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Pandita







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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, U. S. A. It is available for trade, letter of comment, contribution, subscription (25¢ or 5 issues for \$1.00) or because we feel like it. You have received this issue for the reason checked on the back cover.

This issue of KNOWABLE, dated "May 1966", follows the previous issue by 8 months. This compares quite favorably with the 10-month gap which separated the 8th and 9th issues, and raises hopes that the 11th issue may appear in mid-summer. Those of you who have not already received our daughter's birth announcement are getting it as a rider now, though Deirdre is now a big 8 months old, has cut four teeth, and is crawling all over the house. We had originally hoped to publish KNOWABLE #9 for the Labor Day 1965 Con in Philadelphia, and put Deirdre's birth announcement on the front cover. But Deirdre did not cooperate in this project, so KNOWABLE #9 went to press and to Philadelphia while she was still <u>in utero</u> . She was born on 4 September 1965, thus assuring her birthday parties at WorldCons for the rest of her life.	This is
	O At
	P Great
	E Intervals
	R This
	A Appears
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Also accompanying this issue of KNOWABLE is your ballot for the Eleven-Foot Poll. The Hugo and other ballots offer you an opportunity to express your opinions on the best science-fiction and fanac of 1965, while the Eleven-Foot Poll tries to determine the consensus of fandom on the worst performances in these fields. The deadline for receipt of ballots is 30 June 1965. The results will be published in KNOWABLE #11. As usual, no complaints about the results of the poll will be entertained from anyone who received a ballot and did not vote.

Too often, pseudo-scientific theories are rejected out of hand by scientists, who fail to put forth detailed criticisms of their errors. Without such authoritative refutations, these theories then are propagated among people with inadequate scientific background, and sometimes obtain great followings. Examples in recent years have been the crackpot astronomical systems of Hoerbiger and Velikovsky, Hubbard's dianetics, Reich's orgonemy, or the Hieronymous and Dean machines which John W. Campbell has so assiduously promoted in Analog editorials. It is the editor's belief that such theories ought to be met with detailed criticism as soon as they are published. To this end, the "vacuole theory" of C. O. Ingamells is examined. Anyone wishing further information about Ingamells' theory, which is presented on p. 26, should write him at 101 Old Mill Road, State College, Penn. 16801.

By the end of 1964, most fans were sincerely hoping that the Exclusion Act controversy was over and done with. The attempt, by a coterie of West Coast fans, to

(continued on p. 24)



## ALONG CAME A SPIDER

by John Boardman

Fritz Leiber's stories about the "Big Time", and the Change War that takes place there between the Snakes and the Spiders, have a wider scope than almost any other science-fiction story. The Change War takes place, not only in the past and in the future, but in all kinds of possible pasts, presents, and futures as the Snakes and the Spiders try to change the history of the universe to their advantage. In Leiber's Change War stories, the war is described as extending a billion years into the past and future, and across several galaxies.

The exact nature of the conflict is never clearly stated. The only novel in the series, the Hugo-winning The Big Time, comes the closest to doing so. A Lunan from the distant past explains to the heroine that the beings who fight the Change War "are the fourth order of evolution... they can make all of what might be part of what is, and that is their evolutionary function." Thus, a human being recruited into the Change War as a "Demon" has taken a step analogous to the first air-breather's emergence on dry land, out of the present into the Big Time - which is the entire Kosmos. According to this view, the Change War is just a manifestation of this evolutionary break-through.

From this broad view we turn to the specific operations of the Change War, and the question may be raised: what are the Spiders and the Snakes fighting over? When they intervene in conflicts on the "Small Time", why do they choose one side rather than the other?

Some answer to this may be seen in the small-time conflicts in which the Snakes and Spiders intervene, as reported in The Big Time. The Spiders seem to support the "West", whatever that may mean. They supported the Romans against the Parthians, and put the Roman Empire and the Catholic Church under German rule. In the 20th Century, they again back Germany, keeping "England and America out of World War Two, thereby ensuring a German invasion of the New World and creating a Nazi empire stretching...from Nizhni Novgorod to Kansas City." Opposed to this is the Snake Three-Thousand-Year Plan, an alliance among "the Eastern Classical World, Mohammedanized Christianity, and Marxist Communism".

If anything can be made out of this, the Spiders and Snakes have two fundamentally different viewpoints of humanity and society. These viewpoints might be called, with some degree of oversimplification, "elitist" and "universalist". Elitists generally believe that some classes or races of men are superior to others, and that some are born to rule while others are born to be ruled. They tend to favor a hierarchy of birth, with secret doctrines to which only initiates are privy. The structure of an elitist organization is like a pyramid - or the web of a spider, with a central nexus from which controls run down to the operational level.

Universalists operate on a different set of assumptions - that their ideology is the proper ideology for all mankind, and that distinctions of birth or class do not confer a right to rule. A universalist ideology may have a hierarchical structure, but the way to the top is in theory limited only by the capabilities of the aspirant. Examples of universalist ideologies are Roman Catholicism, liberal demo-



cracy, and Soviet Communism. Elitist ideologies include Gnosticism, certain medieval heresies such as Bogomilism, Freemasonry (insofar as it had political overtones), and, in our own time, Fascism and Nazism.

The Spiders, supporting both the Confederates and the Nazis, are plainly of an elitist persuasion. The Snakes, on the other hand, could well have implanted universalist ideas in "the Eastern Classical World" and carried them forward to their present anti-elitist manifestation in the Socialist movement. To aristocracies of the past, the adherents of universalist ideologies must indeed have seemed like Snakes, burrowing underneath the foundations of their orderly and structured societies.

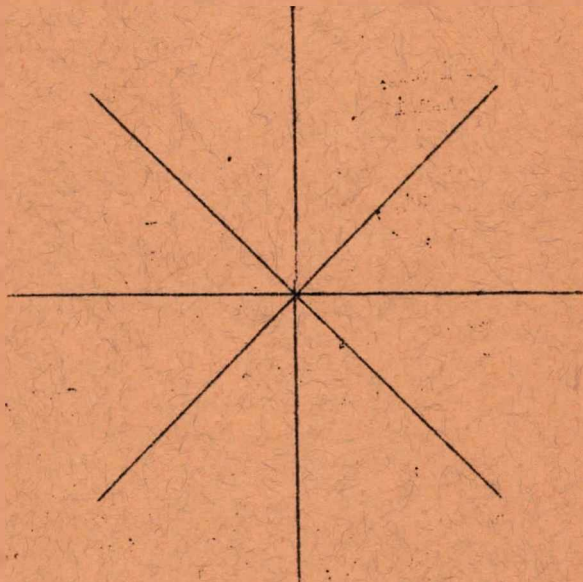
With these considerations, we can identify a prominent 19th-Century Spider agent. Though this man posed as a scholar and writer, his chief activity seems to have been "cutting ghostgirls" - that is, he collected exudations of ectoplasm from the skins of naked women and carefully stored them away, to be revived later in the recreation centers of the Change Warriors for their off-hours delectation.

This agent was the Rev. C. L. Dodgson, alias Lewis Carroll. Though noted chiefly as the author of Alice in Wonderland and Through the Looking Glass, Carroll seems to have had quite as many personality quirks as Emil Slicker, the ghostgirl-collector of Leiber's Change War short story "A Deskful of Girls". Martin Gardner reveals many of Carroll's idiosyncracies to us in the introduction to The Annotated Alice. Among other things, we learn that "he thought the naked bodies of little girls...extremely beautiful. Upon occasion he sketched or photographed them in the nude, with the mother's permission."

Carroll seems to have had no overtly sexual interest in women of any age. What he may have called a camera was probably in actuality a device for cutting ghostgirls. Probably, somewhere on the Big Time, there are warriors recruited from a culture in which pre-pubertal girls are acceptable sexual outlets. Carroll was collecting girls for their off-duty hours.

But was Carroll a Snake or a Spider? Gardner gives us an answer: "In politics he was a Tory, awed by lords and ladies and inclined to be snobbish toward inferiors." He bitterly opposed Gladstone, the Liberal leader of the day. If the Spiders can be identified with the elitists, then Carroll was undoubtedly a Spider.

This assessment of Carroll agrees with an analysis by E. Merrill Root in a recent issue of American Opinion, the monthly publication of the John Birch Society. Root claims that Carroll's poem The Hunting of the Snark is a satire on collectivist ideologues. He examines the poem in great detail; for example, the Bellman's map is totally blank, which is supposed to represent social reformers' ignorance of the landmarks of history and society. If this poem is seriously intended as such a satire - and Root appears quite serious, to the point of stuffiness, in his thesis - it is consonant with Carroll's known political beliefs. Furthermore, the dangerous Snark, which Root conceives as Communism, is compounded by Carroll from "shark" and "snake". The aristocratic and anti-Communist Spiders, working with their proverbial patience, have planted in our literature a 19th-Century satire which Root shows to be directed at a 20th-Century Snake-directed movement.





## THE STORY

The Story is a round-robin of multiple authorship, and has been growing steadily since 1954. Each successive author undertaking to add a chapter has been given complete freedom to do with the story line what he or she will.

Paul Glattstein is an engineer in Pittsburgh. His wife Judy has already contributed  $2\frac{1}{2}$  chapters to The Story, and adds another after Paul has had his say.

## SYNOPSIS

Sir Tinly the Furest is off on a quest to the Old Wold, in the island of Terre Pieux, to slay the she-troll Yog-Thuthuthoth. This mission has caused him great anguish, since he doubts whether his knightly honor permits him to draw his sword against a woman. He is accompanied by his squire Dumbert, a slave named Deedah whom Dumbert impulsively purchased to free him from a cruel slavemaster named Foulbrutis, and a broken-down old dragon whose fires have gone out from too much boozing, but who wants Dumbert to arrange for him a match with Sir Tinly.

Meanwhile, the giant Groothulbore has evicted the dragon's family from their cave, and has kidnapped the dragon's eldest daughter as security for payment of the back rent. In order to induce a knight to try to rescue them, the dragons had kidnapped two princesses - though, owing to the dragoness's near-sightedness, one of the "princesses" was actually Deedah in a flowered nightgown.

