron Wastelands - who has a dry sense of humor
Earl Eatobed - a self-disciplined type	Duke Kamawnup - a party-giver
Earl Eatorize - brother to the above	Duke Anstnicht - a forbidding figure
Earl Lee Byrd - a collector of Oligochaeta	Ecks, Marquiss Desspot - with pinpoint accuracy

and finally, His Majesty OTTO REX, who always likes to get in a scrap.

ROY TACKETT, 915 Green Valley Road NW, Albuquerque, New Mexico 87107: Agree with your disagreement on presentation of the Hugo to F&SF; disagree with your comment about Galaxy and tentatively agree about the Z-D mags. True, Analog has been presenting fantasy thinly disguised as science-fiction. F&SF doesn't even print fantasy. It appears that the fantasy and science-fiction fans were outvoted insofar as the magazine Hugo is concerned.

You say (in reply to de Camp) that science deals with expectations based on present knowledge but cannot claim to be Absolute Truth. Earlier you grouch about authors who stretch the general theory of relativity. Certainly such evasions as "sub-space" and "hyper-space" are absurdities but what makes you so sure that lightspeed is the absolute limit? ((Because the experimental results uniformly support theories based on this idea. See Møller, Theory of Relativity and Panofsky and Phillips, Classical Electricity and Magnetism.) Some recent observations, or so I've read somewhere, would seem to indicate that lightspeed is a variable after all. Don't ask me to back that up, though; I read stuff all over the place but never bother to keep track of it or catalog it.

"Science Made Too Easy" was amusing. ((See p. 7.))

Giants. They wouldn't have had to be too tall -- the medieval boys were on the short side.

JUDY HETLAND, Bureau of Publications, Teachers College, Columbia University, 501 West 120th Street, New York, New York 10027: I am doing a research problem, later to be expanded into a thesis, about trial marriage (otherwise known to Judge Lindsay et al. as companionate marriage)...In order to do this problem I need volunteers who are currently living together and contemplate marriage, or who lived together prior to getting married, and who would answer a questionnaire for me. Most of this would probably be done by mail, and of course everything will be confidential. ((This sort of domestic arrangement seems to be relatively common in fandom. Readers are urged to drop Mrs. Hetland a line if they think they can help her.))

GEORGE COWGILL: I've resurrected my credentials, showing authentically that I'm a card carrying member of the Buck Rogers Rocket Rangers. How many other SF fen can say that? Complete with secret Identification Number too, which needless to say I'm not revealing unless you can give the recognition signs and demonstrate that you're in the BRRR too.

TOM PERRY, P. O. Box 1284, Omaha, Nebraska: While the Heisenberg principle continues to be accepted it puts a dent in Gospodin Stalin's assurance that all things are knowable -- even if it can't be used to buttress free will. (My mind's not made up on that point.) Admittedly two inaccuracies whose product is equal to h (6.63×10^{-34} joule-sec) are pretty small. But they exist, or seem to. ((Though they're on too small a level to affect human actions.)) Anyway, I suspect Stalin's confidence in knowability was based on oldfashioned mechanism, rather than the modern...quantummechanism.

...In 1942 Heinlein wrote a story in which he found it convenient to assume that physics was considered an exact science. He wrote: "Even the short reign of the Heisenberg uncertainty principle had not changed fundamental orientation toward Order and Cosmos; the Heisenberg uncertainty was one they were certain of...In 1958 Horowitz's reformulation of wave mechanics had eliminated the concept." All very well, but I think the date should have been changed, eliminated, or anno-

tated when the story was published in an anthology in 1959.

I meant to ask about the "(N)egro" that abounds through the letter column. Does this indicate that the writers wrote "Negro" with a lower-case initial and you have modified it? ((Yes.)) The Reporter carried an interesting article this summer about the battle the Negroes fought to attain that majestic N, and being sadly sardonic, I think, about the little good it did them to win it. I capitalize it myself, usually, but I notice that people like Willis do not, and I hardly think it can bear on his racial prejudices, since he seems to have none. ((The lower-case "n" in Negro is accepted usage in Great Britain and the Commonwealth.)) If we are right in decrying the concept of race I wonder if we are right to dignify it with the capital letter?

