



PURSUIT[®]

"SCIENCE IS THE PURSUIT OF THE UNEXPLAINED"

VOL. 6, NO. 3

JULY, 1973

SOCIETY FOR THE INVESTIGATION OF THE UNEXPLAINED

Columbia, New Jersey 07832

Telephone: Area Code 201 496-4366

ORGANIZATION

The legal and financial affairs of the Society are managed by a Board of Trustees, in accordance with the laws of the State of New Jersey. These Officers are five in number: a President, elected for five years; two Vice-Presidents; a Treasurer; and a Secretary. General policy is supervised by a Governing Board, consisting of the five Trustees, and four other members elected for one year terms. General administration and management is handled by an Executive Board, listed on the inside back cover of this publication. The Editorial Board is listed on the masthead of this journal. Finally, our Society is counselled by a number of prominent scientists, as also listed on the inside back cover of this journal. These are designated as our Scientific Advisory Board.

PARTICIPATION

Participation in the activities of the Society is solicited. Memberships run from the 1st of January to the 31st of December; but those joining after the 1st of October are granted the final quarter of that year gratis. The annual subscription is U.S. \$10, which includes four issues of the Journal PURSUIT for the year, as well as access to the Society's library and files, through correspondence or on visitation. The annual subscription rate for the journal PURSUIT (alone, and without membership benefits) is \$5, including postage. (PURSUIT is also distributed, on a reciprocal basis, to other societies and institutions.) The Society contracts -- with individuals, and institutional and official organizations for specific projects -- as a consultative body. Terms are negotiated in each case in advance. Fellowship in the Society is bestowed (only by unanimous vote of the Trustees) on those who are adjudged to have made an outstanding contribution to the aims of the Society.

NOTICES

In view of the increase in resident staff and the non-completion, as yet, of additional living quarters, there is no longer over-night accommodation for visitors. Members are welcome to visit to consult our files, but we ask that they make application at least a week in advance to prevent 'pile-ups' of members who, as a result of the simple lack of facilities, as of now, cannot be properly accommodated.

The Society is unable to offer or render any services whatsoever to non-members. Further, the Society does not hold or express any corporate views, and any opinions expressed by any members in its publications are those of the authors alone. No opinions expressed or statements made by any members by word of mouth or in print may be construed as those of the Society.

There have been a number of articles recently on the problem of junk mail and the way in which one's name gets on such a mailing list. We should like to assure our members and subscribers that our mailing list is available only to resident staff at our headquarters.

PUBLICATIONS

The Society publishes a quarterly journal entitled PURSUIT. This is both a diary of current events and a commentary and critique of reports on these. It also distributes an annual report on Society affairs to members. The Society further issues Occasional Papers on certain projects, and Special Reports on the request of Fellows only.

RECORD: From its establishment in July, 1965, until the end of March 1968, the Society issued only a newsletter, on an irregular basis. The last two publications of that were, however, entitled PURSUIT--Vol. 1, No. 3 and No. 4, dated June and September, 1968. Beginning with Vol. 2, No. 1, PURSUIT has been issued on a regular quarterly basis: dated January, April, July, and October. Back issues, some available only as Xerox copies, are available; those wishing to acquire any or all of these should request an order form.

Vol. 6, No. 3
July, 1973

PURSUIT®

THE JOURNAL OF THE SOCIETY FOR THE
INVESTIGATION OF THE UNEXPLAINED

DEVOTED TO THE INVESTIGATION OF "THINGS"
THAT ARE CUSTOMARILY DISCOUNTED

Editor & Publisher: Hans Stefan Santesson
Managing Editor: Mark A. Hall
Executive Editor: Marion L. Fawcett
Consulting Editor: Walter J. McGraw
Assistant Editor: Robert J. Durant

CONTENTS

Editorial: Our Greatest Crisis?, by Sabina W. Sanderson	54
Ufology	
The Mystery Airship	55
Chaos & Confusion	
The Bermuda Triangle, Again, by Robert J. Durant	55
Why Did the Foxes Sing?, by John Stuart Martin	57
That Disappearing Eskimo 'Village'	58
Chipmunks and 'ITF', by Sabina W. Sanderson	59
"Chopped Off" Corn	59
Entombed Toads, by Sabina W. Sanderson	60
Ontology	
'Worm-Holes' in Space	64
Astronomy	
Planet X	66
Biology	
Luminous People and Others, by Ivan T. Sanderson	66
"The Blob"	67
A Botanical Puzzle	68
Giant Skeletons	69
Anthropology	
Leys - Ancient British Power Network?, by Janet Bord	70
Pharaoh's Pump, by Adolph L. Heuer, Jr.	71
Members' Forum	73
Book Reviews	73

EDITORIAL

OUR GREATEST CRISIS?

In 1952 Robert A. Heinlein, the “dean” of science fiction writers —and one of the very few sci-fi writers who is not either afraid of or simply anti forteana— wrote an article entitled “Where To?”* The pertinent paragraphs read as follows:

“The greatest crisis facing us is not Russia, not the Atom bomb, not corruption in government, not encroaching hunger, nor the morals of the young. It is a crisis in the organization and accessibility of human knowledge. We own an enormous ‘encyclopedia’ —which isn’t even arranged alphabetically. Our ‘file cards’ are spilled on the floor, nor were they ever in order. The answers we want may be buried somewhere in the heap, but it might take a lifetime to locate two already known facts, place them side by side and derive a third fact, the one we urgently need....

“We need a new ‘specialist’ who is not a specialist, but a synthesist. We need a new science to be the perfect secretary to all other sciences.”

In 1966 the article was up-dated and published in The Worlds of Robert A. Heinlein under the title “Pandora’s Box”, and again we quote:

“Today the forerunners of these synthesists are already at work in many places. Their titles may be anything; their degrees may be in anything—or they may have no degrees.... they are all interdisciplinary people, generalists, not specialists —the new Renaissance Man. The very explosion of data which forced most scholars to specialize very narrowly created the necessity which evoked this new non-specialist. So far, this ‘unspecialty’ is in its infancy; its methodology is inchoate, the results are sometimes trivial, and no one knows how to train to become such a man. But the results are often spectacularly brilliant, too—this new man may yet save all of us.”

Though Robert Heinlein was not speaking specifically (or at least openly) of forteana, I believe we may be sure that he had it in the back of his mind. I have always looked on our operations as a synthesizing of knowledge, and particularly in the case of items filed under “Chaos & Confusion”. There are a number of organizations which specialize in one aspect of the Unexplained, e.g. APRO for UFOs, the A.S.P.R. for such intangibles as ‘ghosts’. SITU does not specialize and is therefore in probably a much better position to find two (or more) seemingly unrelated ‘things’ which together provide a possible answer to an old problem. Our results thus far may indeed be trivial, but we are still a very young organization and are hampered by lack of proper funding and adequate staff. Nevertheless, we feel an obligation to continue our work, ineffective though it may seem. Back in late 1969 we received a letter from a member who stated that he would not renew his membership: we had been in business for two years and had not yet solved any Great Mysteries. No, we had not. And we may not for another twenty. But this is no reason to quit now. Most “overnight sensations” have struggled for many years to reach that enviable position.

It is not possible at this point to do more than guess at the results we might achieve. To give just one example: in the article on page 59 a case of apparent ITF¹ or instant-transference (or teleportation, if you wish) is presented. As I write we face a definite shortage of gasoline and the prospect of rationing; if we could find out how to ‘teleport’ at will, such a shortage would affect only those who drive tractors to till their fields and those who are not really travelling —i.e. fishermen and such. This is undoubtedly too grandiose an idea at the moment but it is not impossible.

☺ All this is basically an appeal for both patience and support on your part. We realize fully that many of you have little spare time —or money— or perhaps lack the training to do active search or research, but would point out once again that even shut-ins can assist us by watching their local papers, trade journals, and the like, for any items that might be of value or interest to us. And once again also, please do not ever assume that we have clippings on a particular story; we would far rather have ten copies than none at all. One can never tell when one little tidbit may prove to be a vital key to an Unexplained.

Sabina W. Sanderson

*“Where To?” copyright 1952 by Galaxy Publishing Corp.; updated and published in The Worlds of Robert A. Heinlein, copyright 1966 by Robert A. Heinlein; the latter published by Ace Books, Inc., #F-375.

UFOLOGY

THE MYSTERY AIRSHIP

Presumably everyone interested in ufology has at one time or another read of the alleged crash of a 'spaceship' at Aurora, Texas, in 1897, and the subsequent burial of the much mangled 'pilot' in a local cemetery. Interest in this incident burgeoned suddenly this year and a number of UFO investigators descended on Aurora, now reported to be a ghost town, to comb the area for traces of the spaceship and to attempt to get permission to disinter the 'body'.

The oldest residents of nearby towns are divided on whether any such thing ever happened, some contending that the story is completely factual and others stating, just as emphatically, that it was a hoax originally. From the accounts available to us it is impossible to determine which group is right. However, the visiting ufologists have gone over the area with metal detectors and those pieces that have been dug up have been sent to various laboratories for analysis.

Dr. Tom Gray of North Texas State University has four pieces of metal. Three are in no way unusual, but the fourth is a puzzle:

"It's mostly iron with about 25 per cent of it zinc. But it's not magnetic. Now that wouldn't be unusual if it were stainless steel. But it's not stainless steel. I don't know what it is."