Groothulbore threatens to report the dragoness to the Unethical Practices board, so the dragoness sends Deedah there herself and eats the genuine princess. Deedah arrives instantaneously at the Old Wold, where he is taken into the services of Queen Hexa as Lord High Hatchot Man. But Hexa's evil minion Spillink, demon of Bureaucracy, intimates that he has his own plans for the slave.

In the meantime the dragon, in a last effort to raise money to ransom his daughter, goes off to get a job in the merchant marine. With two piratical merchants named Krum and Higgens he goes to San Geronimo, where Friar William of Graham, believing him to be under a spell, vainly tries to exorcise and/or convert him.

## CHAPTER XX

by Paul Glattstein

Sir Tinly, Dumbert, Akula, the dragon, and the laden ox-cart continued along the King's Highway towards Mare-foie. There they would board a boat for Neatun and continue on their journey to the Old Wold.

Upon reaching Mare-foie, Sir Tinly - who had been glancing back at the dragon for the last few miles - drew Dumbert aside and remarked, "That dragon has been dragging along behind us since we left the Conc and Shine. What the hell does he want?"

"Well ... er ... ah ... or ... that is ... er ..." (Dumbert was rather shocked, both by the suddenness and nature of the question (he had begun to take the dragon for granted by now) and by Sir Tinly's use of profanity (although, reflected Dumbert, after last night's excess in the tavern, Sir Tinly might have slightly modified his views on the purity of life (improbable though it sounded))) "well, I sorta promised him a fight with you, he's been looking for a knight to fight ever since his fires went out."

"That's out," said Sir Tinly. "I wouldn't fight a non-flaming dragon, no self-respecting knight would. So get rid of him."

"How?"



"I don't know, but he'll only be in the way when we get to the Old Wold. I have trouble enough worrying about Yog-Thuthuthoth without having to worry about a slippery dragon underfoot. Tell the dragon that I'll fight him as soon as he gets his fires relit. Now get rid of him!"

"All right, all right, so I'm going already." Dumbert was a trifle peeved at Sir Tinly's use of the word "slippery" in relation to the dragon. After all, he thought, just because he is a dragon is no reason to be dragging his name through the mud.

Sir Tinly moved forward to discuss more about the Old Wold with Akula, and Dumbert slowed his mule to let the dragon catch up with him.

"Look, dragon," said Dumbert, "I know I promised you a battle with Sir Tinly, but he won't have any of it, he said..."

"Oh poor misbegotten me," moaned the dragon. "Oh fate, oh cruelty..." He stopped when it became evident that Dumbert wasn't paying any attention to him at all.

"...that he won't fight with a dragon what's got no flame. What's more, he said that you'd only get in the way at the Old Wold, so I guess you'd better stay here."

The dragon moaned feebly.

"Don't get so worked up about it," admonished Dumbert (who couldn't help feeling sorry for the dragon (even though it was his (the dragon's) fault for drinking too much and dousing his (again the dragon's) fires) after all, what chance did he have to make a reputation for himself when he couldn't even summon up a little smoke (much less flames)). "If you had a little more spirit..."

"I've had too much spirits already," sighed the dragon, belching slightly.

Dumbert pretended not to notice the interruption, and continued, "...you'd do something about your internal problems."

"Like what?" asked the dragon, fooling that some remark on his part was expected.

"Like for instance getting a job on a ship or something," said Dumbert, "make a little money and maybe you can hire a salamander part-time."

"Yeah, maybe," said the dragon, a shiver running down his tail at the thought of work.

"I'd better get back to Sir Tinly," said Dumbert, "but before we part, what the hell is your name?"

"Rhapptihigihihth," said the dragon.

"Yeah, I figured as much," said Dumbert. "Well, take it easy, dragon," and with these words Dumbert kicked his mule into third and went trotting down the street. The dragon looked after him for a moment and then crawled down one of the numerous side streets to search for an old copy of Ye Daily Looking-glass to look for job opportunities.

By the time Dumbert caught up with Sir Tinly and Akula they had already reached the dockside and were haggling with the captain of the Cinatit (a good ship, but one with notably bad luck in northern waters) about the fare to Noatun.

"One hundred," said Sir Tinly, dropping his hand to his sword-hilt.

"Four fifty," said the captain, fitting a quarrel to his arbalest.

"One sixty," said Akula, drawing his flame-shaped kris.

"Four ten," said the captain, drawing aside his cloak to reveal a chain-mail shirt.

"One seventy-five," said Dumbert, producing a slightly rusty katar from somewhere inside his tunic.

"Three eighty," said the captain, whistling softly to the jet-black panther that paced restlessly at his heels.

And so it went. Two hours later they had finally settled on two sixty-five and had stowed their gear on board the ship in preparation for the morning's voyage.



After supper on board the Cinatit, Dumbert took leave of Sir Tinly and Akula (who were embroiled in a discussion of whether or not Lilith was (or was not) the bastard daughter of Queen Hexa\*), and sauntered out to take in some of the sights of Mare-foie. After wandering around the city for several hours (with no success as far as wenching, gambling, or rowdy fights were concerned) he came upon a soothsayer's dwelling which bore over its door a large sign reading "Big Bargains - Riddlos Answered - Free of Charge - Today only" (this soothsayer was trying a novel come-on, reflected Dumbert, however, it would be interesting to note whether the extra business brought in by the sign had paid for it (the sign) and besides it sounded interesting (in fact anything for free sounded interesting (in view of the fact that the only thing that he (Dumbert) had gotten free recently was the vigorously applied flat of Sir Tinly's sword)); what's more, he had just remembered a riddle he could pose (one his older brother had told him ten years ago and which he still had not solved.))

Dumbert strode through the doorway into a dark, dank, dirty, foul-smelling tent made and patched with hides. Slowly his eyes accustomed themselves to the darkness within the tent and he saw before him a small wizened old man, who sat behind a table overflowing with various odd objects, among which he noticed: a brand-new, highly polished chamber pot, a hookah with a hole in the bottom, a coiled blacksnake bullwhip (Dumbert nervously changed his mind about the whip as it opened its mouth and hissed at him, it was, he concluded sadly, a sad state of affairs when a young, honest, upright (well, almost upright) squire like himself couldn't tell a blacksnake bullwhip from a live blacksnake), a goat's horn in the shape of a goat's horn, and a miniature chess set carved out of human teeth.

"Is that sign out in front for real?" inquired Dumbert.

"Yeah, I suppose so," replied the soothsayer. "If you got a riddle let's hear it, I ain't got all night you know. I got a karate class with a Turk in ten minutes, so let's make it snappy."

"All right, already," said Dumbert, "here it is: 'Why is a writing desk like a raven?'"

"May need a little spiritual help on this one," muttered the old man. "I guess I'd better call up Rouqil."

He picked up the chamber pot, poured in several noxious-looking liquids, stirred them well, and dropped in the blacksnake. There was an outraged hiss from the blacksnake, a flash of black lightning, and a voice said, "Yeah man."

Dumbert opened his eyes; there before him stood the most amazing Jinn he had ever seen. He (the Jinn) was rather short (about 8 feet tall) and wearing: a magenta-colored beret with a violet tassel; shades; a long, blue goatee; a black T-shirt strikingly splashed with chrome yellow paint; a pair of old jeans with one pocket missing; a belt made out of an old piece of rope (Dumbert thoughtfully regarded the clever way in which the rope was fastened with a rather well-tied Turk's-head knot); and a pair of dirty green sneakers with no laces. He was smoking a filter-tip reefer, and a wet paint brush was stuck rather casually behind his left ear.

"What was that bit again, man," said the Jinn.

Dumbert recited his riddle.

"Well, man, it's like first we gotta dig the physiomaticological coherences of that question. I mean it's like we gotta dig the fundamental transcendent constitutives and self-enclosed projective subjectivities of it. Basically of course, man, the empirical mode which constitutes the existential web of the..."

"Which reminds me," interrupted the soothsayer, glaring at Rouqil's belt knot, "I'm late for my class; the riddle will have to wait for another day."

\* - You Marvel Comics fans, who are used to seeing footnotes about previous installments, can refer to Chapter XVI in KNOWABLE #8. Lilith is a witch at the royal palace, and Hexa, who is about 40, did bear a girl-child who was kidnapped by pirates some twenty years ago. Your guess is as good as mine. - JB



"I'm really not that interested," said Dumbert, with a slightly dazzled look in his eyes. "In fact, you might as well forget about the whole thing."

"Don't sweat it, man," said the Jinn as Dumbert stumbled out the door and headed back towards the ship.

## CHAPTER XXI

by Paul Glattstein

The good ship Cinatit arrived at Noatun without incident, except a near miss with an iceberg during the night, and the continual sea-sickness of Sir Tinly's steed Puritas.

## CHAPTER XXII

by Judy Glattstein

It was, Dumbert reflected, a sorry comment on duty and devotion when a mere dragon would leave his job (with which he intended to get the where-with-all to redeem his daughter) and take off on an aerial reconnaissance for a witch. Even, he hastily added to himself, one as bewitching as Lilith. He winced at the unintended pun. When he started to make unconscious puns, things were in a bad way. But then, things were in a bad way all over. He listed them to himself. The dragon had lost his job. He had gotten drunk. When drunk, he had wept such a copious amount of tears that he had drowned the barkeep's pet cockroach. The barkeep had kicked the dragon out. Having no place else to go, the dragon had returned to the castle looking for Sir Tinly and Dumbert. Since they were not there, being at the Old Wold instead, he had again begun his weeping and wailing. Then, reflecting that confession is good for the soul, he had sought out Father Neminis to confess. Confess what, Dumbert speculated, his undragonly loss of fire? Upon learning, after many meanderings and maudlin whimperings, that a Black Mass was being planned, Father Neminis laid penance on the dragon to the extent that the two of them returned to the site to look over ("sight", thought Dumbert, to pun again) the activities. Whereupon it was decided, by Father Neminis, that a White Mass would have to be held on the opposite, but twin, peak, in order to counteract the evil influences of Lilith's plans. Whereupon, sighed Dumbert to himself, all of them had been recalled to the castle in order that Sir Tinly, the bravest, purest, mostest, etc. knight in the kingdom might lend his support to the occasion. At least, he reflected (looking into a muddy pool of water) the problems brought up by Yog-Thuthuthoth's sex, if sex it might be called, were temporarily put aside. Which left him here at the castle with all the armor to be polished and errands to be run and the question of the disappearance of Doedah to be puzzled over.