I enjoyed particularly the putdown of JWCjr re parapsychology -- I'd come to think I was alone in fandom as considering the whole thing, including Dr. Rhine's experiments, as a particularly stupid form of wishful thinking. ((You are by no means alone in this.)) It has ruined more SF novels than you can count. In Stranger in a Strange Land, for example, Heinlein indulges his hero in every superpower imaginable, all justified because we supposedly know very little about the true functions of the mind. This is done, presumably, to make his sacrifice more poignant. But Shaw wrote some fifty years before that miracles do not make a holy philosophy any more holy. If they were based on great scientific achievements they might indicate the philosophy contained operational truths and was therefore better. But because Valentine Smith's miracles ARE miracles, they have as little relevance as those attributed to Christ. The reader puts down the book and returns to a world where telepathy and such are no more than a new form of the oldest magic, and dismisses the philosophy with the nonsense.

Liked too the condemnation of SF authors who use faster-than-light ships without justifying them. Heinlein has come closest to a rational explanation, with his curved space and ships slipping across where space doubles back on itself. ((A spatial curvature great enough to permit this would be easily observable within that space.)) But the ships still couldn't attain the speed of light necessary to make the translation. Besides, if space were curved like that Hubble's measurements of the visual magnitudes of other galaxies should have revealed it, no? ((Very likely.))

I also wonder about the common stellar notion of relative time. The idea is that if your starship is travelling at a large fraction of c relative to the solar system, you could make a trip of many lightyears and return to find the earth centuries or decades older while you had aged only a few years. Strangely there are some popularized books on relativity that support this but I don't see how it can be. A basic tenet of relativity is that there is neither absolute space or absolute time. ((I'm not quite sure what you mean here.)) If the starship is moving at .99c relative to the earth, then another set of coordinates will show the earth moving at .99c relative to a stock-still starship. Einstein says that each picture is equally true. But if the time on

the ship is slower than earth-time, doesn't that indicate the ship is in absolute motion? I wonder if Einstein can have meant merely that time on the ship is slower as nearly as it can be observed from earth (and viceversa, of course)? If the ship is going away from earth at almost c and beaming a signal back to earth each second, the signals will become farther and farther apart as the ship moves away...to someone receiving the signals shiptime would seem to be slowing down.

((The earth and the ship are not physically equivalent frames of reference. The transformation equations on p. 5 are valid only between two frames of reference moving at a uniform velocity with respect to each other. But the ship is not always moving with uniform velocity with respect to the earth. Somewhere out there it turns around and comes back, accelerating in the process. In other words, the earth is always an inertial coordinate system, while the ship is not.))

I imagine there are a number of things SF authors and readers take for granted that are unscientific...I think there are quite a few things that fans would like to know the scientific basis for, if there is any--parallel worlds, for instance...and time travel. ((Maybe a positron is an electron travelling backwards in time. This is highly speculative at the moment.))

I liked the cover--very nicely done...I particularly like the expression on the dragon's face, considering that in #4 the witch intimated she wanted to Do It with a dragon. May they both enjoy it. ((See Chapter X.))...Is there any real evidence that a game like modern poker was played with the Tarot pack, or were you simply being amusing. Either way, I enjoyed that episode greatly. ((To the best of my knowledge, poker does not antedate the beginning of the 19th century. It's said to be based on a French game that American riverboatmen picked up in Nouvelle Orleans.))

DICK SCHULTZ, 19159 Helen, Detroit 34, Michigan: To get to the crux of the matter, I'm a bit amazed at Frank Hiller. ((Who wrote a short note to KNOWABLE #4 criticizing my article in KNOWABLE #2 that seemed to him to verge on the old "Fans are slans" notion. For those who didn't come in at the beginning, this article "The Great Secret of Fandom", has just been reprinted in Galaxy Reporter #5, p. 8, by Dwain Kaiser, 2349 Canehill, Long Beach 15, Calif.)) Certainly after claiming such a knowledge of fans and their beliefs, he doesn't think he's going to get by with a few off-the-shoulder cuts and retreat to his own mental courtyard without a few barbs in him.