This piece is further described (in the Herald-News, Joliet, Illinois, 31 May 1973) as being shiny and soft instead of dull and brittle.

Another piece studied by unidentified scientists is said to be "an aluminum alloy of a type which could not possibly have been made here on earth prior to 1908, 1910 or even as late as 1920". It is also stated that the scientists said the 'nugget' had the appearance of having been buried for a long period of time. This piece was apparently dug up by newsmen.

All the scientists have emphasized the fact that there is no evidence that the metals are extraterrestrial in origin, simply that at the moment they appear to be unusual. Furthermore, Dr. Gray found a zinc casting at the site. This has American threads machined in it. As Dr. Gray says, "I don't think a spaceship would land here carrying American-threaded zinc."

Finally, and most important, Jim Lorenzen of APRO states categorically that "in 1967, Mr. Alfred E. Kraus, director of the Kilgore Research Institute at West Texas State University, undertook an exhaustive investigation of the Judge Proctor farm where the spaceship was supposed to have crashed and using a metal detector found nothing but very ordinary bits of colored metal objects such as rings from horses' bridles, stove lids and 1932 license plates." It is their opinion that "publicity-oriented individuals have used the story to promote their own interests. There's every indication that the bits of aluminum alloy arrived on the Proctor property since 1967 and probably within the last 60 days."

This appears still to leave the bit of odd iron to be explained, and we keep an open mind on this though we tend to agree that some of the investigators who rushed to Aurora do not enjoy our confidence.

CHAOS & CONFUSION

THE BERMUDA TRIANGLE, AGAIN

by Robert J. Durant

The literature on the "Bermuda Triangle" mystery consists almost entirely of a lengthy recitation of instances of the unexplained disappearance of ships and aircraft in that rather vaguely defined geographical area. Certain other facts have been discovered, notably the apparent existence of twelve areas of high incidence of disappearance and other oddities located symmetrically about the planet. Beyond that, there is little even in the way of speculation concerning the cause of the Triangle or any of the other hypothesized "Vile Vortices".

It is known that a large number of disappearances have occurred in the Triangle, but there is also a great deal of air and sea traffic in the area. The number of disappearances is well documented, but the rate of disappearance has never been rigorously

established. In other words, do more ships disappear in the Triangle per thousand transits than in any other given sea lane? Unfortunately, the statistical data on marine disasters is not collated in a format that supplies a ready answer. The same can be said for air traffic. An examination of the data that is available (mainly the Lloyds of London records) does yield the subjective impression that the Triangle gets more than its share of disappearances. However, one fact does stand out: a great many of the Triangle disappearances have occurred in relatively good sailing and flying conditions, but disappearances in other shipping lanes, such as the North Atlantic lanes, have almost always been directly connected with severe weather.

"Dead men tell no tales" is an old saw that applies well here. One might add that "disappeared" men tell no tales either. A list of missing ships, utterly lost, with neither bodies nor wreckage found, is of little use of and by itself. Ships sink in storms,

and ships explode at sea. Often there are survivors or burnt wreckage to explain the disaster. But what does one do to get clues to the cause of the complete disappearance of a series of ships and aircraft?

One possibility is that intermediate cases exist. That is, ships have burned, but not completely. Their crews have nursed the stricken vessel back to port where the details of the experience have been recorded for posterity by boards of inquiry. By analogy, there ought to be instances of ships and aircraft which have become enmeshed in the forces of the Triangle, but only fleetingly.

The absence of such cases would be strong evidence against any paranormal causative factor for the disappearances. If the only intermediate cases available are those in which a perfectly well known and logical cause such as storm and fire caused the difficulty, it becomes an act of faith to continue to believe in an extraordinary causation for the Triangle disappearances.

On the other hand, a body of case histories of near misses or brushes with —?— would not only be strong evidence in favor of the paranormal nature of the Triangle phenomenon, but it would also furnish a fertile source of data for intelligent speculation into the causes of the phenomena. "A funny thing happened to me on the way to Bermuda..." That, unfortunately, does not make the papers. And if it doesn't make the papers, chances are that it will never come to the attention of the handful of individuals who take the Triangle business seriously. Hopefully, there are enough readers of this publication who are involved in some manner with flying or boating to search for such material. At the moment, it would seem that these "intermediate" cases are vital.

Specifically, we need to collect the tales told by the survivors. What follows is an account given to me by a fellow pilot. Were it not for a bit of luck — and fine flying— the details of his experience would be unknown. The flight would probably be just one more in the Bermuda Triangle "seed catalogs".

The flight was en route from San Juan to New York, at an altitude of 35,000 feet, all systems operating normally. There was no turbulence. In fact, the air was so smooth that the three crew members had a chat about how unusually smooth and absolutely clear the air was of even the occasional little bumps that one encounters in the best circumstances. In recounting his experience, the pilot said that in retrospect this was the first sign of something out of the ordinary.

After flying in the unnaturally smooth air for some time, the windshield began to show streaks of static electricity. This phenomenon is not at all unusual, but it is almost always encountered while flying through heavy clouds, and most especially through the tops of thunderstorm clouds. In a severe instance, the windshield will be criss-crossed by tiny streamers of purplish electrical discharges that have the appearance of miniature lightning bolts. This sight is unnerving to the neophyte, but quite harmless.

In a short while the static discharges became so strong that they covered the entire windshield in a bright white glow. This is something that the writer has never seen or heard of before. Apparently the crew members of the jet had never seen anything like it before either, for it was at this moment that they began to sense that something most unusual was occurring. The aircraft still remained unnaturally free of turbulence.

The jet was being "flown" by the autopilot, with the crew monitoring its performance and keeping track of the navigation. At this point the copilot remarked that the autopilot, which was programmed to fly the craft straight and level, was making the aircraft turn. The captain glanced at his gyro horizon to confirm the turn, but noted no bank angle indication. A quick check confirmed a discrepancy between the captain's and the copilot's instruments. Both the gyros and the compasses were giving conflicting readouts.

(Ed. Note: Mr. Durant has considerable additional technical information on this but has not included it here since it would be unintelligible to most of our readers.)

This is a very serious situation indeed in a big jet. They are flown almost entirely by reference to the instruments. Instrument failures occur and there are standard procedures for remedying such failures. In any event, there are two complete sets, one for the captain and one for the copilot. But this instrument failure was definitely "not in the books". There was no means of determining which instrument —if any— was functioning properly. The crew was now in an emergency situation.

This aircraft was equipped with a small, battery-operated gyro horizon installed as insurance against the possibility of a complete loss of electrical power. It is also useful as a reference to test which of the other two gyros is indicating correctly. Unfortunately all three were giving different indications by this time, but the captain elected to ignore the two main gyros and fly entirely on the battery-operated gyro.

By now they were about 100 miles south of Bermuda. Luckily, Bermuda has an excellent long range radar system. The jet asked for emergency landing clearance and radar assistance with the navigation and let-down to the airport.

They arrived safely but with nerves shattered. On the ground, mechanics hunted in vain for the cause of the malfunctioning instruments. A telephone call to the airline's technical center in New York elicited the reply that the reported troubles were simply impossible. The pilots must have been imagining it all. After several days of fruitless trouble-shooting in Bermuda, the plane was flown back to New York —in daylight— without incident. After further testing by the "experts" it was decided that the electrical system and all of the instruments showed signs of having been subjected to an extremely strong electrical shock, probably the result of being struck by a lightning bolt. Both the instruments and the wiring

were completely replaced. The pilots, of course, don't buy the lightning bolt theory at all. When a bolt strikes an aircraft there is little doubt about what happened. There is a very bright flash and a sharp report. But as to what did happen, they are equally certain that they do not know.

The plane landed at Bermuda around midnight. The next morning, the captain was told that about an hour after his jet had landed, another aircraft arrived at Bermuda in almost exactly the same circumstances. The second craft was a four-engine turbo prop of British registry, and it had also reported trouble with all instruments. My informant did not pursue the matter, though now he is very sorry that he did not do so. At the time he was more worried about the fact that the "experts" were calling him crazy.

I asked the captain if he had ever heard of the Bermuda Triangle. He replied that the first time he heard the term was minutes after he landed at Bermuda on that fateful night. A mechanic poked his head into the cockpit and said "You've just flown through the Bermuda Triangle".

[Ed. Note: A Bermuda Triangle Bibliography, listing about 240 books, newspaper articles, miscellaneous papers and reports, is now available from either Larry Kusche or Deborah Blouin, University Library, Arizona State University, Tempe, Arizona 85281. The price is \$2.00 plus a stamped, self-addressed envelope.

We have not yet seen this but the compilers note that "Most of the items have been annotated, and comments have been made indicating those that are outstandingly superior or inferior", i.e. in the latter case "trivial and error-filled".]

WHY DID THE FOXES SING?

by John Stuart Martin

When I lived up in Schoharie County, New York, I used to hunt and fish with a rosy-cheeked oldtimer named Charley Shelmandine, who still farmed in the rough hills around West Fulton. He used to tell me tales, most of which I believed (and still do), about his boyhood, including this one, which is my favorite:

I used to walk five miles to school and five back every day (said Charley), and in fur season of course

I tended my traps coming and going. You could get three dollars for a grey fox in those days, and as high as ten for a prime red. It was just about the only way a boy like me could ever get any money, so I really worked at it. But my dad told me one thing.