He walked moodily down the road, kicking idly at rocks and such. He kicked one such rock and revealed a small brown bilch sleeping underneath.

"Hello, bilch," said Dumbert.

The bilch, frightened by the sight and sound of this huge thing, fled into a near-by teapot. Curious, Dumbert picked up the teapot and looked inside. There was no sign, or sight, of the bilch. This, decided Dumbert, was quite odd. He had seen the bilch run in, and nothing had run out. Not even, he concluded gloomily, a belch. Maybe, he continued thinking, since he had no one else to speak to, much less think at, it was a magic bilch. With that, he brightened up somewhat and decided to take the teapot to the castle magician and see what he would say. With that thought in mind (indeed, where else to keep a thought?) he set down the road at a quicker gait.

The bilch, having hidden in the spout all this while, concluded that the giant



must be quite mad, and settled down back to sleep.

Slipping in the back entrance of the castle, the better to avoid Sir Tinly and his over-present chores, Dumbert started to make his way through the great castle kitchens.

"Aha!" roared a voice behind him. "Again I find you tam fool squires schtoaling the crockery!" It was Wouter van Dumpling, the castle kitchen chef. "All the time, neffer anyting left if I dodn't vatch out. Vat you tink, ve got self-returnink dishes?" Wouter was infuriated. A rival cook, Schnitz-und-knepp, had brought a new dish to the king's attention. This dish was pastrami pizza. It looked as if he might be replaced. His temper, never very tame, had gone completely feral and was prowling around looking for blood.

Without giving Dumbert a chance to explain that this was only an old broken enchanted teapot with a magic bilch sir, the teapot was tossed into a pan full of hot-soapy sudsy water. The bilch, thus rudely awakened, gave a mighty squeak and bounced forth covered with suds and a piece of old bacon rind draped over one ear. Screaming mighty threats and imprecations at the top of his mighty though slight lungs he swam to the edge of the pan and hauled himself up to the edge. The kitchen maids took one look at this mouse-like creature and of one mind, fled screaming from the room. Wouter van Dumpling ran after them. Not in fear though, his aim was to get them all back to work before the food burned up. As he turned the corner, Dumbert almost thought he saw the temper turn the corner after him. It was a shaggy dog-like beast with bloodshot glowing eyes and drool slobbering from its avid lips. A just temper for such a man, thought Dumbert, as he took the bilch in the palm of his hand. The beast promptly ran up his arm to his shoulder, down the front of his jacket into a pocket, and thence to sleep. With a sigh, Dumbert retrieved the by now soapy teapot (filled with odds and ends of coffee grounds, orange peel, old apple cores and more bacon rind) and started to trudge up the stairs to the warlock's chambers.

On the way up however, he heard Sir Tinly descending. Quickly dropping the teapot in an old spittoon, he leaped in after it.

After a few minutes, he clambered out. Ruefully he looked at his clothes. If not spotless, they had been respectable. Now, however, the story was different. As he started to wipe off the tobacco and betel-nut juice stains (damn those visiting South American dignitaries anyhow) he heard a minute squeaking from one of his pockets. The bilch, interrupted again in the middle of a nap, was having a fit. For an animal of its diminutive size, it was having quite a large fit. Dumbert hastily thrust it back into a pocket.

However, unbeknownst to him, Lilith's howlet Madge (who was sitting under an old suit of armor) had noticed the whole incident. She waited until he had left, and then waddled down the corridor to Lilith's chambers. Grumbling and grunting to herself as she bounced down each and every step she cursed her remote ancestress who had taken up with one of those miserable condors. The only thing handed down through the generations was the inability to take off unless jumping from a cliff or flung by hand or catapult into the air. It wasn't size (for Madge was ordinary howlet size (regulation size, you might say)) but perhaps a temperamental deficiency. Inconveniencing, that's what it was.

However, just then, up the stairs came Chicken von Hawk, keeper of the king's news. Being rather near-sighted he mistook the howlet for an escapee. This was not too difficult, as the light was almost non-existent and the fog and smoke from the burning pastries and joints in the kitchen added to the difficulty. Popping Madge into his game bag, which already contained a dead rabbit, von Hawk continued on his way.

Now, unbeknownst to Dumbert, this was to be his day for animals. It was in the stars, you might say. And so, as he went up the stairs there was a cat sitting on the landing. But no ordinary cat, this. It sat there with its tail curled around its paws (better to hide the sixth toe) and yawned a dainty cat-type yawn, turning its tongue and revealing its glistening white teeth. It gave (or she gave, would



be the better phrasing) a disinterested lick to its glistening sleek grey coat, got up, stretched lazily with its rump in the air, and then followed Dumbert up the stairs. This was another of Lilith's spies.

Father Neminis was consulting with Lysenconius as to the steps to take to ensure the protection of the sacraments. God was on his side, he knew, but then Lilith had help from below. And Lilith was taking no chances. Hence Tib was on her mistress's bidding as she waited. And the teapot full of rubbish must have some occult significance, she reasoned, for who would carry such a pail of slops around for no reason at all.

However, Lysenconius had counter-charmed his section of the corridor, and as Dumbert came up the stairs a large mastiff bounded down, knocked him over, and departed yelping eagerly after the snarling, spitting Tib.

Both Lysenconius and Lilith had an unvoiced agreement to so disguise their imps, in order to avoid upsetting the human clods who inhabited the castle.

The bilch, now hysterical, climbed onto Dumbert's shoulder and sat there maniacal and red-eyed, muttering to itself. He finished climbing the stairs and knocked on the door. The serpent door-knob grinned at him and untwined from the latch, permitting the door to swing open.

Lysenconius turned to Father Neminis and said, "See, I told you that our answer would be the next thing through the door. That tired bilch, by the laws of similarity and contagion, will prove the means of putting the castle to sleep in order to remove the hosts to a safer place in the chapel. Though why you moved them into the castle is above my understanding. Come in, Dumbert, come in, don't just stand there. And tell that fool asp to latch the door again."

Noting the bemused look on the boy's face he explained, "It is the latest thing," he said. "The snake is aptly named, for he locks the latch and is thus an asp hasp."

Father Neminis coughed and choked a little. It ill behooved him as a man of God to traffick with sorcerers and such, but as Hillel said, to the charitable the way is ever open. This deed of theirs would add weight to the balance pan of order, and entropy would continue. Chaos would be foiled. Lilith was the one who had tempted him, and this weakened him to the extent that she had him remove the wafers to the castle proper. So far though, she had been unable to take them. Though her balance, he concluded, was, to use a lay term, stacked.

Lysenconius quickly made a little box of sandalwood and rosewood. He lined it with aromatic grasses and poppy petals. Into this he placed the bilch who gave a suspicious stare all around before returning to his favorite occupation - sleep. And as he slept the warlock placed the box gently into a scale-model of the castle, tied a red silk cord with three silver bells and a bead of coral around it, and tiptoed out of the room. He handed to Dumbert and Father Neminis each a little golden ball with a pearl inside and cautioned them to hold on to it at all times.

"As long as the bilch sleeps," he cautioned, "the castle sleeps. And as long as we hold these charms we will remain awake."

Quietly the three conspirators crept from the room.

TO BE CONTINUED

Ken, the Magic G-Man  
Had the powers of psi,  
And captured telecriminals  
For the Queen's Own F. B. I.

His sidekick was King Henry,  
His mark was old Queen Bess,  
And every story put him in  
A less convincing mess.

- John Boardman



## OPERATION AGITATION

The OPERATION AGITATION colophon has appeared quite frequently since the last issue of KNOWABLE, over six months ago. Two of them have ceased publication: DAGON, which folded when APA-F was discontinued in October 1965, and RURITANIA was absorbed into GRAUSTARK when the postal Diplomacy game which it reported was concluded. GRAUSTARK, the oldest bulletin of postal Diplomacy, has occupied the major part of my publishing efforts. Since KNOWABLE #9 the following OPERATION AGITATION publications have appeared:

229 DAGON #55	248 DAGON #64	267 PILLYCOCK #22
230 DAGON #56	249 DAGON #65	268 GRAUSTARK #78
231 GRAUSTARK #63	250 GRAUSTARK #68	269 RURITANIA #39
232 DEIRDRE #1/ DAGON #57	251 DAGON #66	270 GRAUSTARK #79
233 DAGON #58	252 DAGON #67	271 GRAUSTARK #80
234 PILLYCOCK #19	253 DAGON #68	272 PILLYCOCK #23
235	254 GRAUSTARK #69	273 PILLYCOCK #24
236 GRAUSTARK #64	255 THIS OUR CITY #6	274 GRAUSTARK #81
237 RURITANIA #37	256 DAGON #69	275 GRAUSTARK #82
238 PILLYCOCK #20	257 GRAUSTARK #70	276 GRAUSTARK #83
239 THIS OUR CITY #5	258 GRAUSTARK #71	277 GRAUSTARK #84
240 DAGON #59	259 GRAUSTARK #72	278 GRAUSTARK #85
241 GRAUSTARK #65	260 GRAUSTARK #73	279 "LUSITANIA #9"
242 DAGON #60	261 GRAUSTARK #74	280 RURITANIA #40
243 GRAUSTARK #66	262 GRAUSTARK #75	281 GRAUSTARK #86
244 GRAUSTARK #67	263 RURITANIA #38	282 GRAUSTARK #87
245 DAGON #61	264 GRAUSTARK #76	283 GRAUSTARK #88
246 DAGON #62	265 PILLYCOCK #21	284 KNOWABLE #10
247 DAGON #63	266 GRAUSTARK #77	285 GRAUSTARK #89
		286 GRAUSTARK #90

Unaccountably, the number 235 was not used in the above listings. The publication listed as "LUSITANIA #9" is also in error, since the postal Diplomacy bulletin Lusitania was not suspended, but is still being published by Bernie Kling.