First off, I would question his source of knowledge of fans. But to simplify matters, I'd like a definition from him on what he considers fans.

It can mean anything from mere readers all the way to his own opinion of a hard core.

However, whatever his definition, I would appreciate seeing from him, in black and white somewhere, the names of those fans who embrace astrology. Those who embrace theosophy. Those who embrace water witching. ((Those who embrace water witches?)) And those who view the "aura".

After he has done that, he might reconsider his earlier

statements. I know of only one person (not fan, mind you) ((Are you establishing an absolute dichotomy here?)) who viewed auras. Doc Hazen used to come to the DSFL-MSFS meetings in the early part of the '50's before George Young left for Korea. ((Them were the days, according to Perdita, who used to fan in your part of the country.)) At one DSFL meeting/confab, Doc said that he saw auras about some of the members. One, Norm Kossuth, he of the bulging eyes, agreed and between them decided that Norm's aura was blue. It is not known how long it took the Doc to discover he was being put on, but he soon quit coming to the meetings. ((Remind Tom Seidman or me to tell you sometime about the Reformed Church of the Mobile Soul.)) Hazen at no time published a fanzine, or was in any way a fan other than the occasional DSFL-MSFS meetings he would attend. And that for the companionship. ((No comment.))

Maybe Hiller would still say that Hazen is a fan, despite the fact that he wasn't even a fringe fan. But even with Doc Hazen, how many can Hiller name? Not very damned many.

If Hiller wants to knock something, he should do so on valid grounds instead of inventing proofs of crackballism. If Hiller thinks that fandom has since the early '40's seriously professed to be anything remotely resembling a mass superior intellect, he might cough up some proof as to where and when.

Even if Hiller does manage to scrape up a few dozen fringe fans and Wetzels and Shavers for his proof, he still hasn't proved that they represent the great mass of fandom. He has simply proved that the fringes of any organization are apt to be somewhat far from the norm.

If Hiller wants to knock fandom, he might try doing so from real grounds instead of incorrectly assumed or invented ones. Fandom has enough wrong with it that that old saw about superior intellect doesn't need to be brought in. That self-conceit has been killed off many a time.

As a matter of fact, considering the proven record of emotional instability and social overcompensations within fandom's main body ((You mean Sylvia Dees?)), I think it's quite an achievement that so few have allowed themselves to be taken in by the crackery of this and that.

You might almost say: Call us insecure but don't call us stupid.

...I'm a bit dismayed about the Hugo line-up this year. For one thing, how The Day the Earth Caught Fire got on there is beyond me. Also, could the voters really logically exclude Hershey's The Child Buyers? But they did so anyways, to judge from the ballot.

The biggest ache was in "Short Fiction", however. The Planet Savers was, at least to my eye, a better work than Sword of Aldones. ((I agree. I can never think of a "matrix" as being anything but a rectangular array of numbers obeying certain algebraic relationships.)) Yet Sword got on the ballot and Planet Savers didn't. Too many people type-cast Planet Savers as a "novel" in their minds, even though it wasn't much over 90 pages long. What really galled me was how they put Myrrha in its place, so to speak.

Maybe I have no taste in literature. Maybe. But Myrrha certainly wasn't any more of a successful short than any one of two dozen of the stories in F&SF alone, much less Galaxy and If and the rest which have printed the occasional pretentious story.

Oh, it won't win the Hugo. ((No did it.)) Not with Dragon Masters and Where is the Bird of Fire? and The Unholy Grail (I'm a Leiber fan)((Shake!)) running against it. But still, that it should even get on the ballot...