He told me not ever to set [a trap] for Old Joe, which was a big dog red fox that had chewed off one of his front feet to get out of a trap Dad had set. Dad figured that after that Old Joe had earned his life and liberty, and he told me: "Just you foller that old cus, Charley. Foller his track wherever he goes, summer and winter, and he'll teach you more about foxes than you ever could learn otherwise."

So I did that, and I did learn all about foxes — almost— and I sure caught a lot of 'em after I got wise to Joe's habits and tricks. And because I got to admire him, I got real fond of him, like a boy would, and it got so that Joe knew me, too. We'd see each other passing on the road every so often, early in the morning or towards dark.

Well, Joe's den was way up on the ridge right back of our place and I seldom went up there, let alone ever to set for Joe. But one winter I was about thirteen and had been studying Joe for half that time, there came a night of blizzard and high wind and then the thermometer dropped out the bottom. It calmed down long before daybreak, though —I knew, cause the quiet woke me up. And after a long spell of silence, as I lay looking out my window at the stars, I heard this sound, these singing sounds, like nothing I'd ever heard before. They came from up on the ridge right in the direction of Old Joe's den, and they sounded like what you read about coyotes baying the moon out west, or just yodeling and yelping to each other.

It was more than I could stand, so I got up and dressed and sneaked out and got my axe from the shed and started up there through the timber. After I crossed our spring-run, where my snowshoes made a clattering I guess, that fox music up above me began to die out, and long before I got up to the top to Old Joe's den, it had stopped altogether.

The stars were still out, but day was coming, and it was light enough for me to see the dark opening of Joe's den. Also, I could read all the fresh fox signs there were around there.

A solitary track led through the powder snow and into the hole. This was a three-footed track —Old Joe's— and it didn't come out again. All around in front was a confusion of many tracks, and a lot of fresh sitting places, where different foxes had been

THE IVAN T. SANDERSON MEMORIAL FUND

For those who wish to make some tangible expression of their support for the work begun by Ivan T. Sanderson, we have set up a Memorial Fund in his honor. All checks should be made payable to SITU but should bear a note stating that they are intended for this Fund. Specifically we hope to buy a 'proper' copying machine, expand Pursuit — and our staff, and increase our field operations. Bear in mind that all contributions to SITU are tax deductible.

circling around and then squatting, probably to do that singing I'd heard. It was hard to tell exactly how many, but there must have been at least a dozen foxes besides Joe up there. I found that many different tracks leading away from the ridge where they all had finally left it, and not a one of these tracks was three-footed.

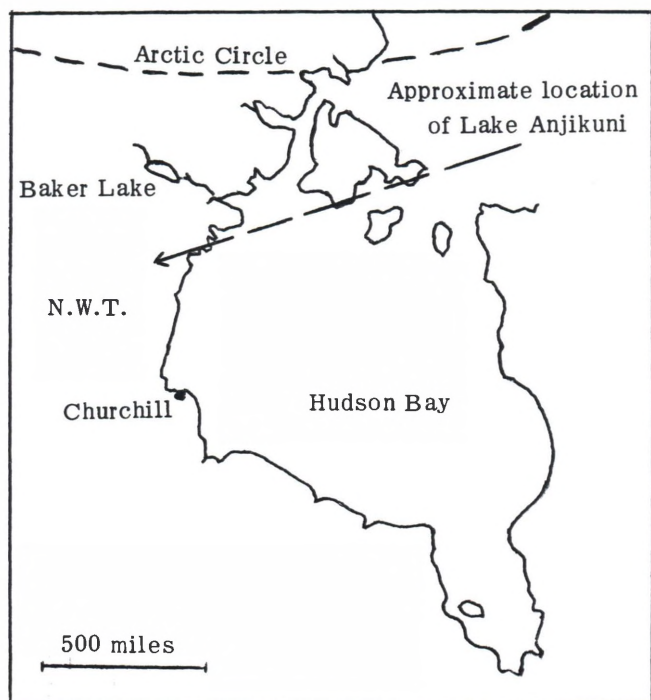
Well, I just had to know the truth, so I took off my mackinaw and went to work with my axe on the mouth of Joe's burrow. About a half hour after the sun came up I finally got inside right to him, up a gentle sandy slope at the end, about twelve feet into the hillside.

He lay curled up in a ball with his big, white-tipped black brush folded over his face. His lips were drawn back in a foxy kind of smile, but it was the grin of death, 'cause his eyes were open and glazed, and through his worn-down old teeth his tongue stuck out a little, stiff and greyish. Old Joe was dead all right, but after I shut his eyes and lips he looked only asleep. After that I covered him up and refilled his burrow, putting stones into it so mice and other creatures wouldn't bother Joe's carcass come springtime.

No other foxes would bother him —of that I was pretty sure. But what I kept wondering, after my tears stopped and I went on down the hill for breakfast and school, was: why did all those other foxes go up there last night? Did Joe call them, or how did they know? And who did all those foxes sing to?

THAT DISAPPEARING ESKIMO 'VILLAGE'

One of the 'standard' stories to be found in many collections of fortaean tales is that of an Eskimo



'village' on Lake Anjikuni in Canada's Northwest Territories that was found deserted by a trapper named Joe Labelle. According to the published account, only the people were missing; untouched pots of food, kayaks, rifles, tents, etc. were said to be untouched, and seven dogs were found, starved to death, about one hundred yards from the camp. A cairn grave had been opened, the corpse removed, and the stones neatly piled up. The number of persons missing varies in different accounts but ranges between 25 and 30.

It is a good story, but it seems to be only that. One of our members, Ronald G. Dobbins, has been carefully tracking down many of these oft-repeated tales to determine whether they are truly factual or not. The original report, supplied by Vincent Gaddis, came from NEA Service and was dated the 28th November 1930. It includes a photograph of Joe Labelle and is datelined The Pas, Manitoba. It states that "The Royal Northwest Mounted Police have taken up the hunt, and white trappers have been asked to be on the lookout. But nothing so far has been learned."

Mr. Dobbins is working on a book, and we do not wish to steal his thunder. However, he wrote several times to the RCMP and they were kind enough to check their records and to write to ex-members of the RCMP who were stationed at Baker Lake (the Detachment which would have been in charge of any investigations in the Anjikuni area) at the time of the alleged disappearance. The RCMP Historian notes also that even if Labelle "had reported it earlier at Churchill the same sequence of events would have occurred as Baker Lake was responsible for any investigations in that area." He concludes that they are "unable to provide any tangible evidence to support the story".

In addition, the Historian for the R.C.M.P. points out two serious discrepancies in a more recent claim by one Bernie Julkowski to have found two rifles at Repulse Bay in the summer of 1969. Julkowski said they were lying on a rock shelf 400 miles above the Arctic Circle. Repulse Bay is between 500 and 600 miles northeast of Lake Anjikuni where the Eskimo 'village' is said to have 'disappeared' but it is just on or a bit south of the Arctic Circle. It therefore seems unlikely that his story is valid, and it is certainly most improbable that they have, if they do exist, anything to do with the "vanished Eskimos".

We are fully aware of the fact that many persons do not want their mysteries solved, let alone simply done away with, but our first obligation is to Truth. In this Mr. Dobbins is doing a very great service, however disappointing his findings may be to the general public which is interested only in "light reading" and a few "chills".

CHIPMUNKS AND 'ITF'

by Sabina W. Sanderson

On the 15th of June of this year Marty (R. Martin) Wolf and I were sitting at the garden table back of the Old House at SITU's headquarters enjoying a brief rest from our respective labors. My two dogs, Marzi (a Golden Retriever), and Bruno (a Black Retriever with some Collie blood), were lying in the grass nearby. Both dogs have had a running 'battle' with the numerous chipmunks that come to the bird feeder but, so far as I know, had never succeeded in catching one. The chipmunks' burrows are scattered around the Old House, within fairly easy reach of the feeder. One burrow, marked on the diagram shown here, was being carefully watched by Marzi, a very competent hunter but with an exceptionally gentle mouth. She suddenly made a dash for the burrow, the chipmunk having appeared briefly at its entrance. Both Marty and I were somewhat startled when, on the second grab, Marzi came up with a mouthful of chipmunk and grass. Having previously rescued such fragile victims as baby birds—damp but unhurt—I grabbed Marzi and, with Marty's help in holding her, prized her jaws open. The chipmunk promptly leaped to the ground, made one additional bound toward freedom, started to make a second leap—and then just wasn't there.

Marzi was still being held by her collar but did not pull against it and made no attempt to locate her prize; and Bruno, who had been following the proceedings closely, also immediately lost interest. Marty and I, loth to believe our eyes, made careful search of the area, including the mulberry trees, despite the fact that both of us were certain that the chipmunk had not and in fact could not have gone up the tree without our seeing it. (A later survey by Marty proved that even had it gone up the tree it could not have escaped detection.) We then inspected the entrance to the burrow, primarily to determine how the chipmunk could have been caught so close to home, and found there confirmation of my fleeting thought during the rescue operation that the chip-

munk's tail was shorter than is normal. Marzi had, with her first grab at it, neatly amputated about 1½ inches of its tail. This was lucky for us because our next question was, of course, "Where did it go? Into another universe, or will it come back?" We cannot say where it went, but it was seen on the bird-feeder the next day, and on subsequent days. We 'should' have dug up the burrow, I suppose, but this would have been a truly major effort, since there are tree roots throughout that area; and no guarantee that the chipmunk had no other exit (if he did in fact teleport back to his burrow).