POINTING VECTOR, the oldest OPERATION AGITATION publication, is a personal newsletter of fact, comment, and opinion. It has been published at irregular intervals for almost five years, but lately has begun to be too much trouble. In an attempt to reduce the amount of time I am spending on amateur journalism, I am closing out POINTING VECTOR with two issues which are now in preparation. One comprises a number of articles in my files, and the other will catch up on letters of comment not yet printed. These issues, #26 and #27, will go out to all subscribers and trading fan editors, and may be ordered by others @ 25¢. THIS OUR CITY, the New York supplement of POINTING VECTOR, is also defunct.

This will leave only three OPERATION AGITATION publications: KNOWABLE, a science-fiction and fantasy fanzine; PILLYCOCK, which circulates in that most turbulent of amateur press associations, the Cult; and GRAUSTARK, which records the progress of postal Diplomacy games. (Subscriptions to GRAUSTARK are 10 issues for \$1.00. Back issues are available for both GRAUSTARK and RURITANIA at the same rate; write for details.)

I am clearing out back issues of defunct publications. Only the 24th issue of POINTING VECTOR is available, and costs 15¢. Five different back issues of DAGON will be sent to anyone who sends me a stamped, self-addressed legal-length envelope. Available are issues 47, 49, 52, 55, 57, . . . . DAGON #57 is Deirdre's birth announcement, and even at this late date is enclosed for those who have not yet received it. I had originally intended to get KNOWABLE #10 out sometime earlier, and the birth announcement does seem dated when one considers that its



subject is now  $7\frac{1}{2}$  months old, over 10 kilograms mass, and has four teeth and a well-defined personality.

The following back issues of PILLYCOCK are available on request to members of the Cult's waiting list: 6, 9, 13, 17-24.

Also available is SCIENCE MADE TOO EASY, a collection of the articles which appeared under that heading in the first six issues of KNOWABLE. These humorous analyses of the sciences are 15¢ each.

No back issues of KNOWABLE are available.

#### THROUGH HILBERT SPACE WITH SWEET FANNY ADAMS - XII

It was in 4097 that Fanny Adams, bored with life's trivialities, decided to write her epic history of mankind and the universe. As she wanted her work to be truly a literary epic as well as an actual recounting of the facts, Fanny determined to consult the well-known authority on epic literature, Professor Malcolm Donalbain.

Having listened to the good professor, she at once set about to undertake, more or less, her massive project. Upon completion of the first chapter, she returned to the benevolent Professor Doctor for his criticisms.

Not long after he had begun reading the manuscript, the professor began to laugh and then to cry. Puzzled by his behavior, Fanny inquired. Said the professor, "Everything was fine until you threw in the anecdote about the mother-in-law."

"But," said Fanny, somewhat taken aback, "you said it was supposed to be funny!"

The patient professor chuckled and said, "I said to 'Begin with an invocation to a Muse.'" (with thanks to Mike Irwin)

#### PI

Of three slices is this pi composed:  
The first is poesy, which critics seldom  
- find;

The second, drama, of itself proposed  
To colour deeply lettres of this kind.

The third is phantasy, that horrid bird  
Upon the writer's shoulder firmly perched;  
It shrieks its love-call, "Modify the  
word!"

For which the artist painfully hath  
searched.

The critics, ever mindful of the New,  
Ignore the veins of Old in prose  
contained;

They bleat panegyric for the very few  
Whose work they never have in full  
explained.

We bleed, we die, for clarity and tone,  
And whet upon the stone of Art our  
diction:

If we write well, they blink; if ill,  
they groan,

BUT THEY THEMSELVES CANNOT WRITE  
SCIENCE-FICTION!

- Fred Phillips

"The notion that only engineers and scientists ought to take physics is sort of sad. Physics is every bit as important to a 'liberal' education as English or history. I can't conceive of a well-rounded person being ignorant in any of these areas. Someone who knows only the humanities is hopelessly ignorant not merely of something technically useful but of one whole intellectual facet of the human race."

- Prof. George H. Bowen  
Iowa State University



## VOLKS-SOZIOLOGIE

by Marcello Truzzi

Recent developments in the sociology of knowledge have captured the imaginations of many of the students in our department. Therefore, it was with great excitement that we viewed the recent lecture in wissensoziologie by the eminent Dr. Karl Miehnam, Professor Emeritus of the University of Hühnerfett.

Professor Miehnam is probably most well known for his recent introduction of what he has termed Volks-Soziologie. Following the maxim that the perspective of knowledge is necessarily delimited by the general culture, he has attempted to avoid the biases of the Sociology currently being elaborated in the Gesellschaft universities and has attempted a return to the Gemeinschaft perspective of analysis. This mode of analysis has its well-known predecessors in other of the behavioral sciences, especially in Wundt's völkerpsychologie and in the analysis of archetypes by Jung.

Essentially, Prof. Miehnam's thesis is that societal truths are most clearly reflected in the universal commentaries to be found in the various folk literatures. These truths have found their focal point and greatest refinement in the universal proverbs found through cross-cultural examinations. (1)

Based on this formulation, Prof. Miehnam attempted a content analysis of the folk literature of several societies. Through a compilation of the frequency figures on these aphorisms, he developed a ranking system (the Miehnam Aphorism Rank Coefficient Scale, or MARCS) which theoretically reflects the intensity of meaning for each of these sayings for their societies. Differences in these rankings demonstrate the nature of social reality as viewed by these societies. However, the unique and startling aspect of Dr. Miehnam's work was his discovery that certain Universal Aphorisms had the same MARCS score. This was to be the essence of Volks-Soziologie. (2)

Following the well-established format, Prof. Miehnam has attempted a formalization of his theory by developing a matrix system showing the major processes and properties of various scales of social systems, and he has tried to relate these aphoristic verities to these dimensions. Following are some examples of these propositions as formally stated.

(continued on p. 16)

(1) - Prof. Miehnam's inspiration for this theory occurred under rather interesting circumstances. A young freshman student in one of his introductory courses was having difficulty in understanding the postulate that the relationship between size of a social system and its efficiency varies with other intervening variables. Finally, after much classroom discussion, the student asked, "Oh, you mean 'many hands make light work' but 'too many cooks spoil the broth'?" Prof. Miehnam patiently explained that although such a proverb does superficially express the postulate quite well, it is simply an intuitive and simplistic generalization based on common experience; whereas the postulate is an explicit articulation emanating from empirical research. That same afternoon, Prof. Miehnam was conducting a graduate seminar in balance theory. The discussion had centered about the conflicting results of various experiments cited. One of the students laughed and commented, "It seems to be a case of whether 'birds of a feather flock together' or 'politics make strange bedfellows.'" From such trivia to major theories often develop in the minds of geniuses! (Cf., "mighty oaks from little acorns etc.")

(2) - Vide: K. Miehnam, Volks-Soziologie (Leipzig, Kleino Goldene Bücher, 1962). Also, K. Miehnam, et al., Symposium on the Sociology of M. Goose (New York, Little Big Books, 1963).



## SCIENCE AND SOMETHING ELSE

review by John Boardman

"When Science from Creation's face  
Enchantment's veil withdraws,  
What lovely visions yield their  
place  
To cold material laws!"

- Thomas Campbell

"What is lost in fleeting sentiment is more than regained in the feeling of intellectual security afforded by the scientific attitude... For in the majestic growth of science, analytical in its experimental groping for detail, synthetic in its sweeping generalizations, we are watching at least one aspect of the human mind, which may be believed to have a future of dizzy heights and nearly unlimited perfectability."

- Svein Rosseland

SPIRITS, STARS, AND SPELLS: The Profits and Perils of Magic, by L. Sprague and Catherine C. de Camp, \$5.95, Canaveral Press.

A perpetual puzzle are the "something-ersers". These are people who can look at the rich diversity of the material world, at the great questions which have been answered and the great ones which remain as yet unanswered, who can turn uncomprehending eyes to the stars, the twisting paths of neutrinos, the puzzle of the genetic code, and the barely explored frontiers of human psychology, and who can turn away from this rich vista with disdain and say, "This can't be all. There must be Something Else!" And so they turn away, into fantastic mummeries, in search of phantasms generated in their own brains or in the superstitions of the ancients.

These are the magicians - and, as the de Camps use the term, it includes prophets, alchemists, numerologists, spiritualists, and those moderns who cloak the wizardries of previous generations of magicians in scientific jargon and try to pass the result off as "Extra-Sensory Perception". When two first-class analytic minds are turned on these superstitions, and strip them of the adulation which their followers bestow on them, the result is a parade of wretched delusions which arouse no emotions but pity or laughter. Not since Dr. Mackay wrote Extraordinary Popular Delusions and the Madness of Crowds over a century ago has such a carnival of lunacies been exposed to the light.

The de Camps go into the depths of time to expose the origins of magic. In prehistoric times it seems to have been an attempt to compel the forces of nature to do the bidding of humans. Both religion and science eventually grew out of this practice - which is why the authors observe that "despite what you may have heard to the contrary, magic is the world's oldest profession". But magic differs from science in its supernaturalism, and from religion in that it tries to compel, rather than implore, the "spirits".

Often the proponents of magicians present their alleged deeds with insufficient background material, leaving the listener to think that "there must be something to it". Full analysis is the best refutation of these claims, as the de Camps show repeatedly in the course of this book. They examine in detail the conjurations of an African witch doctor, Mother Shipton's famous "prophecy", the verses of Nostradamus, the Rosicrucians, the Elizabethan warlock John Dee, and such relatively modern magical frauds as animal magnetism, Christian Science, Spiritualism, and the preposterous Yelena Blavatskaya, whose career in real life would have been rejected as incredible had it been written up as fiction. Under the pitiless scrutiny of the authors, the frauds and impostures practiced by these magicians are brought out to dispel the credulity disseminated by their latter-day followers and successors.

The de Camps conclude by sadly observing that magic is still very much alive



at present. Many of the magic sects of previous centuries are still alive today, as are such creations of the twentieth century as Ballard's "I Am" movement, or Rhine's "Extra-Sensory Perception" and its attempt to storm its way into the scientific journals. The authors characterize magic in our time as "a parasitic and anti-social institution, capable of inflicting harm on mankind. Under its influence, ignorant people give up their life's savings, sometimes even break up their marriages, and often lose touch with reality. Worse still, they blindly follow any number of medical quacks, risking and losing not only their own lives but also the lives of their innocent children."