LEONARD BAILES, 27 Split Rail Place, Commack, N. Y. 11725: Please don't discontinue "Science Made Too Easy". You haven't even done one on biology yet. I'm sure you could get a few laughs over the futility and uselessness of the average high school biology class ((I got a great deal out of mine)), as well as the complex nuclear chemistry which has been discovered. (Then, there's always Krebiozen for a laugh.) ((Sorry, I can't see the comic aspects in so serious a matter as medical quackery.)) The cover dresses up the mag considerably. Please continue to use Perdita's art. The Story seems to be losing its punch. Maybe when you open it up to the readers it will liven up again. ((That should happen 'long about KNOWABLE #9.))

Lerner: I'll admit that Glory Road was no epic of great stature, but the very fact that you reacted so violently to it proves the point that Heinlein was trying to make therein. All right, so the adventures were really cardboard. That is one flaw in the book, but they did not in any way remind me of Three Hearts and Three Lions. Poul was trying to do little else than spin a good adventure yarn. Heinlein is in Glory Road trying to lampoon, and in my opinion doing a fairly good job of it. His portrait of Earth civilization (especially Western) is slightly distorted, but all the more amusing because of this. ((Figures of straw have always been amusing.)) Heinlein is in Glory Road deliberately trying to shock the reader and offend his morals. I don't believe that RAH was proposing the culture of Nevia or Star's world seriously as a substitute or cure-all, but merely to point out the danger of "I believe in this because this is the way it is"-ism. I enjoyed Glory Road better than Stranger. I believe that in Stranger Mr. Heinlein got carried away by his own sense of humor to the point where it ceased being funny. ((I see nothing particularly funny about Stranger.) Doesn't anybody out there

"May it please the court," said Hazel, "I am a stranger in a strange land."

- Robert A. Heinlein
The Rolling Stones, p. 183

like Glory Road - or are you afraid to admit it?

Jacobs: Fandom isn't really one hobby; it is a group of hobbies, some of them bearing not the slightest resemblance to sf. What do you mean by fandom holding us "together"? We are all (or most) citizens of the United States. All speak English. Certainly the fan living out in Nowhereville, Illi-

nois, who corresponds with several fen, is a neffer, and reads the prozines, and who is a farmer and 50 years old is not "held together" with an 18-year-old multi-apan member of LASFS out on Fan Hill who hardly ever bothers with sf and who intends to become a librarian, or a teacher. We are held together in the same sense you and your next door neighbor are held together. ((Well, I had this next-door neighbor once...)) But surely what interests our Iafan will be of little or no consequence to our midwest farmer. ((Any comments, Bruce? Wrai?)) Sure they both read sf (maybe). But don't you and the gas station attendant down the block both read the newspaper? Science Fiction fandom is no more than a church or community center where different people can possibly strike up an acquaintance, and chat a little. But after church services ((Ghail, Ghu, full of ghrace)) or the Community meeting, the people return to their ordinary roles in life, having little or no intercourse with the people they meet at the center. ((Have you ever read Ah, Sweet Idiocy?))

Then again once in a while, two fen who are hung up on politics or folksinging or Heinlein get together and form a lasting friendship. This is the same as our farmer meeting another farmer. It was not FANDOM which held them together; it was COMMON interest. Fandom is just the catalytic agent, and by no means permanent or deeply attaching.

((Unless Frank Hiller wants space for rebuttal, this is the last of the controversy set up by "The Great Secret of Fandom". Four issues, after all, is long enough for an issue to be paraded through the letter column. Let Dwain Kaiser carry it on in his 'zine if he wishes.))

E. E. EVERS, 118 W. 83rd St., New York, N. Y. 10024: I liked your cover, kind of Puff-the-Magic-Dragonish. One gets the ideas faneds marry artists on purpose. Regardless of motives, the practice is sure to have a good effect on KNOWABLE.

Discon impressions interesting. Completely different from mine though. I suppose every fan there got something different out of the con. At least you seemed to enjoy yourself, as did I. I've heard from several fans who didn't - too bad, because I think there's always something to enjoy if you'll only try to find it. One thing that really grotches my ass is gripes of a "dull con". If you need excitement, call some BNF a fugghead, try to make some married femme fan, slip somebody a cup of coffee sugared with LSD, or just take your pants down and holler. Me, I'd just as soon not have too much excitement. ((How'd you like the PhilCon?))