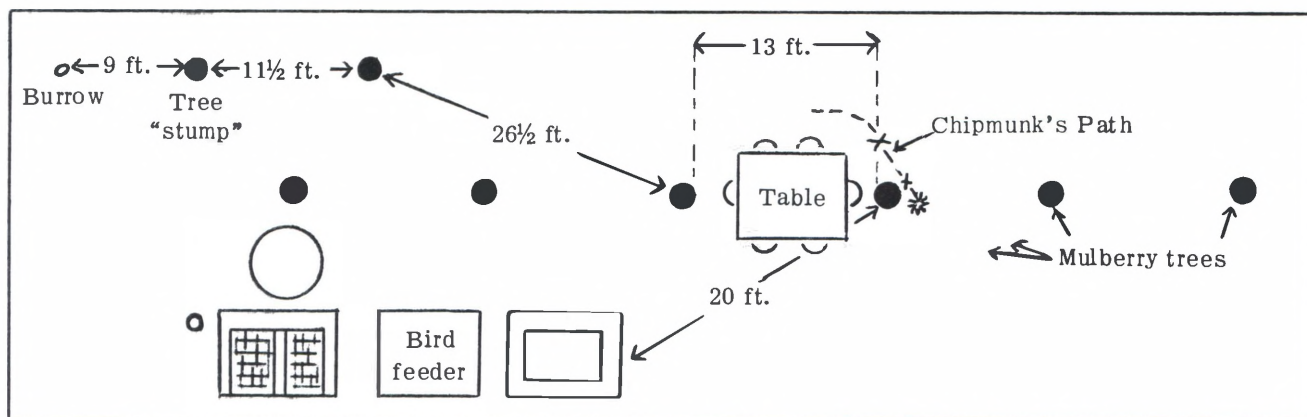
There is little else to report on this. I should not care to take an oath on it but my impression is that the chipmunk appeared 'hazy' or blurred just before vanishing and that it seemed to twist in the air as it started its leap. Marty Wolf was unable to confirm this but was not in as good a position to see in any case. However, the fact that it vanished before our eyes is not in question.

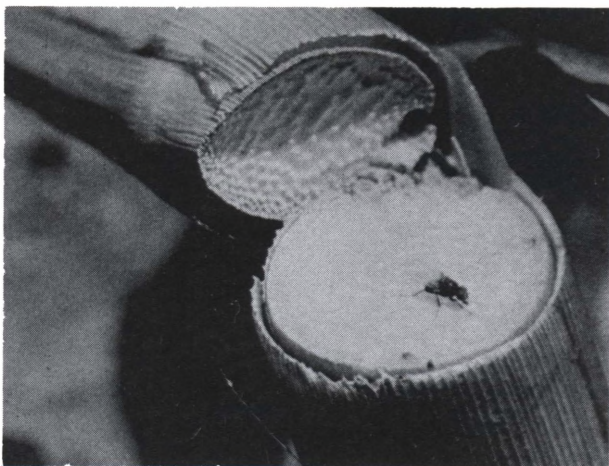
We have had previous reports of rats, mice, hamsters, and lemmings that evidently indulged in ITF' or "instant-transference" —Charles Fort's teleportation— and now must, I think, add chipmunks to the list.

"CHOPPED OFF" CORN

Member #1383 sent us a brief item from the Des Moines Register of the 28th June 1973, with the photographs reproduced here by permission of that newspaper. Their account went as follows:

"Duane Woodruff, who farms in Warren County east of Ackworth (Iowa), Wednesday examines two rows of corn that were mysteriously cut down. Woodruff said he discovered the damaged corn about 9 a.m. Wednesday when he went to cultivate the field. He said the corn appeared to be 'chopped off.' "I thought at first someone had been in the field with a corn knife," he said. 'But the ground was soft and if someone had been walking they would have left tracks. There were no tracks of any kind. The chopped-off rows continued





Register photos by Charles Anderson. Our arrows point to stubble stalks in each row.

down into a waterway, turned left and disappeared.' One of the cut-off stalks is shown in the close-up."

We called the Des Moines Register and spoke with Veryl Sanderson of their Farm Department. He told us that several agronomists at a local event that day said they had never heard of anything just like it. Suggestions put forth were rabbits or other animals, but Mr. Sanderson said that he knows Duane Woodruff

—a "steady fellow and respected farmer"— and that he believes him when he says that "there were no tracks". Even so light an animal as a rabbit leaves tracks in soft earth; and the fact that the stalks were all cut cleanly through virtually eliminates 'animals' as the cause. Furthermore, all the stalks have fallen toward each other, thus leaving the two 'paths' between the damaged rows and the uncut ones on either side.

We asked about the somewhat puzzling statement that "The chopped-off rows continued down...and disappeared", and Veryl Sanderson replied that he had not been there but understood that a "grass waterway" was meant and that some grass had also been cut. (This would certainly rule out a suggestion from left field that a helicopter might have been involved; the prop wash would have left evidence of its passing.)

It is of interest that about a year ago "burn circles" were found in a soybean field. These have often been correlated with UFO activity in an area and we therefore asked whether there had been any reports of "funny lights in the sky" or other ufological phenomena. The answer was no. Of course, this may mean simply that no one was looking, but it would be most imprudent to assume this. For the moment therefore, the incident remains totally unexplained.

ENTOMBED TOADS

by Sabina W. Sanderson

For at least a couple of centuries there have been reports of what are facetiously called "Toad(s) in the Hole", i.e. toads or other small animals, almost exclusively amphibians, found incarcerated in solid rock or inside tree trunks —and found alive. The usual reaction from 'orthodox science' is that this is impossible. I cannot refrain from quoting Professor Richet who said, "I never said it was possible; I merely said it was a fact."

There would seem to be at least six 'types':

- 1) Animals hibernating or estivating in dried-out mud
- 2) Animals frozen in ice for long periods of time
- 3) Animals deliberately or inadvertently "entombed" in cornerstones, concrete floors, etc.
- 4) Animals found in incompletely enclosed spaces with possible access to air, food, etc.
- 5) Animals found in totally enclosed spaces, i.e. in coal seams, boulders, etc., with (presumably) no access to air, food, etc.
- 6) Animals "entombed" under experimental conditions in an attempt to study this phenomenon.

The first is well known and is mentioned here only because laymen have occasionally been 'carried away' by other reports and have sent accounts of

frogs or toads 'buried' in mud to local newspapers or even to scientific journals.

The second is questionable. A 1963 story from Russia claiming the 'resurrection' of a 5000-year-old lizard-like triton was later admitted to be "pure fantasy", though a very similar story was printed by Izvestia in 1973. In this, geologists searching for gold deposits in the Siberian district of Kolymaskaya allegedly found a lizard in a piece of ice extracted from a depth of 33 feet. They later thawed it out and took it to a Kiev scientist who identified it as a Siberian uglozub which ordinarily has a lifespan of about 15 years and is known to spend winters in hibernation. Izvestia announced that radiocarbon tests proved it to be 100 years old. At the moment this case can only be labelled 'unconfirmed'. The only other record of this type of incarceration is an undated, unidentified wire service report which states that a Dr. D. L. Albasio found a frog frozen deep in the ice of a glacier in Yosemite National Park. Dr. Albasio said that the glacier is no less than 12 centuries old and that "Lazarus", as he named the frog, must have been frozen in when the glacier formed. There is no further information on this, and attempts to find a Dr. D. L. Albasio have been unsuccessful.

One of the best cases I have belongs to the third category, that of animals inadvertently entombed and later found alive. I am here indebted to Mr. James B. Steele, who is fluent in Afrikaans, for a letter from the Director of the College of Agriculture and Research Institute at Potchefstroom, South Africa, concerning this case. This letter, translated by Mr. Steele, is here quoted in full.

"I thank you for your letter of the 19th October [1970] and was surprised to hear of your interest in the frog which had been found, still alive, in a cavity in a cement floor some years ago.

"At the end of 1945 a cement floor was laid for a small potato storeroom. The first half of the floor was laid during the afternoon and the job was finished the following morning. Apparently the frog was attracted to the unfinished floor by the dampness and was caught [imprisoned] inside when the floor was finished the following morning.

"When the store room was demolished at the end of 1949 or beginning of 1950, the cement floor was broken up. The frog, which was plus-minus 1¼" long, was found in a cavity in the cement floor. The cavity was about 2½" in diameter and completely sealed on both sides, according to the marks when the floor was broken up.

"The people who were present at that time, as well as myself, were convinced that the frog could not get into the cavity after the floor had been laid and could not have come out of there either. It was a complete cavity without any cracks or openings. The cavity could have resulted from the movements of the frog when the cement was still wet.

"When the frog was found it was practically snow-

white. The frog was placed in a container and handed to the man who at that time was the chief of the Department of Zoology of the Potchefstroom University, viz. Prof. G. T. Eiselen. (Prof. Eiselen died a few years ago.)

"The late Prof. Eiselen told me that the frog refused to eat anything and died the following day. A post mortem did not really reveal anything, except that the stomach sections were much smaller than those of a normal frog of the same size. The frog was without food, light and air for approximately five years.