Spirits, Stars, and Spells belongs on the bookshelf of every science-fiction reader. Since s-f and fantasy fans are more than commonly receptive to new ideas, and are used to magical ideas in fiction, the advocates of various sorts of magic often try to proselytize among them. The case against magic is more rarely found expressed in detail, and refutations rarely catch up with the beliefs against which they are directed. This book will help fans place in better perspective the claims of whatever new magical fads may be foisted on them by the Campbells and Hubbards of the present and future.

#### VOIKS-SOZIOLOGIE

(continued from p. 14)

#18. Size and efficiency are positively correlated when task efficiency requires a relatively large number of items of information that can be absorbed and recalled: "Two heads are better than one."

#27. Alienation is directly related to mobility: "A rolling stone gathers no moss."

#43. The rate of supervision is inversely related to the rate and quality of production for creative tasks: "A watched pot never boils."

#69. The saliency of an attitude is directly related to the degree of proximity and positive valence of the attitude object to the person within the life space of the subject: "Out of sight, out of mind."

#81. Operational definitions of evaluative responses must be incorporated into the methodology of descriptive sociology based on the pragmatic behavioral relations of interaction: "Pretty is as pretty does."

#### SOMETHING FOR THE OBJECTIVIST

"Corresponding to this exclusiveness is the...Law of the Excluded Middle: 'A thing is either A or not-A; it cannot be both; it cannot be neither.' The equivalent of this in everyday language would be, 'If an animal is a horse, it cannot be some other animal; if it is some other animal, it cannot be a horse; and no animal can be neither a horse nor some other animal - it must be one or the other.'

"This law of thought makes very good sense. It is common sense, in fact. Until we begin to think about mules. What is that beastie, according to the Law of the Excluded Middle? It is neither one thing nor the other; it is both. It violates the neatly drawn categories of horse and not-horse. It would be consoling if we could abolish it as a contradiction in terms; but it stands there stubbornly all the same - head down, mean-looking, and uttering an occasional bray to prove the point of its existence."

- Michael Girsdansky

The Adventure of Language, p. 16



## THINGS THAT GO BUMP IN THE MAILBOX

These letters of comment on previous issues of KNOWABLE are printed approximately in the order that they were received. Dates are given where known. The comments of the editor are indicated by double parentheses.

LEE JACOBS, Box 91, Marietta, Georgia, 30060: Thanks for all the zines that you have sent me throughout the past year. They have been uniformly legible, provocative in content, and enjoyable reading. However your campaign to boycott the prozines who dare to charge sufficient cover price to keep in business could be interpreted as being in favor of a Consumer Revolt. Are you trying to bring pressure for a Government Subsidy for Science Fiction/Imaginative Literature? With such an attitude, one could believe that you are not in favor of Mom, Apple Pie, The Beatles (an open Foreign Policy), or the American Position in South Viet Nam.

((The increase of prozine prices can only drive away new readers, and as the prozine readerships decline, new writers will also be driven away. It has been suggested that the prozine is dying, anyhow, and that from now on paperbacks will be the principal medium for science-fiction. But paperbacks have no room for short stories, editorials, letter columns, science-fact articles, or the writer who has not yet established himself. A buyers' strike against high-priced prozines may not be the best answer, but is there any other way to block the apparent efforts of their publishers to price themselves out of their market?))

AL SCOTT, 2506 Shenandoah Ave., Charlotte, N.C. 28205: KNOWABLE #7 - "Splash!" was really interesting. Funny, too, since usually science articles I start and soon give up from boredom. - You write good, lucid prose.

Robert A. W. Lowndes' letter: If Lon ((Bailes)) was defending Glory Road, then it is likely that I would have agreed with what he wrote - since our stf tastes are usually a lot alike. And you can add me to the "I Don't Care, I liked Glory Road Society" roster. I just found it great fun to read. After all, wasn't it only really a satire on sword and sorcery stories anyway?

KNOWABLE #8 - I'd like to know exactly what the limits of "acquired characteristics" are as you use the term in "inheritance of acquired characteristics". I remember reading in the Science and Math Weekly that experiments with planaria had shown the differentiation between acquired and inherited or genetic characteristics was not as clear as was once thought.

It seems they trained a planaria in a Pavlovian manner to respond a certain way to light. Then they cut the planaria in half and the two halves, after regeneration, both showed the same specific reaction with light. If I remember correctly, this continued to be "inherited", though growing in direct proportion less positive, even unto the third and fourth generations.

This may be explicable through the fact that the reproduction here is not sexual, but I think it's interesting nonetheless, and may be significant.

((Presumably the training of the planaria - I prefer the Anglo-Saxon name "flatworm" for these creatures - had imprinted itself on the germ plasm in such a way that it replicated itself upon regeneration. In some of these experiments, trained flatworms were chopped up and fed to untrained ones, which then proceeded to exhibit some of the same conditioning. Obviously the imprint survived the digestive process. It now seems that hereditary factors other than genes may be affecting the processes of heredity, and genetics may have to be modified by the inclusion of a highly qualified form of Lamarckism. This, however, no more verifies the speculations of Lamarck and Lyenko than the atomic theory verified the speculations of Demokritos and Lucretius.))

Sp4 EARL E. EVERS, US 51 533 159, 269 Sig Co (Svc), APO 58, New York, N. Y. 09058: I don't remember getting your petition against paying more than 50¢ for a



prozine. If I did I'd sign it, though I don't think you're directing your protest at the root of the problem. The problem is there isn't a prozine around worth two bits these days, let alone fifty or sixty cents. And I couldn't even start to suggest a solution to that. You'd have to have a big enough readership to pay SF authors real money, then you'd have to find the authors. With no training ground for SF authors other than the fanzines and Mundania, I think it would take a long time to find them.

"The Meaning of Weightlessness" appealed to me more than most of your KNOW-ABLE science articles; I could at least understand it readily, and the subject of "weightlessness" has some immediacy to it that more theoretical speculations lack. (That sounds strange coming from a Fantasy fan, but even the furthest-out SF and Fantasy is concerned with people or similar beings and their environment.) Your discussion of definitions of weight and mention of the effects of weightlessness on our astronauts so far were interesting, but you didn't give your opinion on the first question I'd ask if such a topic were brought up. From the available data, would prolonged "weightlessness" in space have major physiological effects, or would it be a minor matter of adaptation like acclimatization to the arctic or tropics or extreme altitudes? (Yes, I know that anyone who has suffered through such a major change of environment wouldn't like my calling it "minor", but there are no large or permanent physiological changes involved.)

((There just isn't enough known yet to enable scientists to answer this question. But see Pierre Boulle's short story "L'Amour et le Pesantour" for an amusing speculation on this topic.))

"The Higher Racism" points out something I've always wondered about - all sciences and all arts have been used to express their practitioners' prejudices and follies, but anthropology and sociology seem to be the only ones that have suffered from it. I realize almost all the early sociologists and anthropologists were racists, but at that particular period, wasn't nearly everyone?

((Prejudices propagated by the students of human heredity and society have more damaging effects than those propagated by scientists of other disciplines. If an astronomer professes the Velikovsky theory, nothing is harmed but his own professional reputation. If a physician installs a Drown machine in his office, only his patients are the sufferers. But if an anthropologist or a sociologist uses his professional standing to propagate a racist theory, it is used by conservative legislators in an attempt to justify racial segregation or restrictive immigration policies. The writings of the Nordic supremacists Madison Grant and Lothrop Stoddard were used to support the National Origins Quota Acts of 1921 and 1924. Racist scholars such as Henry Garrett, Carleton Coon, or Wesley George, are now being used by white supremacists in a last desperate attempt to preserve racial segregation in the South.

((About a month ago I was meeting with members of the other science departments of Brooklyn College to select students to be nominated for membership in Sigma Xi, the equivalent among scientists of Phi Beta Kappa. One anthropology major whose name came up, who planned to be a physical anthropologist, was cited by one member of the committee as an activist in the student protest movement. I remarked that, considering the idiocies which physical anthropologists of former generations had caused to be perpetrated in the world of scholarship, it was about time that physical anthropologists of egalitarian beliefs began showing up. Much to my surprise, my colleagues from the biological and social sciences warmly supported these sentiments.))

One question I'll ask - does the "higher racism" actually help the cause of racism now that it has descended from an almost universal belief to one strongest among the lower class of minds and educations? Most of the racists I've met (and I've met most of them right here in the Army - they get along fine under Negro NCO's and Officers, and don't hesitate to associate with Negroes in all phases of their lives, but they talk as ugly as anything in The Thunderbolt if you got enough



of them together) have been the sort of people who would be more likely to oppose than support something espoused by any learned authority. That is if they ever even read or heard of such authorities. The sort who say "Bullshit!" automatically to anything endorsed by the Army, the government, or anyone remotely connected with a school.

((Be that as it may, conservative publications all trumpet forth the views of any scientist - or even pseudo-scientists such as Carlton Putnam - who speaks in favor of white supremacy. "Respectable" conservative publications such as Modern Age and National Review, less restrained ones like New Patriot and Western Destiny, and the really far-out ones like The Thunderbolt, all make much of the racist anthropologist.))

Oh yes, isn't racial or religious tolerance in itself a prejudice, a completely emotional belief? Yes of course the equality of all races in intelligence, ambition, etc. has been proven fairly well from a number of different angles, but suppose just the opposite turned out to be true as methods of gathering data about personality and intelligence are improved? What would you do then? (I would cling to my own emotional little belief and still treat people only as individuals and not judge them as members of groups.)

((Quite so. The average American may be taller than the average Japanese, but a six-foot-tall Japanese is still six feet tall.))

"The Slaughter House" was run-of-the-mill fanfiction. I expect better of KNOWABLE. "The Story" didn't go anywhere this, but it went around in readable, interesting circles. Might be a shame if a round robin did go anywhere; it probably wouldn't ever get back.

Say, I've never heard your opinions on gold flow and the present state of the country. I've heard a lot of millionaires are getting out of the stock market and so on, but I haven't heard why. All I hear is a lot of propaganda about "Don't buy on the French economy, it causes gold flow and hurts the country". But why now? Tourism and spending by the troops abroad hasn't increased that much, has it? Maybe we are in for a major depression - I don't know enough about economics to read the symptoms. I think the subject is at least worth a discussion in KNOWABLE or POINTING VECTOR.