"Astronomy Made Too Easy" is good. I wish I could have had a copy of it when I was in school. I'll bet most of my fellow students would never have believed it was written by a teacher.

Your feghoot was no worse than the average. A fairly unusual switch - the story is off color and the pun clean instead of the other way around. Oh well, as long as some part of it is dirty. I can't stand clean feghoots.

...Your "Speculations About Giants" was well thought out and well written. But can't you fit almost any theory to ex-

(Continued on p. 31)

THE ORCS' MARCHING SONG

The tune is "Jesse James". Verses are by KA (Karen Anderson), DD (Dean Dickensheet), GH (George Heap), and TJ (Dave McDaniel). The chorus is repeated after every verse.

- ✓ Sauron had some rings; they were very useful things,
And he just wanted one to keep;
But Isildur took the One just to have a little fun;
Sauron's finger was inside it--what a creep! GH
- ✓ CHORUS: Sauron had no friend to help him at the end,
Not even an Orc or a slave. (Ork! Ork!)
It was dirty Frodo Baggins that fixed his little wagon
And laid poor Sauron in his grave. GH
- ✓ Isildur started forth for his palace in the North
But his fate turned out to be an Indian-giver;
The Orcs caught up with him, and though he tried to swim
They shot him and the Ring rolled down the river. KA
- ✓ Gollum met his ruin while skin-diving in Anduin
There he found his birthday present;
He gave up steak and pork just to eat raw fish and Orc--
Though the flavor was unique, it wasn't pleasant. GH
- ✓ Sauron went to war for the glory of Mordor
But his Orcs didn't like the sun.
It was marching in the heat made them feel so very beat
So he made them suntan lotion by the ton. GH
- Gandalf found the gate when the night was very late
And thought that he had been so very cunning;
But when drums began to boom in the depths of Khazad-Dum
Strider and the Walkers started running. KA
- The wizard Saruman heard that rings were in demand
And said the One was lost so he could take it;
He wanted it to war on his black adversary Sauron--
He wanted to be God but couldn't make it. KA
- Treebeard and his pals, when they couldn't find their gals
Were content to stand around and just make shade
But the axes of the Orcs caused those Ents to blow their corks
And at Helm's Deep stage an Arbor Day parade. DD
- ✓ When Frodo saw the Ring, he rather liked the thing,
But it worried him every minute;
At the end of his long mission, just to keep up the tradition,
He lost it with his finger still within it. GH

Sauron he felt poor at the fall of Barad-Dur
And he hadn't a friend, as I've mentioned;
But his spirit lives today just the same in every way
And the Orcs show up at every damn convention.

GH

Now, you think that Sauron's done, for they did melt down the One,
And you must admit that Mordor is a mess;
But he had a scheme, I fear, to exploit the Palantir,
And the Eye is seen each night on CBS!

DD

ALTERNATE CHORUS:

Sauron had no friend to help him at the end,
Not one of his foul Orkish crew;
It was dirty Frodo Baggins that fixed his little wagon,
Because it seemed the fannish thing to do.

TJ

PUT THEM ALL TOGETHER, THEY SPELL SAURON

by John Boardman

S is for his Stronghold down in Mordor,
A is for the Armies at his call,
U is for the Uruks in his forces,
R is for the Ring that rules them all,
O is for his forge in Orodruin,
N is for the Nazguls at his beck,
Put them all together, they spell S-A-U-R-O-N,
And you're lucky if he doesn't wring your neck.

NO, JOHN, NO

(These traditional verses from the Pros' Edda
are popularly attributed to Randy Garrett.)

On yonder hill there stands a
building,
And upon the eighteenth floor
Stands a group of authors
moaning
As they've never moaned before:
"O no, John, no, John, no
John, no!"

There, in manner quite pon-
tific,
Speaks the Master from on high:
"Slaves are better off than
free men.
Surely you can all see why."
"O no, John, no, John, no
John, no!"

"There are supermen among us;
We must now discover psi,"
Says the Master, and the au-
thors
Groan in agony and cry:
"O no, John, no, John, no,
John, no!"