Yours faithfully,

(Signed)

I. Hattingh.

DIRECTOR.

A more 'spectacular' report was printed in the April 1972 issue of Animals. This was a letter from Eric G. Mackley of Barnstaple, Devon, England, a journeyman gas-fitter, who once had to dig up some 'meter-houses' which were brick-walled and "rather massively concrete-floored". His story continues:

"My mate [who] was at work with a sledge hammer, dropped it suddenly, and said, 'That looks like a frog's leg'. We both bent down and there was the frog. Being fond of animals the sledge was laid aside and I cut the rest of the block carefully. We released 23 perfectly formed but minute frogs which all hopped away to the flower garden,... The only explanation I can give is that whoever originally mixed the concrete took up frog spawn with the water from a stagnant stream opposite; the frog spawn found its way into the middle of the concrete base; and when the tadpoles hatched they cannibalised until the hole in the concrete was completely filled with small but perfectly formed frogs. Not the least interesting point to me was that after (I assume) lying in a state of torpor, the frogs were immediately fully active after over a quarter of a century."

The suggestion that the frogs had squeezed in through minute cracks was rejected by Mr. Mackley who stated that the concrete was "firmly compacted". This is the only case in which there was more than one animal.

The fourth category is perhaps best illustrated by a letter from the archives of the American Philo-sophical Society. It was sent to Samuel Harrison of New York by Samuel Peters and was dated the 10th of January 1806.

"My dear Sir,

"Agreeable to your Request I have Stated A Phenominon which was manifested to me at Hebron in the Colony of Connecticut A.D. 1770—

"The Case was as here follows—

"A Rock nearly 20 feet Square on its Superficies & about 10 feet thick lay in the high Road opposite to my House, and as Report Said had been growing

higher for 150 years whereby it had become a Nuisance to Carriages & Travellers

"To remove the Inconvenience I ordered my Negroes to dig a ditch around the Rock three feet wide, & to go down with the Ditch to its Bottom.— this being done I engaged a Miner to perforate the Rock with an Auger near the middle of the Surface—the Auger was two Inches wide & with it he made an Hole five feet deep — He then charged the Rock with half a Pound of Gun Powder & fired it off with a Match, while the Spectators stood at a proper Distance to shun danger & to See the Effect—

"The Explosion was very great:

"The Rock was rent into Eight or Ten large Pieces, besides many fractional ones— We soon hoisted up the Fragments; at last we came to the two Center and largest Pieces between which the Auger had passed

"Having taken up the Smallest, the largest Piece stood up edgeways— I then went down & viewed the Path of the Auger, which had passed by a Cavity as large as a Goose Egg, in which lay a Frog who compleatly filled the Cavity . . His Thigh was bleeding by Reason of a wound . . The Orifice was too small to pull him out. . The Miner soon enlarged the Orifice and I took out the Frog, bound up the wound and placed him on some Mud near a puddle of Water, which I inclosed with a Board Fence— The Frog was alive and struggling for delivrance when I first discovered him in his Bed; which was as smooth as the inside of a Glass Tumbler—

"He appeared in perfect & high Spirits, though he had no visible means of living in his Hole four feet & an half down from the Top of the Rock to his bed, (all around him was firm & hard as a flint Stone) excepting by what Water, Air & heat that reached him through a Small crivice not so large as a Knitting Needle & that Crivice was filled with fine dust from the Top of the Rock down to his Bed in which he lay, in so close a manner, that with difficulty I dug it out with a Steel Pointer—. I kept the Frog imprisoned many weeks for the Inspection of the Curious...."

Do not let the odd spellings and capitalizations mislead you into thinking this gentleman uneducated; there were no "standards" in those days.

Animals found in totally enclosed spaces constitute category number five. Herewith two illustrative cases:

From Tilloch's Philosophical Magazine, vol. LVII (1821), p. 462: "A short time since, as David Virtue, mason, at Auchtertool, a village four miles from Kirkaldy, in Scotland, was dressing a barley mill-stone from a large block, after cutting away a part, he found a lizard imbedded in the stone. It was about an inch and a quarter long, of a brownish yellow colour, and had a round head, with bright sparkling projecting eyes. It was apparently dead, but after being about five minutes exposed to the air it showed signs of life. One of the workmen, very cruelly, put snuff in its eyes, which seemed to cause it much pain. It soon

after ran about with much celerity; and after half an hour was brushed off the stone and killed. When found, it was coiled up in a round cavity of its own form, being an exact impression of the animal. This stone is naturally a little damp; and about half an inch all round the lizard was a soft sand, the same colour as the animal. There were about 14 feet of earth above the rock, and the block in which the lizard was found was 7 or 8 feet deep in the rock; so that the whole depth of the animal from the surface was 21 or 22 feet. The stone had no fissure, was quite hard, and one of the best to be got from the quarry of Cullaloe—reckoned perhaps the best in Scotland."

A letter from W. T. Bree, dated December 19, 1835, to the Magazine of Natural History (vol. IX, 1836, p. 316):

"Last summer a live toad was found incarcerated in solid sandstone, by the workmen who were forming the railroad through Coventry Park.... I saw the toad alive the day after it was found. It is a good example of the kind, the block or rather rock, of sandstone being solid, except the cavity where the toad lay."

Benjamin Silliman, in his American Journal of Science (XXIX, 1836, p. 353), noted that "the animal was reinstated in his narrow bed by the engineer, but it survived only four days". The engineer was John Brunton (1812-1899), and he wrote a book about his experiences for his young grandchildren, in which he mentions the 'Coventry Toad':—

"While making the cutting for the Railway near Coventry, in the new Red sandstone formation, one day when I was standing at the easterly end of the cutting, some loaded wagons were running down towards the embankment. As they passed one piece of stone fell from a wagon; in falling it broke across the middle and disclosed a hole in the heart of the stone, out of which fell a live toad. I immediately picked it up, as well as the two broken pieces of rock."

The "New Red Sandstone" of Great Britain is Triassic in age, and is called "new" only to differentiate it from the "Old Red" which was formed in the Devonian Period. The current ages assigned to these periods are 195 and 355 million years, respectively.

"Toads or frogs enclosed for many years in stones or rocks" is one of the items listed in an article (with the idiotic title "Hints for Writing Science") by Edwin E. Slosson, which appeared in Science News Letter for July 1, 1950. Mr. Slosson stated that stories on his list "should, in general, not be used, at least until they are thoroughly investigated by several competent specialists in the subject". We are not certain that there are any 'specialists' in this subject, though a number of persons have pronounced

upon it, perhaps the most notable being Maurice Burton. In the August 29, 1959, issue of The Illustrated London News he devoted his section on "The World of Science" to "toad-in-the-hole" stories. He doesn't believe a word of them, though he is relatively charitable about it. He first details experiments carried out by the Rev. W. Buckland, father of Francis Buckland (not 'Frank' as Burton has it) of Curiosities of Natural History fame. These tests consisted of sealing toads into chambers cut in limestone and sandstone blocks, each chamber being given a glass cover, and the whole being covered with slate and then buried in the ground. No toad survived more than two years, and those that lived that long were (apparently all) in cells imperfectly sealed or on which the glass cover had cracked. Burton notes that Buckland's tests "show several important conclusions. First, that a toad cannot survive in a hermetically-sealed chamber inside a block of mineral. This is no more than we should expect." He further points out that the record lifespan for an amphibian is 29 years, and that many of the stories place toads in rocks formed long before toads evolved. He concludes that "while accepting that the tellers of such stories are sincere, there are only a few explanations possible. Either the toad... was able to enter the block of stone or coal when it was small, through a hole in the block that escapes observation, and has been there only a few years, or there is an optical illusion...."

The optical illusion stems from the "fact" that a toad (or frog or whatever) was sitting nearby and, at the moment the stone was split open, leaped past the workman who immediately assumed that it came out of the rock. Burton relates an experience of this kind which he had and notes that "but for the fact that there was no cavity in the nodule I. . . should have had no alternative than to suppose that the toad had come from inside the piece of rock."

This would be fine 'but for the fact' that in almost every instance there is recorded the existence of a cavity, usually just fitting the animal therein, and with "walls" commonly described as "smooth" or even "polished". In addition, the absence of any cracks is specifically mentioned. But perhaps more important is the fact that there really are no reports that indicate that the toad "leaped" past any one. On the contrary, in many cases the animal had to be "extracted" from the hole, or was described as moribund, sometimes reviving for a short period and then dying.

On the other hand, one must certainly agree that it is most improbable that any toad could have survived millions of years of entombment, even if one assumes that toads evolved much earlier than is indicated by the fossil record. Also, as Burton points out, some of the reports concern toads found in strata laid down under oceans, and no marine toad is known.

But, superficially at least, the experiments of Buckland Senior are not supported by such cases as those of Mr. Hattingh and Mr. Mackley, related above. Mr. Hattingh in particular has no reason to make up such a story, and indeed, should be congratulated on his courage in speaking out! Even the blindest description of those who presume to report such cases are hardly flattering.

So, unless one chooses to call all such reporters liars, the problem of toads-in-a-hole remains. There may be two basic types: those immured in 'unnatural' structures —concrete floors, corner stones, and such—either accidentally or deliberately; and those found in natural structures —boulders, trees, coal seams, and such. In the first instance, and ignoring the few cases which are very probably hoaxes, it may be simply that toads, frogs, and what-have-you are capable of going into some kind of suspended animation when circumstances demand it, and that they can

Additions to College Museum. 1821-1822.