((One of my columns for KIPPLE, shortly to be published in that 'zine, speculates what would happen if there landed on government property a gold meteorite large enough to permit the payment of the national debt and the gold convertibility of U. S. currency. The result would be a staggering inflation and economic chaos.))

SETH JOHNSON, 339 Stiles St., Vaux Hall, N. J. 07088 (23 September 1965):  
One thing about your campaign to limit the price of prozines to 50¢. Has it occurred to you that it's not the price of the prozines that has gone up but the value of your dollar that has shrunk. Isolating Science Fiction prozines from the economic laws like that can only mean death of Science Fiction prozines if it succeeds. The campaign should be against inflation in general if anything.

Consider for a moment. Ziff-Davis gave up both Amazing and Fantastic mainly because in spite of the price increase they couldn't make ends meet on the two mags. The new publishers have gone bi-monthly with both of them in attempt to cut down the returns and keep them on the racks a little bit longer. ((They have also caused their quality to plummet.)) Astoundalog itself was sold by Street and Smith for much the same reasons.

In other words if you remember the last Lunacon and consider the prophecy by Wollheim that in ten years there will be no prozines. And this could end Science Fiction altogether if you consider most of the pocketbook publishers garner their novels from the prozines. With no prozines being pubbed and only the meager royalty the pocketbooks would offer I fear the authors themselves would start writing detective and whodunits leaving Science Fiction to amateurs and hackwriters. Take a look at Badger books of England for an example of what that would be like.



What Science Fiction really needs is a prozine like the old Argosy All-Story Weekly that came out every week and carried four book length novels at a time as serials. Some in two parts but sometimes going up to eight parts. Result was this mag had more novels from its pages published in hard covers than any of the really big mags.

With such a mag the pocketbooks and their publishers would have 52 good to terrific with perhaps a few mediocre novels to bid for each year. The authors would have a market that could take enough of their output to warrant their really writing full time. And as I understand it very few Science Fiction authors make their living from writing Science Fiction.

Well this is an old subject with me and I've written it up in any number of LOC's to any number of faneds, and can't rouse much enthusiasm for it. But it would be the solution to the dilemma Science Fiction finds itself in today.

Your science and physics articles have gone over my head too for that matter. But nevertheless I've enjoyed reading them and always hope at some future date perhaps some measure of understanding will appear.

It might be interesting though to canvass your readers and find out just what the general comprehension level actually is. At least break it down into percentages.

You know after that wonderful talk on silk screen printing by Perdita at the Lunaeon I sort of wish she would really write up sort of a fan textbook on the subject. Or perhaps a better idea would be a fan text book on publishing. The mechanical details on purchasing, servicing, and maintenance of mimeographs, spirit duplicators, and even the hektograph. All this would be of no particular interest to elder fan, but it sure would be a wonderful thing for the newcomers as they come drifting into fandom eager to try their own luck and ability in fan publishing.

I see you're backing a New York bid for the 1967 WorldCon. Boston is also contemplating such a bid and this is one city that never had the worldcon before. Reason I find it attractive is that there is so much sightseeing and rubberneck tours to be taken in Boston and the vicinity.

I wonder if you have seen or know anything about the Press and Print mimeograph. This is a real simple mimeo that operates something like the old platen press only in form of sort of a metal book. You have to ink the pad by hand and then can get up to fifty clear copies according to the advertisement. I couldn't quite make out though if you had to remove the stencil to re-ink the pad if you wanted another fifty copies and wondered if you knew about this. If the thing really works I'd like to apply for the agency but do not want to victimize neofans who would be the main customers for the thing. Still the thing sells retail for less than twenty dollars so would really be a boon to the beginner faned.

((I know nothing about this means of duplication. Perhaps some readers of KNOWABLE can answer Seth's questions about it.))

Well, that's about it for this round. Permit me to hope you've changed your mind and will continue to publish KNOWABLE for all time to come. It is one of the few beacons in the black tide of reaction and all too many fanzines of late are taking on a rightist tinge I do not appreciate.

((I have no plans to end KNOWABLE. As I've announced on p. 12, I will soon terminate POINTING VECTOR. However, I plan to give my progressive political and economic views ample play in my Kipple column and in letters of comment to the politically oriented fanzines. You are right, though, about a distressing number of conservative fans. Two southern neos in TAPS heap praise upon the sheeted heads of the Ku Klux Klan, and a northerner in the same apa is liberal only in his use of the word "nigger".))

JUDY GLATTSTEIN, 457 Marietta Place, Pittsburgh, Penn. 15228 (28 Sept, 1965):  
Paul found the following want ad for you:

(Electronics World, Oct. 1964) Copyrighted theory gravitation caused by push-



ing radiation from the stars. Important space age implications. \$1.00 refundable. Carnahan, 4407 Avenue H, Austin, Tex s.

HARRY WARNER Jr., 423 Summit Ave., Hagerstown, Md. 21740 (10 October 1965): If I didn't miss something important in your essay on weightlessness, I assume that the human body would react as well in a gravity-immune condition like interstellar space as it does in the free fall situation during multi-day orbital flights. ((As far as we can presently tell, this is correct.)) So I wish you would have gone into one other matter: why the human body doesn't utilize the effects of gravity in any vital way to operate, when this gravity is a constant factor in all climates and at all times. Even hens use it, to lay eggs. Could the answer be the accidental retention of physiological procedures left over from our water-residing ancestors that have never been junked and replaced by something better since we've been out on dry land? Maybe that's why we don't get visited by creatures from other planets. Maybe earth is unique for its intelligent life arising out of the water and everywhere else the beans haven't figured out how to survive without gravity conditions during long trips that wreck their different internal processes. Yes, I know they could rotate their spaceships to create an illusion of gravity but maybe the notion of going out into weightless areas frightens them so much they can't think clearly about solutions for the problem.

((Had the land-dwelling animals possessed gravity-dependent organs or internal processes, it would have retarded their occupation of almost every ecological niche of the dry land and air. Could there be a single gravity-dependent mechanism that would serve equally well mankind, the sloth, the bat, the spider monkey, and the seal? This is an interesting topic, though, and I would welcome a letter of comment or, better, an article, from any biologist in the crowd.))

"The Slaughter House" didn't make too great an effect on me, I'm afraid, because I noticed that it was only a page long and suspected that there might be some kind of a punch line. That made it easy to guess the situation. I question the practicality of this kind of butchering, unless Dur belonged to a race of very small or weak creatures. ((Like, perhaps, the thrintum in Larry Niven's Hugoworthy "World of Ptavvs" (Worlds of Tomorrow, March 1965).)) We don't go to all that trouble when we butcher hogs or kill any other animals small enough to be handled without strong mechanical contrivances.

There are quite a few exceptions to Earl Evers' theory that the best fan writers and artists are professionals. If you leave out of consideration a rare and isolated sale, there are such highly regarded fan writers as Willis, Berry, Rotzlor and Eney who are amateur writers. If your question mark after Buck Coulson's name mean you feel he was misidentified, you may not know that he has worked for many years as a technical writer. It may not be his present work, since I think he's changed jobs. Maybe the prevalence of people who write professionally among the higher-rating fan writers is caused at least in part by the manner in which selling prose puts a person in the habit of writing even when he doesn't feel like sitting down and pounding a typewriter. Quite possibly a lot of these pros wouldn't continue to write for the fanzines, if they weren't reconciled to the ordeal of writing at times when they'd rather do anything else.

It's rare that I find myself in full agreement with Don Wollheim. But he has stated exactly the things I've been afraid to try to put into words about Lysenko. A couple of examples he might have added: The quick way in which crows learn to fear a man carrying a rifle, and the manner in which foxes, I've read, began to run along railroad rails when the steam cars arrived because dogs couldn't follow their scent on the metal.

Nothing rereadable outside Astounding in the prozines before 1939? ((Or so said Nate Bucklin in the last KNOWABLE.)) Aside from the anthologized exceptions that he notes, I can think of many stories that we'd be poorer for not having encountered. Most of the early Campbell novels. The Stranger Club stories by Laurence Manning. Dr. David Keller's shorter stories, still curiously gripping once



you get accustomed to the naive writing style and some awful bloopers like the suggestion that "history" was derived from "his story". ((Well, compare the French histoire, which means both "story" and "history".)) Practically all of Weinbaum except the novels. ((Except?)) No, I'm wrong there, come to think of it; Astounding published quite a few of his shorts. Well, the first Weinbaum, anyway. Of course, the real problem is that these stories are old enough to be old-fashioned but not old enough to be classics from a completely alien past, so we laugh at most of them. Wait another quarter-century, and fans will be raving over those early prozine issues as they now feel respectful towards Wells and London fantasies.

((London's The Assassination Bureau didn't attract any rave reviews when it was recently discovered and published. And no one enthuses over his 1914 story "The Unparalleled Invasion" except the John Birch Society, which in its monthly American Opinion praises it as a forecast of an "inevitable" war with China. But his The Iron Heel remains as a startlingly accurate forecast of Fascism, written at a time when most American Socialists blandly supposed that the existing order would blithely lie down and let them take over.))

...I hope that the poll sheet you enclosed is the real thing. The fan poll group organized three years ago seems to have petrified. But the number of votes will undoubtedly be cut by one-half or two-thirds because so many fans will decide it's impossible to remember which outbursts of fanaticism and what fanzine issues occurred in an era ranging from nine to twenty-one months ago.

JAMES TURNER, 104-C Oramer Hall, Pershing Group, University of Missouri, Columbia, Mo. 65202 (13 Oct. 1965): KNOWABLE #9 arrived quite some time ago; of course, and it should be Dave Hall who's writing this loc. But he's at class now so I'm writing it for both of us.

- There's not a whole lot I can intelligently comment on. I've only been in fandom a few months so I can't really expound on the Breen Mess, except to say that it looks to me, from what I've heard, that Walter Breen got himself railroaded in a grand manner. I'm told that he isn't the most likable person in existence but, also from what I've read, fans tend to have a higher opinion of him than they do of the man who considers him a pervert. ((Donaho, who ran for TAFF last year on a "Keep Fandom Pure" platform, got only 22% of the vote.)) If Breen is someone with a taste for young boys and if this is as apparent as Donaho seems to think it is, volumes therefore have been spoken about Donaho.