"Well, then," says the Master
smiling,
"Since my Gospel you deny,
Would you rather sell to others
Where the rates are not so high?"
"O no, John, no, John, no,
John, no!"

DR. EDWARD ANTI-TELLER

Well up beyond the tropo-
strata
There is a region dark
and stellar
Where, on a streak of anti-
matter,
Lived Dr. Edward Anti-Teller.

Remote from fusion's origin
He lived unguessed and un-
awares
With all his anti-kith and kin
And kept macassars on his
chairs.

One morning, idling by the sea,
He spied a tin of monstrous girth
That bore three letters: A. E. C.
Out stepped a visitor from earth.

Then, shouting gaily o'er the
sands,
Met two who in their alien ways
Were like as lentils. Their
right hands
Clasped, and the rest was gamma
rays.

- "H. P. F."
New York Times
25 August 1963

The following two songs were first made public at a banquet which concluded a colloquium on the general theory of relativity which was held at Royaumont, France, 21-27 June 1959. Authorships are unknown, though Dr. Ivor Robinson is suspected of having a hand in the former, and Profs. Andre Lichnerowicz and Marie-Antoinette Tonnelat in the latter.

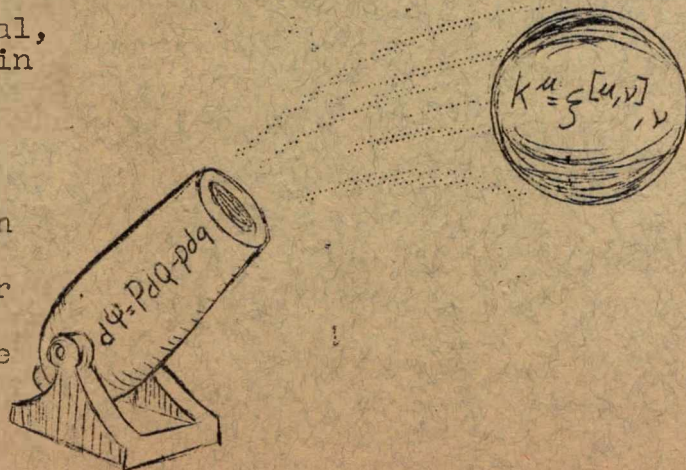
(Tune: I Am the Very Model of a Modern Major General)

In attempting a solution to some well-known field equations
Einstein, Infeld, and B. Hoffmann found unfortunate relations
That exist between the terms in series for the tensor Ricci
And that lead to contradictions in a manner very bitchy.

The only way discovered to avoid this fact annoying
Was the transient creating and the subsequent destroying
Of a concept most original, the Dipole Gravitational:
Tho' technically necess'ry, 'twas scarcely observational.

For the problem disconcerting which immediately aro-ose
Was to find those masses negative which dipoles must comp-ose
'Tis a problem no more physi-
cal but rather philosophical,
Which alters modern thinking in
a manner catastrophical.

If of such basic problems you
are not as yet too weary,
We'll explain to you papers on
the unified field theory
(Of course the only reason for
such devious hanky-panky
Is the need to satisfy all the
identities Bianchi.)



VIEILLE CHANSON SEMI-POPULAIRE

(Sur l'air de: Aupres de ma blonde)

Dans les jardins d'Asnières
La Science a refleuri
Tous les savants du monde
Apportent leurs écrits.

De ravissants modèles
Pour la cosmologie
Pour moi ne m'en faut guère
Car j'en ai un 'joli.

REFRAIN: Auprès de nos ondes
Qu'il fait bon, fait bon,
fait bon
Auprès de nos ondes
Qu'il fait bon rêver.

Pour moi ne m'en faut guère
Car j'en ai un joli
Il est dans ma cervelle
Voici mon manuscrit.

Tous les savants du monde
Apportent leurs écrits
Loi gravitationnelle
Sans tenseur d'énergie.

Le champ laisse des plumes
Aux bosses de l'espace-temps
En prendrons quelques-unes
Pour décrire le mouvement.