- Additions to* 28. Black Bullfinch. Monte Mori Bameria
College Museum 29. Toad found in a stone Lord & Lady Duncan
1821-1822 30. Bird from New Holland. Purchased at sale.
X 31. Twelve models in clay. Mendocino Figures.
G. Marchionni; Bologna.
X 32. Models Indian House & Printing-Machine &
Marchionni & Heddere.

"
Accounts of
Piquin Museum 1.
1821-1822. 2.
2. 3.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.
21.
22.
23.
24.
25.
26.
27.
28.
29.
30.
31.
32.
33.
34.
35.
36.
37.
38.
39.
40.
41.
42.
43.
44.
45.
46.
47.
48.
49.
50.
51.
52.
53.
54.
55.
56.
57.
58.
59.
60.
61.
62.
63.
64.
65.
66.
67.
68.
69.
70.
71.
72.
73.
74.
75.
76.
77.
78.
79.
80.
81.
82.
83.
84.
85.
86.
87.
88.
89.
90.
91.
92.
93.
94.
95.
96.
97.
98.
99.
100.

A Xerox copy of a page from the Register of the Edinburgh University Museum (which was given to the nation in 1854 to found what is now the Royal Scottish Museum) reprinted here through the kindness of Dr A S Clarke. The specimen is no longer in their collections, nor could Dr Clarke find any further documentation.

survive for much longer periods than is generally thought possible, experiments to the contrary notwithstanding.

The second type is much more 'difficult'. Unfortunately, we do not have the space to give the details of the nearly forty cases in our files, and some particulars will have to be taken 'on faith'. The condition of the cavities in which the animals were found suggests that they had been occupied for some time, hence the smooth or polished walls. But why the cavity should just fit the animal is not so clear unless this type of entombment is due to some kind of two-way ITF or teleportation, the toad 'going in' and an equal amount of rock 'going out'. This is certainly a bizarre notion but it is not impossible,

though it still leaves open the question of where the toads came from in the first place. Are they ordinary terrestrial toads with a mixed-up sense of (teleporting) direction, or did they slip in from some other universe and "get off at the wrong subway station"? There are, of course, a vast number of reports of 'fafrotskies'—things that fall from the sky—and very often they are said to have appeared relatively close to the ground and not to have fallen from the stratosphere. It is therefore possible that the entombed toads are misdirected fafrotskies.

The whole business is most unsatisfactory, and anyone who comes across accounts of entombed toads or other animals or who has any serious suggestions to make, is invited to send them in.

II. ONTOLOGY

'WORM-HOLES' IN SPACE

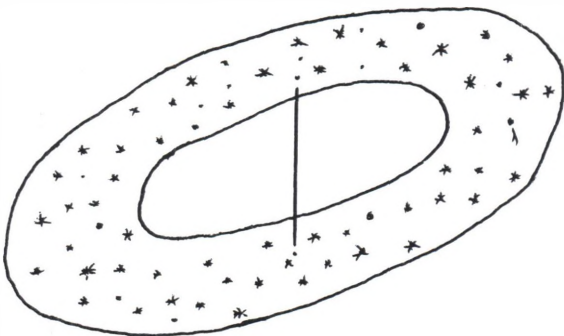
We have just caught up with a splendid article entitled "Breaking the Light Barrier" by Adrian Berry, which appeared in the Daily Telegraph Magazine (London) for the 7th May 1971. This was reprinted (in slightly cut form) in the March 1972 issue of Saga Magazine. Our readers are urged to read this in full if possible. It concerns the theories of Professor John A. Wheeler, one of if not the most forward-thinking scientist of our time. (It was he who some years ago suggested that the Library of the American Philosophical Society—basically a scientific society despite its now somewhat misleading name—collect the best science fiction, since many new ideas, both scientific and technological, first appear in this form.)

Albert Einstein formulated his Special Theory of Relativity in 1905. This showed that no material object could reach the speed of light since, as it approached that speed, its length would shrink toward zero while the energy required to propel it would rise toward infinity. Not even the most audacious science-fiction writer has ever suggested a spaceship that would do that. However, many writers have envisioned some way to get round the obstacle posed by the Special Theory, usually by "jumping" through an area in which time and distance have no meaning at all. As Adrian Berry points out, "This sort of talk infuri-

ates the conventional scientists. One distinguished science writer, James Strong, declares: 'No assumption has been more fiercely challenged by the scientifically-minded than the rather casual assertion that faster-than-light speeds will one day be commonplace. On half a dozen counts, it has been emphatically declared to be quite impossible, and... violates every tenet of Relativity'."

John Wheeler obviously couldn't care less about "impossibilities"; and he is an expert on both Einstein's Special Theory and his General Theory of Relativity, published in 1916. The latter is a far more complicated business than his Special Theory, and no one has yet figured it all out, but Professor Wheeler has been working on some aspects of it that provide a real challenge to the mind. In 1962 he and R. W. Fuller published a paper entitled "Casualty and Multiply-Connected Space-Time" (Physical Review, Oct. 15, 1962). It was cautious but must have brought joy to the hearts of the science-fiction writers.

Professor Wheeler suspects that the Universe is shaped like a doughnut and that it contains "worm-holes"—entrances into another universe that is invisible to us but lies "just next door". This idea stems from Einstein's General Theory which proved that in reality there is no such thing as a straight line: space is curved (hence Einstein's famous joke that if your eyesight were good enough and you were to look up at the sky, you would see the back of your head). But the General Theory goes further than that. Time is also curved. The Special Theory (keep this and the G.T. separated) lays down a third rule about a spaceship approaching the speed of light: as the spaceship accelerates, time slows down until, at the speed of light, it stops altogether. Hence, time runs at different speeds throughout the universe and must also follow a curved path. Wheeler used the G.T. as a base for his new science known as "geometrodynamics"—the geometry of curved empty space or the dynamics of geometry. (Take a deep breath.) He



has "invented" the "geon", a theoretical particle composed of curved empty space (time and space are both curved and thus may consist of solid matter).

Wheeler asks the question: "Do geons exist, or do they not? Do they have mass, or do they not?" His reply is that since they are deflected into curved paths by the gravitational attraction of stars and galaxies, they must exist; and they obey the laws of mass and so must be massive. Ergo, they exist as solid objects and, inasmuch as all 'solid' objects—(e.g., the chair you are sitting on) when seen through a good enough microscope—are riddled with "worm-holes". To quote Wheeler: "Geometrodynamical law forces on all space this foam-like character." To quote Adrian Berry:

"On the other side of the worm-holes lies the mysterious region of Superspace [the hole in the doughnut], to which all parts of our Universe are connected by worm-holes. Inside Superspace there is neither space nor time. Every event in this fantastic region occurs simultaneously, and every journey across it is instantaneous. This is logical since the traveller who has entered Superspace has left time and space [ours at any rate] behind him. It is idle to ask whether Superspace is hot or cold, whether it is wide or narrow, or whether it is shaped like a cube or a sphere. It is a place without any dimensions at all...."

Is Superspace the answer to "faster-than-light" travel? Wheeler and Fuller point out that their work thus far is largely a mathematical exercise but conclude that their theory does not conflict with Einstein's conception of curved space-time. A "jump" through Superspace is a decided shortcut—across the 'hole in the doughnut' rather than around its perimeter. Another way to imagine a journey through Superspace is to mark Earth as a dot at the top of a piece of paper and place another dot at the bottom to represent the star you wish to reach. The linear distance between the two is the 'normal' distance one must travel to reach that star. Now fold the paper so that "Earth" and the star are back to back and punch a hole through with a needle. You have just 'jumped' through Superspace.

Wheeler and his colleagues are still looking for a way to find the worm-holes. Travel through them will probably come (assuming that they exist), but it is unlikely to be available in the near future.

Professor Wheeler is by no means alone in believing in Superspace. Kip Thorne of the California Institute of Technology is another believer. He asks,

where does a neutron star go when it is crushed out of existence by its own gravitation, and suggests that it might "bubble up" either in another part of our Universe, or in another universe altogether. And one Yuval Ne'eman, of Tel Aviv University, has talked of "Black Holes" as possible entrances to Wheeler's worm-holes. Too, there is a young Englishman, Michael Hawking. He is crippled, unable to walk, and can speak and write only with difficulty, but many top physicists believe he may be to Einstein what Einstein was to Newton. He is much interested in Black Holes and has done considerable work on them. Some of the theories concerning them are mind-boggling, and for the benefit of those who are mathematically inclined we here include a formula or two (the unmathematical need not worry about them).

A Black Hole is formed when the radius of a star, (or other body), R , gets small enough that:

$$R \text{ is equal to or less than } \frac{2GM}{c^2}$$

where M is mass, G is the Newtonian universal gravitational constant (present value)

$$6.67 \times 10^{11} \frac{\text{m}^3}{\text{kg sec}^2}$$

and c is the speed of light. Theoretically there is a lower limit for the size of a Black Hole (and some are believed to 'reside' inside planets* or even so-called asteroids) but there is no upper limit. In fact, based on current figures, our whole universe comes very close to the " R equals" equation above; and we may be a Black Hole in somebody else's universe. Perhaps Mr. Hawking will find out, theoretically at least.