I highly commend you on your article on "The Meaning of Weightlessness". This sort of thing has never been one of my strong points - to my great sorrow. That fact is the reason I can't really say anything pertinent.

....Pen Solon doesn't write badly at all - in fact, for fan fiction, he's darn good. But "The Slaughter House" was rather old hat and I spotted the gimmick by the time the first paragraph had ended. I must, however, compliment him on the general ease and skill of his writing style. If he keeps working at it, he could well make it pro someday.

JAMES SANDERS, 180 E. 88th St., New York, N. Y. 10028: "The Meaning of Weightlessness: I think I have found a major flaw (well, okay, a minor flaw) in your two car parable. You would not have to check the surrounding features to tell if the two cars were being accelerated at the same rate. If you feel an acceleration (and this is usually easily determined by internal feelings, certainly more easily than by checking the surrounding area) and yet the other car is at rest in relation to you, then you know that you are both being accelerated at the same rate. It would only be necessary to check surroundings to tell if you are at rest in relation to the ground or if you are in motion.

((This procedure would substitute reference to internal physiological reactions for reference to external signposts. The principle is the same - some ex-



periment must be performed to determine whether you are, or are not, accelerating with respect to a designated frame of reference.))

As for the sexual feelings being felt in weightlessness, you did notice that recent astronauts have gone up in pairs, and that they admit to taking their suits off. Any implications drawn from this are your own responsibility; certainly I am not suggesting anything.

I would be interested to see a list of those novels, shorts, and writers who received some of these Junior votes.

((Well, some credit may append to placing second for a Hugo, but I can't imagine anyone wanting to be second for a Junior, or having the fact generally known.))

You might mention that the "In Days of Old..." series will be appearing in Zeus, starting with the first 5 in Zeus #2. ((Zeus is Sanders' genzine. The series "In Days of Old..." appeared originally in my APA-F 'zine DAGON, and deals with the pulps of the late '40's and early '50's.))

On the letter column:

Smith: I dispute with you the existence of the mystical concept of races. I claim that, with the massive interbreeding, as well as with the seemingly more and more certainty of the notion that there was basically one human race at the beginning with various physiological differences showing up after an early dispersion, that the whole concept is meaning-free.

((Unless Sarge Smith and I were wrong on our sole point of agreement, the non-existence of a life after death, your rebuttal will not reach him. He pulled the other foot into the grave over a year ago, and probably kneed the Angel of Death in the groin as he went.

((Arthur George Smith was the "Sarge Smith" to whom Heinlein dedicated Starship Trooper. As Smith made clear in his letters to Kipple, he believed that only a man who volunteers for military service is fit to be a citizen. Heinlein made this one of the major elements in the society of his novel.))

Various: On the Pohl mags, I classify them as possible the top of the field, with only Analog close. Worlds of Tomorrow is the surprise. Despite printing such horrors as the Henderson trash "The Effectives", and the Reynolds botch "Of Godlike Power" (and I am a Reynolds fan) it has maintained a high average by printing first-rate stories like "World of Ptavvs", the two Dick masterpieces (and probably his best two) "All We Marsmen" and "Project Plowshare", the Riverworld series by Farmer, and a few others. They seem to vary from Hugo-deservers to Junior-deservers. Galaxy has been pretty bad recently, even though it has the greatest book reviewer in s-f history, notwithstanding Damon Knight. If has been coming up with good stuff, though nothing great.

Wollheim: I think that eventually it will be found that Lysenko and Darwin were both partly right. ((Yes, particularly now that it appears that the gene is not the only mechanism for transmitting hereditary characteristics.))

As for the Con, hmmm. I don't know who I am supporting in '67. I am slowly growing disenchanted with New York. Syracuse is laughable, Chalker turns me off Baltimore, and I don't know Boston's capabilities. If there is a decent Boskone I will support them, if not, then New York or Baltimore.

((Now that the Boston WorldCon committee has lied to the Sheraton hotel chain, telling them that Boston already had the '67 WorldCon sewed up, I think we know a little more about Boston's capabilities. See Focal Point #21 for details.))

Bucklin: My favorite years for ASF are '60 and the mid '50's, but I don't have any of the early '40's stuff.

Solon: Since when is sociology a science, John?

((It is as much of a science now as physics was 400 years ago, and as much progress remains to be made. It is a branch of psychology, which is a branch of physiology, which is a branch of zoology, and thus perfectly capable of being called a science.))



RICHARD D. MULLEN, Apt. 11, 525 South 6th St., Terre Haute, Ind. 47807 (25 January 1966): Your idea of boycotting magazines that sell for more than 50¢ strikes me as ridiculous: I'd be glad to pay 75¢ or a dollar or more if such a price would enable the publishers to put out better magazines.

((Well, are today's 53¢ and 60¢ magazines better than they were when they cost 25¢ or 35¢?))

JWC probably considers himself a conservative, but many of the ideas expressed in his editorials and in the stories that he prints seem to me to belong more to the left than to the right; they are a peculiar mishmash. Analog is still the best of the science-fiction magazines - which, indeed, I suppose you and your friends recognize by voting it the worst.

Your piece in #9 on "The Higher Racism" might well have mentioned The Concept of Race (Ashley Montagu, ed., Free Press of Glencoe, 1964), a collection of articles demonstrating (to my satisfaction, at least) that the concept of races - or "subspecies" - is untenable. A magazine such as yours might well publish an article on race as a pseudo-science in science-fiction. ((Any volunteers?)) In his recent piece on the science-fiction detective ((Worlds of Tomorrow, January 1966)) Moskowitz passes rather lightly over David H. Keller's "The Menace" (Amazing Stories Quarterly, Summer, 1928), which was about as viciously racist as a story can be but which was far from unique in science-fiction up to and probably beyond 1930; even Wells once accepted the idea of the inferiority of Negroes. ((Where?)) On the other hand, I remember that Fred McIsaac (a pseudonym, I think), a prolific contributor to Argosy in the '20's - not of science-fiction - had one story which accepted the idea of racial equality and protested discrimination; not all pulp writers at that time were ignorant in such matters. Again, although I have read in one or two places lately that Burroughs was a racist, the little Burroughs that I have reread does not bear out that idea. ((See particularly Jungle Tales of Tarzan)) But here I probably betray the fact that if I am a fan, I am a neofan, for I have read none of the probably very great quantity of fan writing on Burroughs - writing in which this question has probably been thoroughly discussed.

#### EDITORIAL REMARKS (continued from p. 3)

drive Walter Breen out of fandom on the basis of vague, contradictory, and scurrilous charges of immorality, has failed, and its authors were repudiated by FAPA and TAFF votes. But, in early 1965, John B. Speer revived the whole mess by printing, as described in KNOWABLE #9, a resume of the old charges and some new ones, including a number of outright lies.

Apparently the Exclusionists are not willing to let this issue die down, and are trying to keep these outrageous charges alive. Though I, and most anti-Exclusionists, were then willing to live and let live, the continued attacks by Exclusionists apparently will not permit us this luxury. Several of his fellow-Exclusionists have come to the defense of Speer's lies. Moreover, most of them have begun a campaign of similar innuendoes about James Wright, this time on political rather than sexual grounds. Just as they once claimed that fandom should be saved from Breen's alleged sexual radicalism, so they are now trying to save fandom from Wright's alleged political radicalism. Like the attempted Breen exclusion, most of the discussion of the attempted Wright exclusion has been carried on in the Cult, and I prefer to leave the details in the pages of that amateur press association.

But, since the anti-Breen crew is unwilling to let the controversy die down, I have decided to keep them identified for the benefit of new fans who have a right to know who their potential slanderers are. From now on, the names of all Exclusionists will appear in my publications followed by the letter "X" for Exclusionist. (As it does for the Black Muslims, this letter will also serve to mark bigots.) In particular, this identifying initial will follow the names of Bill Donaho (X), the preposterous "Patriarch" of a sect of religious crackpots, who led off the charac-

(continued on p. 30)



## MY REASONS FOR REFUDIATING ANALOG

by Thomas O. Mallory

"As a loyal member of the human race I have resolved to give no further support to Analog. T. O. Mallory, Box 6, Sapello, N. M. 87745." - classified advertisement, Fantasy and Science Fiction, February 1965.

For some years, it has become increasingly obvious to me, a sentimentally attached ASF reader for more than twenty years, that John W. Campbell has two strong antipathies - toward democracy and toward Negroes. Furthermore, he has been steadily increasing his efforts to find intellectual justification for his prejudices and to recruit his readers to his causes. These efforts showed in the selection of stories (I noticed some propaganda stories and probably overlooked the biases in many others), in the selection of letters to be printed, in editorial comments following the letters, and in full-length editorials.

In his editorial in the November 1964 ASF, Mr. Campbell made his attack on democracy in a manner that I could not overlook or condone. I am not particularly sentimental about democracy, having sometimes complimented it rather cynically as man's least efficient form of tyranny; but I have had more than enough of neo-nazism thinly disguised in contemptuous attacks on something misrepresented as democracy (or "extreme liberalism" as Mr. Campbell and some others call it). I agree with Lincoln that our democracy, our government of, by and for the people, though far from perfect, is the "last best hope of earth". An attack on this ideal is not only an attack on our nation, but an attack on the human race itself and its hope for the future.

In his December 1964 editorial, Mr. Campbell made it unmistakably clear not only that he dislikes Negroes (that has been clear for some time), but also that he is willing to use ASF as a propaganda organ for the viewpoint of the white racist. The editorial - in the context of world and national events of 1964 - could not be construed otherwise than as a cleverly presented justification (almost glorification) of all the world's Bull Connors. At this point I found it impossible to be an accomplice, even to the extent of buying one more copy of the magazine. As a white ex-Texan, I am far too well acquainted with the kind of people whose cause Mr. Campbell is promoting, too well aware of the kind of world they want, too sadly familiar with the way such people have dehumanized themselves in their tireless attempts to dehumanize the Negro.