Loi gravitationnelle
Sans tenseur d'énergie
De ravissants modèles
Pour la cosmologie.

Mais l'énergie s'écoule
Et le St-Jean s'enfuit
S'enfuit comme les ondes
Le Colloque est fini.

THINGS THAT GO BUMP IN THE MAILBOX

(Continued from p. 27)

plain giants or other wonders in legend? From thyroid caused abnormalities to aliens to abominable snowmen - or why not just attribute to the legend writers the same amount of imagination modern SF readers have? ((Now there's an idea. Suppose that Plato, Xenophon, and Aristophanes got together at a drunken banquet one night and decided to write three contradictory accounts of the career and character of a fictional personage. Presto! Socrates is born!)) And castration, rape, and the broiling of children on spits don't have to be explained by prejudice or religious misinterpretations. The old tellers of tales undoubtedly knew as well as modern novelists that these things appeal to man's morbid nature and help sell the story.

DIE FRAGEBOGEN

There are currently two fandirectory projects in process in fandom. One is a second edition of Lloyd Broyles' Who's Who in Science Fiction Fandom, for which Broyles (Route 6, Box 453P, Waco, Texas) is now circulating questionnaires. It is hoped that the 1964 edition will have many of the names which did not appear in the 1961 issue. (Ackerman, LeeH, Ted White, TCarr, Donaho, Ivie, the Davidsons, & a few other fringe-fans.)

Bruce Pelz, Box 100, 308 Westwood Plaza, Los Angeles, Calif. 90024, is sending out questionnaires for a "Farleyfile of Fandom". The data will be put on IBM cards for easy correlation so that, for example, it will be possible to find in an instant all Chicago-area fans who own mimeos, play the guitar, and belong to the Episcopal Church.

Fans are urged to send for & send in both questionnaires.

FOR SALE

All books listed below are used, except for the Tolkien titles, but many are in new condition. Books marked "*" are paperbacks. Several copies are available of books marked "#". Orders of \$1 or more are postage-free; include 15¢ postage for smaller orders.

- Baker: A Friend in Power. A novel of office politics on a university campus.....\$2.50
- *Anderson: Mayday Orbit; Bulmer: No Man's World.....25¢
- *Asimov: The Currents of Space.....25¢
- *Ayme: The Walker through Walls.....25¢
- *Boyer: Nouveaux Jeux d'Echecs Non Orthodoxes. Collection of dozens of variations on chess, including 3-D and 4-D games.....\$3.00
- *Brunner: The Super Barbarians.....25¢
- Creedy: The Next Step in Civilization. A utopian novel with Social-Christian orientation, placed in an imaginary land in the Andes.....\$1.00
- Dallin: The Real Soviet Russia. An "exposé".....60¢
- #*DeCamp & Pratt: The Incomplete Enchanter.....25¢
- Evans: Man of Many Minds.....25¢
- *Gilbert: Electricity and Magnetism. A broad elementary text designed mainly for experimentalists & engineers.\$1.00
- Granville: Differential and Integral Calculus.....\$2.00
- #Goldstein: Classical Mechanics. The standard mechanics texts for seniors and graduate students.....\$4.00
- *Harrison: The Stainless Steel Rat.....25¢
- *Humboldt Verlag: Illustriertes Wörterbuch. Topically arranged and copiously illustrated. Gives German, French, and Spanish translations for thousands of common objects and actions.....50¢
- Jauncey: Modern Physics. An elementary introduction to the new physical theories of the 20th century.....\$1.00
- #Jenkins & White: Fundamentals of Optics (latest edition).\$5.00
- *Jung: Modern Man in Search of a Soul.....80¢
- *Knight: The Sun Saboteurs; Wallis: The Light of Lilith.....25¢
- Lentz: Towards a Science of Peace. A thorough examination of this vital matter.....\$1.00
- #Panofsky & Phillips: Classical Electricity and Magnetism. (See p. 6).....\$4.00
- #Sears & Zemansky: College Physics (3rd edition). This elementary physics text is used in many colleges and universities. No calculus is required.....\$4.25
- *Szilard: The Voice of the Dolphins and other stories. S-F tales by a leading physicist.....75¢
- #Tolkien: The Adventures of Tom Bombadil.....\$2.00
- #Tolkien: Farmer Giles of Ham.....\$1.25
- Unicorn Press: Everything's a Puzzle. Rebus collection.....25¢