Suggested Reading:

J. A. Wheeler. Geometrodynamics. Academic Press, 1962.

Jerry Pournelle. "Black Hole Mines in the Asteroid Belt. Vertex, August 1973.

J. A. Wheeler and S. Tilson. "The Dynamics of Space-Time", International Science and Technology, December 1963.

G. Robinson. "Hypertravel", The Listener, December 17, 1964.

*Pluto was found where it was predicted to be and has the 'right' orbit, but its effects on Neptune and Uranus indicate that it must mass about six times as much as the Earth. Unhappily for the astronomers, it appears to be about the size of Mercury. If both calculations are correct, its gravitational effect is "all wrong" for its size. Unless there is a Black Hole inside it.

Microform Editions of PURSUIT

Volumes 3-4 (1970-1971) of Pursuit are available from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106. The price is \$4.10. Volume 2 will be available at a later date, as will subsequent volumes of Pursuit.

V. ASTRONOMY

Planet X would seem to be ex-X. Its existence was predicted on the basis of computerization of 'wobbles' in the orbit of Halley's Comet in particular, but another computer team has recomputerized the whole business and believes that the first was in error. In any case, no one has been able actually to find Planet X where it 'ought' to be.

And keep your eyes and ears open for fortune when that brilliant new comet, discovered by Kohoutek, 'arrives' late this year. We shall be interested to see whether there is any outbreak of oddities and enigmas coincident with its appearance. Such have been claimed in the past, and it may be worthwhile to keep detailed records on this one.

VII. BIOLOGY

LUMINOUS PEOPLE AND OTHERS

by Ivan T. Sanderson

There are (or can be) luminous men. By this I mean wholly physical human entities, born of the human species, and fully touchable. I saw one once. He was a Nicaraguan fisherman living on a small creek among the vast coastal mangrove swamps of the Bluefields Lagoon area of his country, on the Caribbean side. We were puttering around that labyrinth in our schooner some years ago and got lost. Our old pirate captain (may his fine soul rest in peace, for he was murdered by his comperes for aiding the U.S. Government in time of war by giving away secrets of their smuggling operations for the enemy) took a dim view of this because he was born a Nicaraguan (but "wanted" in seven countries!) and prided himself on knowing all Caribbean waters and waterways as well as the hairs on the back of his hands.

We were chugging along shortly after dark through this tiny twisting creek — our boat drew only six feet of water — when we turned a bend and espied a cleared area to the right, upon which grew short grass. At the back of this clearing was a small shack. As we rounded the bend we saw a fairly bright greenish-blue light emerge from this shack and advance to the creek to coincide with our passing. Even our gallant and extremely rugged 'Captain' was rather startled, for said light was in the form of a person's torso!

To make a very long story as short as possible, I will only explain that this was a local citizen of, apparently, almost pure African origin, wearing only a wide leather belt, and a pair of ragged khaki pants. His upper half was magnificently proportioned but all over it were large mottlings (as in hound-dogs) of brightly 'lit' glowing luminescence. By very pure coincidence, our Captain happened to have known the man years before and we struck up a conversation after we tied up at his so-called dock.

The glowing patches on his body, which really lit up the afterdeck, proved on examination with a flashlight to be huge, soft swellings. They glowed from inside — a sight more bizarre than I would ever have wished to see. I did not know much, if anything, about

such things in those days, so I endeavoured to preserve the amenities. We had a couple of rums and a pleasant chat in the brightly lit main cabin, and then our new friend went ashore and waved us a cheery goodbye.

This whole business bothered me for a long time. I was told that this fine fellow was a fisherman and that he spent most of his time in and out of the creeks, brackish lagoons, and the coastal seas. I also knew that there are certain bacteria that are brilliantly luminous — for their size, that is. In point of fact, it has been stated (by Dr. E. Newton Harvey, I think, in his brilliant book Living Light, Princeton University Press, 1940) that said minutenesses individually put out more energy — in the form of visible light — than any power-plant that we had devised before the implementation of atomic energy. But it never dawned on me that there might be a connection between marine luminous bacteria and a luminous marine fisherman!

Some years later I received a letter from one Dr. Robert A. Schlernitzauer of Cocoa, Florida, and I quote:

"Dear Mr. Sanderson,

"I read your most interesting story [in the Satevepost*] with more than average interest. You see, for many years I was a country doctor. Later I retired to go into business with my son,...

"Many years ago, late one evening in September, a deep-sea fisherman came into my office. He had been living with two companions in a shack across Merritt Island, on the Banana River. Every day he came home soaked with salt water.

"He did not complain of being ill nor suffering in any way, except that he could not sleep at night. Likewise, his condition, he said, annoyed his room-mates.

"'Put out your office lights', he said; 'it is growing dark'. Then he removed his coat and shirt.

"I saw a large, glowing tumor on his shoulder. The glow it emitted was almost as bright as the light of a candle. I found the mass was slightly spongy. It had become infected with phosphorescent sea animalcul-

*The Saturday Evening Post, now 'extinct'.

ae, which frequent the waters of the Indian and Banana Rivers in our autumn months.

"Later, we found the tumor was a sarcoma, of which the poor chap subsequently died. It occurred to me that pathological epithelial cells might be more susceptible to such an infection than normal cells.

"I reported the case, and a medical journal replied that such cases, though very rare, were not without precedent...."

The whole matter of light is profoundly difficult. There was a time when we thought of all light as being hot. Then came the neon sign. It is not very, if at all, hot. And science finally got around to fireflies and luminous fungi, bacteria, fish, octopuses, centipedes, old beef steaks and —so help me— men. These things do not give off heat; but they do give off light.

For instance, about one-third of all deep-sea fish appear to be self-luminous. There is a fish in the Indonesian Banda Sea that collects luminous bacteria in small pockets under its eyes and which it can turn on or off at will!

What is more, the light given off by living things is almost 100% visible light, without any ultraviolet or infrared. It will cause both fluorescence and phosphorescence. It affects photographic plates, stimulates the actions of chlorophyll, and plants will lean toward it if they are otherwise in darkness.

There are other amazing things that have been found out about "living light". The so-called glow-worm, which actually is a small beetle, puts out light which is 14-thousandths of the brightness of a clear blue sky at midday; a luminous watch dial puts out only one one-hundred thousandth of said sky. This animal light is luminescent, as opposed to incandescent. This is a very important point. The luminosity of an incandescent lamp is only about one-half of one percent that of the total of a firefly's output. And an electric bulb is about one per cent efficient; the light from a firefly is more nearly 100% efficient than anything else we know of on this earth as a producer of light. Because this light is so almost "pure" it has no color range so that everything in it looks green-gray.

The problem of light in its various forms is one which has concerned science for a long time. Many years ago a famous New York newspaper column asked and gave an answer to this question: "Is there

such a thing as light without heat? Theoretically there is. But practically, man has not yet been able to create it. The most perfect light known is that emitted by fireflies, for almost all rays are light rays and almost none heat rays."

All of which reminds me of a rather pleasant limerick composed spontaneously by a friend of mine on passing a sign-post in southern England:

A seasoned young toper of Hinckley
Said, "Yes, I can see it distinctly,
An enormous pink rat,
Incandescent at that,
Which is glowing distinctly and pinkly.

"THE BLOB"

For the benefit of those few persons who may not have heard about it, and for the record—

At the end of May, 1973, Mrs. Marie Harris, a housewife and organic gardener living in Garland, Texas (a suburb of Dallas), found a "thing" in her backyard. She described it as being "as big as a cupcake, and not very pretty. Really kind of disgusting. I couldn't tell if it was animal or vegetable". The newspapers had a field day; descriptions became more and more lurid, and eventually one joker announced that it was a mutated fungus and might "grow from one billion spores to one billion tons in 24 hours". Mrs. Harris was described as "terrified" by the blob, though her pictures show a pleasant woman who smiles as she pokes a stick into the mass. In fact, the comments attributed to her are about the only sensible ones in connection with "the blob". Rather naturally she did want to get rid of it —or them; she had four "blobs" in her garden over a period of several weeks. Efforts to kill off the "blob" apparently succeeded —but each time it re-appeared until finally she used a nicotine solution on the last and largest of the blobs.

"The Blob" was in fact nothing but a Slime Mold, specifically Fuligo septica. However, it is more than understandable that Mrs. Harris and just about everyone else were puzzled by it and unable to identify it. Even experts on the Mycetozoa —an Order that includes only the Slime Molds— really don't know what to do with these extraordinary 'animals'. An 'official' description (from Storer & Usinger's General Zoology,

Our Postal Service

From the National Observer of the 16th June 1973, credited to David P. Johnson: "Residents of Seattle received this astounding letter from the Seattle Letter Carriers Association: 'Dear Friends: Recently we sent out a [fund-raising] mailing containing tickets to the Annual Letter Carriers Ball. After doing some checking, it now appears that some, if not all, of these letters were not received. Our main concern is that you may yet receive these letters containing tickets to the function which is now past, and we do not wish to irritate our friends.