Mr. Campbell has a perfect legal right to propagandize for his opinions, and I have no desire to see any legal abridgment of that right. His moral right is another matter entirely, and one with which his own conscience must contend. I have a moral obligation to make sure that I give no support, however minor, to advocates of oligarchy and racism. My advertisement in F&SF is probably not all I should do; it was certainly the least I could do.

I grieve for Mr. Campbell and ASF and hope for their recovery. I could not write to ASF. One reason was that my letter, if published, would merely have furnished a starting point for more of the offensive editorial comment. Moreover, educated people of normal intelligence who believe, at this late hour, what Mr. Campbell believes, people who abuse reason as he has done, are not to be argued with, not to be brought to their senses by logic. They must be challenged, however, to demonstrate (for the benefit of innocent bystanders) that their warped arguments do not convince everyone.

Hence my advertisement in the February 1965 F&SF.

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The publisher of KNOWABLE wishes to express his complete agreement with Mr. Mallory's statement, and to urge KNOWABLE readers to give no support to Analog's not too thinly veiled apologies for political and racial elitism.



## VACUOLE THEORY

by C. O. Ingemells, with commentary by John Boardman

In several back issues of KNOWABLE, the publisher-editor has expressed a low opinion of pseudo-scientific theories, which are frequently put forward by people whose knowledge of the subject matter of the sciences, small as it is, is greater than their understanding of what a scientific theory is, and how it is put forward, criticized, and proved or disproved. Mr. Ingemells has submitted for publication and criticism a series of three articles on the "vacuole theory", and seems willing to risk the harsh criticism to which it will be exposed in these pages. The text of Mr. Ingemells' article appears to the left in the following pages, and editorial commentary on it to the right.

Since physicists (with very good reason) are resistant and unreceptive to new physical theories which differ in important respects from existing ones, and since the Vacuole Theory is so described, it will be presented in an unorthodox manner, beginning with the results and working backward through the conclusions to the beginning, which is difficult to accept.

The "unorthodox manner" of which the author speaks, makes it difficult to criticize his theory. Such an approach makes it hard to see just where his theory departs from conventional ones, or whether his invention of new terminology is justified. If his theory can stand of itself, a development from basic principles should be made.

## Part I

The fundamental constants of physics are generally agreed to number about five: viz.,  $c$ , the velocity of light;  $m$ , the rest mass of the electron;  $e$ , the unit electric charge;  $h$ , Planck's constant; and  $M$ , the physical unit of mass. To this list must be added certain others which are not directly determinable from them, such as, for example, the gravitational constant, the masses of the subatomic particles, and other quantities.

These fundamental constants are related in various ways. If the velocity of light is accepted as a determined fixed constant, physical data leave about eleven linear equations in four unknowns, which may be treated by analysis of variance to give the best possible values for the fundamental constants which can be obtained from available data.

The vacuole theory reduces the number of fundamental constants to three, one of which is a new constant, the time-thickness constant  $t$ , which has a value close to 2.424. Which two of the other constants to accept as fundamental is in doubt, but probably  $c$  and  $m$  are the best choice. The new time-thickness constant results in the in-

I am not certain what is meant by " $M$ , the physical unit of mass". If Mr. Ingemells means  $M$  to be the rest mass of the proton - an important physical constant - he should say so.

A necessary, though not sufficient, sign of the crackpot theory is a unique notation not in conformity with established scientific usage. Any new terms introduced should be rigorously defined in terms of existing concepts.

"Eleven linear equations in four unknowns" is mathematical nonsense. Such equations would be very overdetermined.

One wonders in what units this figure "2.424" is measured. The subsequent discussion is unclear.



terrelation of  $c$ ,  $m$ ,  $h$ ,  $e$ ,  $M$ ,  $G$ ,  $L^0$ , and some others which have found no interrelation in previous theory.

A comparison of certain constants and their interactions in the conventional and the vacuolar system follows. It must be mentioned that a dimensional analysis of the expressions given is not meaningful at this stage, for reasons which will become apparent. An analysis of variance, using the new relationships, is needed to establish the probability that the relationships are not purely accidental, and volunteers for this task are requested.

Table I

constant	conventional theory	vacuole theory
$G$	no relationship	$3/M_0 c^3$
$M$	no relationship	$128 t^3 m$
$a$	$2 \pi e^2 / hc$	$1/18 \pi t$
$\lambda_{el}$	$h/mc$	$3t/c$
$R_{inf}$	$2 \pi^2 m e^4 / h^3 c$	$3 \pi c / 2 a^3$
$r_0$	$e^2 / mc^2$	$1/12 \pi^2 c$
$L^0$	no relationship	$f(t, M)$
$\lambda_i$	no relationship	$2 M$
$e$	no relationship	$(mc/12)^{1/2} / \pi$
$h$	$h$	$3tm$

$M_0$  is not exactly the same as  $M$ .

Table I expresses most of the significant relationships obtained through the vacuole theory.

It would be most useful to have the analysis of variance made by a physicist who is aware of the difficulties and problems involved in such an analysis, and who has the necessary data available.

Presumably  $G$  is the gravitational constant.  $L^0$  is at this point a complete mystery, as is the " $a$ " which appears a little later. In the original text, " $a$ " is "alpha", a symbol used to denote the ratio  $2 \pi e^2 / hc$ . This is a dimensionless quantity. Eddington for many years believed it to be exactly 137, but it now appears to be substantially larger - perhaps 137.2. But in Table I, Ingamells makes  $t$  inversely proportional to  $a$ , hence also dimensionless. This conflicts with his statement that  $t$  is a "time-thickness", and also with the 4th entry in Table I, which states that the Compton wavelength of the electron is equal to  $3t/c$ . Since  $c$  is the velocity of light,  $t$  here has dimensions of  $cm^2/sec$ . This ambiguity about dimensions runs through Ingamells' paper.

$M_0$  is another quantity introduced without definition.

$R_{inf}$  is apparently meant to be Rydberg's constant for infinite mass. This has dimensions of inverse length, but Ingamells gives it the dimensions of velocity ( $c$ ).

$L^0$  ("lambda-zero" in the original text) and  $\lambda_i$  are not defined here. They may have something to do with the masses of the lambda and xi particles, excited states of the proton. But  $h$  the masses of these particles would not be particularly "fundamental" as the word is usually used.

$r_0$  is the "classical radius of the electron", and is calculated under the dubious assumption that the electron can be treated as a charged sphere.

Ingamells repeatedly refers to "variance". Presumably this means the deviations of his calculations from the actual values.

## Part II. Dimensions and Units

In vacuolar nomenclature, there is only one fundamental dimensional quantity, viz., length,  $L$ . The dimensions of all other quantities are representable in terms of

This even contradicts Part I of this same article, in which the author claimed that 3 fundamental dimensions exist.



length. Table II gives the dimensions of certain quantities in conventional and vacuolar terms.

To see the significance of the vacuolar system of units, it is necessary to establish an (imaginary) observation point outside the Universe. (capital U.) From this point we see the universe (lower case u) as a region in the Universe contained between two essentially parallel 3-dimensional hyperplanes intersecting the Universe, which is 4-dimensional. Matter, we see to be the result of vacuoles in the substance of the Universe. Those vacuoles which are confined between the two hyperplanes make up the material content of the universe.

The substance of the Universe continually streams through the vacuolar hyperplane at a velocity which may be related to  $c$ , the velocity of light. It is this flow which gives rise to the phenomena of time and gravitation. Fig. 1 illustrates the streaming of the Universal substance through the vacuolar hyperplane, or - to put it another way - the continuous motion of a particle of matter along the time dimension. The velocity of this motion is designated by the symbol  $c'$ . The temporal distance  $2tr$  is the time-thickness of the universe, and is observed by vacuolar beings using a conventional vacuolar system of units as a reciprocal velocity.

We now consider the relative linear motion of two vacuoles, each confined within the vacuolar hyperplane, and each inertially identical. The phenomenon which appears as motion to a vacuolar being is seen from our imaginary observation point outside the Universe to be no more than a difference of direction. Each vacuole moves through the Universal continuum at a constant velocity  $c'$  (Fig. 2) and their relative vacuolar velocity may be represented by the (dimensionless) angle  $\theta$ . The relativistic time-dilation relationship appears very simply from the construction for, by simple geometry,

$$\left(\frac{AB}{AC}\right)^2 = \left(1 - \left(\frac{AD}{AE}\right)^2\right)^{\frac{1}{2}}$$

Note also that a mirror image reverses the roles of the two vacuoles, which is as it should be.

The gravitational force between the vacuoles is a result of the Universal flow: a satisfactory explanation must wait for the definition of some new terms and a re-examination of some basic concepts.

Ingamells uses the word "imaginary" loosely here. In mathematical physics, imaginary numbers are multiples of the square root of  $-1$ . He should also state what he means by "Universe". Numerous model universes exist in cosmological theory.

This mathematical model is incorrect. It would be better to say that, at any given time, the universe is a 3-dimensional hyperplane in what Ingamells calls the "Universe".

Notice how blandly Ingamells assumes the statement he is trying to prove: "Matter (is) the result of vacuoles in the substance of the universe." Nothing of the sort follows from his previous words.

Note also that not one single experimental datum is presented in support of this verbiage.

This apparently says that we believe time to be moving from the past to the future only because a stream of as yet undiscovered particles ("Universal substance") is flowing from the future to the past with a velocity  $c'$ . He says that " $2tr$  is the time-thickness" without defining either  $t$  or  $r$ . Presumably his "vacuolar beings" are hypothetical observers in the capital-U Universe.

The blithe conversion of a "temporal distance" to a reciprocal velocity is characteristic of Ingamells' neglect of dimensional analysis. Nor is it clear what is meant by "inertially identical" vacuoles.

The expressions " $xS$ " and " $yV$ " in Fig. 1 remain unexplained. And

Fig. 2 is nothing more than a Minkowski diagram, which can also be used to illustrate the relativistic time- and distance-dilation if one makes the appropriate modification of the Pythagorean theorem to read: "The square of the hypotenuse of a right triangle is equal to the difference between the squares of the other two sides." Or, if you prefer to retain the original form of the Pythagorean theorem, you may use Amar instead of Minkowski diagrams.