Prozines & Fanzines for sale or trade (make an offer):
If July 1962 and May 1963, Fantastic October 1962 and November 1963, Amra #18, Crifanac #6, Ghuvna #1 (back cover missing), Impossible #3, Improbable #3, Sigma Octantis #8. Wanted: Fantastic May 1963, which we seem to have missed first time 'round.

(Continued from p. 2) Back issues are still available of KNOWABLES #4 and #5, POINTING VECTORS #14, #16, #17, and #18, and all issues of GRAUSTARK. But, to clear out my files, I am sending back issues to Seth Johnson's Fanzine Clearing House ere long. The aforementioned issues of GRAUSTARK which have not been sold by then will be sent off on 10 January 1964; old KNOWABLES up to #5 will follow on 1 February, and the issues of POINTING VECTOR up to #18 on 1 March.

The Fanzine Clearing House (339 Stiles St., Vaux Hall, N. J.) is a valuable institution for getting neos started. For \$1, Seth will send a bundle of 8 fanzines from the FCH files. Faneds are urged to support the FCH by sending surplus and returns to Seth - it may result in a few more subscriptions from neos.

The letter column features a dialog between George Cowgill, a Ph. D. in anthropology, and Walter Breen, numismatic appraiser and classical scholar, on "Speculations on Giants" in KNOWABLE #5. Also, the controversy over "The Great Secret of Fandom" (KNOWABLE #2) closes, hopefully, in this issue.

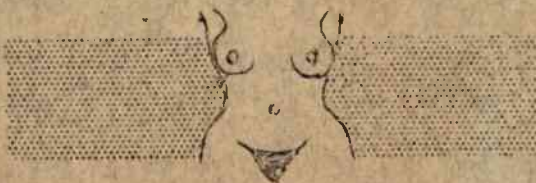
Attention is called to:

- I. Judy Hetland's research project (p. 22), in which many fans are eligible to participate.
- II. "Science Made Too Easy", which will soon be available as a separate publication. (p. 7)
- III. S-F Times' "In My Opinion" Poll. (p. 15)
- IV. Two fan directories now being compiled. (p. 31)

"The Orcs' Marching Song" has been flitting around fandom for some time, but to the best of my knowledge has never been printed. George Heap sang it at last month's PhilCon. (See my PhilCon report in a future issue of Fanac, which will be out about the middle of 1967.) Any person knowing the words to "High Fly the Nazgul" is urged to send them to me.

Judy Glattstein has written the terminal installment of "Science Made Too Easy", in this issue, and also contributed two chapters to The Story. These chapters were written almost 10 years ago, when Judy then-Orlove was 12. Judy, who is one of my oldest friends, will make a further appearance in the next issue of KNOWABLE as co-author of Chapter XV. She is presently living in Lake Mohegan, married to engineer Paul Glattstein, and expecting her second child any day now.

Once more, Perdita and I would like to ask anyone who took pictures of us in costume at the DisCon to send us prints. Granted, we're far from being as photogenic as the Stopas (see S-F Times, November 1963) but we have yet to see any of the numerous pictures taken of us.



ERRATA: p. 26, line 6. For "No" read "Nor".

p. 32. The Evans novel is a paperback.

p. 24. Galaxy Reporter is 10¢ a copy.

p. 25. The description of Sylvia Dees as the "main body of fandom" refers

to her popularity as the subject of photos at the DisCon. I mean no imputation of "instability" whatsoever; after all, I barely (disclaimer) know her.

This month the table of contents is on p. 2, where we hope to be able to keep it. You are receiving this issue of KNOWABLE because:

- () - You subscribed, at 5 issues for \$1, or 25¢ the copy. Your subscription expires with issue _____.
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