"Therefore, if you did receive the tickets and chose not to donate to us, please ignore this letter. However, if you did not receive the tickets and would have donated to us, we do surely need the funds.'"

p. 270) reads: "Adult phase a sheet of multinucleate protoplasm with streaming movements; feed on decaying wood or leaves, or live fungi". A more helpful account appears in Winifred Duncan's charming book The Private Life of the Protozoa, unhappily long out of print. According to Miss Duncan's book, there appears to be some doubt whether Slime Molds are animal, vegetable, or mineral! It depends upon the stage of their life cycle. Ignoring the question of which came first, they start as spores and grow into a variety of forms, all microscopic, and may be red, black, or purple, but never green. They look like "a forest of fantastic trees, each with its own kind and color of fruit." These fruits finally burst and, from this vegetable mold, there come animals—specifically amoebae with a nucleus, a vacuole, and arms of protoplasm exactly like Amoeba proteus. These gather their bodies into a "bag" and put out a tail. All this time they are busy eating, and when they reach a certain size they lose their tails and become shapeless again. At this point their behaviour is truly baffling. Whenever they meet one of their own kind, the two 'melt together', losing their cell walls. When enough of these have come together they form "one huge amoeba, two inches across or more—a beautiful sheet of jelly with the nuclei all floating about loose inside it. This is called 'Slime mold'..."

This large amoeba travels about so long as there is moisture available. Winifred Duncan describes her specimen's peramulations as follows:

"It poured itself around grass blades, around stones, into earth cracks; it separated into glassy strands around tree roots, only to flow together again on the other side. Meeting a big obstacle, it piled up on itself like a transparent mound of jelly. Then it would spread out again, thin as a cobweb, frothing at the edges, branching like ferns, like frost on a windowpane; advancing like a tide, bubbling, streaming, pausing to surround tiny particles of food, digesting them, and leaving the remains behind in a trail of slime, like a snail... It came up against a tree trunk, To divide around this was impossible without the two halves losing each other forever. They could, of course, have wandered off as two big amoebae. But no,... The mass began to climb, straight up the trunk,... Winding up the bark crevices it had become so thin that you would have passed it by as just a patch of dampness...."

Came the dry season and brilliant sunshine, and the Slime Mold shrank into separate blobs of jelly which pulled in their arms, lost all their moisture and hardened into tiny crystal-like grains, invisible to the naked eye. When doused by a thunder shower, the crystals picked up moisture and became amoebae again, and again formed a jelly. But this time when dried out, the jelly separated into individual amoebae which reverted to the tiny tree-like forms and "Slime mold returned to the plant kingdom, to sleep through the long, dry season as a mold".

An "ordinary slime mold" the newspaper called it; but almost totally unexplained.

A BOTANICAL PUZZLE

The various bamboos are extremely useful as well as ornamental, and we have acquired several species from the Pacific Bamboo Gardens in San Diego, California. One note in their handbook intrigued us.

"Bamboo is rather unique [sic] in its flowering habits. There are bamboos which are in flower continuously, others which flower in cycles ranging from 15 to 60 years, and others which have never flowered in recorded history (over 150 years for Bambusa vulgaris).... All the plants of a single clone will flower at the same time, regardless of where in the world that plant is. For instance, Phyllostachys bambusoides is in flower in Japan at this time. It is also in flower in Chico, California at the USDA station there, as well as in our gardens."

We wrote to the owner of the Gardens to ask for more information on this curious behaviour and received the following reply.

"Your question regarding the flowering of the bamboos is one that has puzzled botanists for some time. It boils down to this. A single plant (one from a seed, called a clone) will flower at the same time. Nothing unusual in that except that when the plant is propagated by division, any division of that clone will flower at the same time. That is, regardless of the size of the plant, location in the world, climate, hemisphere, etc. That in itself is unusual enough but when added to the fact that some of the bamboos flower every 120 years (Phyllostachys bambusoides for example) it adds to the mystery.

"I talked with a botanist at the Smithsonian Institution who is studying bamboos and we discussed the phenomenon. He is of the opinion that it is genetic in nature and that a 'clock' is present in the cell. An acceptable solution except that in nature there is no known example of a 'clock' covering a period of time anywhere near 120 years in duration. We have seven- and seventeen-year locusts etc. but no 120-year or even 60-year occurrences. I theorize that the 'clock' is triggered by some external force. Periodicity of that magnitude is found only in the movements of the solar system which has led me out of the realm of botany, at least what botanists normally consider.

"Of course all of the above is speculation. No one as yet has done a definitive genetic analysis of the bamboos, and until someone does, all we can do is speculate...."

We tend to agree with this gentleman's speculations concerning an external 'trigger' for a built-in 'clock' but also wonder about the evolution of the bamboos in general. Many varieties do not come true

from seed, and if they produce seed only once in 120 years... Well, we have P. bambusoides on order, but someone else will have to investigate its flowering next time.

GIANT SKELETONS

We would not care to even try to guess how many chaps are barging around the country 'hunting' a Sasquatch (Bigfoot, Oh-Mah, etc.), but we have a suggestion for them: Try tracking down some of the many giant skeletons reported from all over the place. A recent article in the Winnipeg Free Press tells of the successful search for a fossil whale skeleton originally found by a farmer in 1906. In 1963 a local historian mentioned this in a book, and Richard Harrington, curator of quaternary zoology at Canada's National Museum of Natural Sciences, spent a year tracking it down through old records. It was found in a hay loft.

The North Jersey Highlander for Spring 1973 includes an article by the editor, W. Mead Stapler, entitled "A Mystery in History". It concerns giant skeletons. Mr. Stapler notes that The Conservationist for Dec.-Jan. 1966-67 (a publication of the New York State Department of Environmental Conservation, Albany, NY) published a piece on "The Lesser Wilderness—Tug Hill" area north of Utica, in which the author discussed the finding of "skeletons of giants, with double rows of teeth in each jaw". In The History of Bedford, Somerset, and Fulton Counties in Pennsylvania by Waterman and Hopkins, is described the finding of the "remains" of a people of "gigantic size" who preceded the Iroquois in an area about 100 miles south of Tug Hill and were called the Allegwi by the Iroquois. And in Benjamin J. Lossing's Field Book of the Revolution there is a footnote:

"I [presumably the author] saw, in the possession of Mr. Neilson, many relics plowed up from the battle field [at Saratoga], such as cannon-balls, grape shot, tomahawks, arrow-heads, buttons, knives, etc., and among them were some teeth, evidently front ones, but double...."

The teeth were attributed to the Hessians, but undoubtedly this is simply the result of propaganda.

The New York Times of the 2nd December 1930: "Discovery of apparent remains of a race of giants has been made at Sayopa, Sonora, a mining town 300 miles south of the Mexican border. J. E. Coker, a mining engineer, reports that laborers clearing ranch land near the Yaqui River dug into an old cemetery where bodies of men, averaging eight feet in height, were found buried tier on tier...." Dismissed by Bernard Brown, curator of the American Museum of Natural History, as pure exaggeration. There is no indication that he saw the skeletons.

The New York Times, 14th February 1936: Managua, Nicaragua— "Press accounts say that the skeleton of a gigantic man, with head missing, has been unearthed at El Boquin, on the Mico River, in the Chontales district. The ribs are a yard long and four inches wide and the shin bone is too heavy for one man to carry. 'Chontales' is an Indian word, meaning 'wild men'." This does sound exaggerated, but the "wild men" is interesting indeed.

The New York Times, 9th June 1936: Miami, Florida— "A tale of human skeletons eight feet long [sic] embedded in the sand of an uninhabited little island off Southern Florida was brought here today by three fishermen. They exhibited a piece of one skull containing six teeth. E. M. Miller, zoologist at the University of Miami, said the mandible was that of a man and was probably several hundred years old. 'It is entirely probable that this find might be important,' he commented. The men said that the skulls were unusually thick, the jaws protruded and the eye sockets were high in the head."

And then there is the American Investigating Museum and Indians with horns as reported by Robert R. Lyman in his book Forbidden Land:

"Eight hundred and more years ago, giant Indians with horns roamed the Black Forest of Pennsylvania beneath giant trees.

"At Tioga Point, on the Murray farm, a short distance from Sayre, in Bradford County, an amazing discovery was made. Dr. G. P. Donehoo, State Historian and a former minister of the Presbyterian Church in Coudersport, together with Prof. A. B. Skinner of the American Investigating Museum, and Prof. W. K. Morehead, of Phillips Andover Academy, uncovered an Indian mound. They found the bones of 68 men which were believed to have been buried about the year 1200.

"The average height of these men was 7 feet, while many were much taller. On some of the skulls, 2 inches above the perfectly formed forehead, were protuberances of bone, evidently horns that had been there since birth. Some of the specimens were sent to the American Investigating Museum.

"We have more evidence that very tall men once lived in the Black Forest. In December 1886, W. H. Scoville of Andrews Settlement discovered an Indian mound at Ellisburg. When opened, the skeleton of a man was found. It was close to eight feet in length. Trees on and around the mound indicated that burial had been made at least 200 years before."

These are only a few of the reports of giant skeletons that have been found and in many cases said to have been sent to local museums. Writing to museums or even puttering about in their basements may not be as 'exciting' as tramping through the woods, but it is likely to be far more productive of results. Quite a few ABSM hunters have told us that

they spent time "in the field" and saw nothing but very often had the feeling that they were being watched. In fact, one group was told by a forest ranger that he had seen a Sasquatch trailing them! They came home empty handed. Skeletons in museums or barn lofts won't run away, but they must be searched for. And local museums are more likely to have specimens 'buried' in their collections than the big

institutions — particularly those operated by orthodox scientists who do not want to have to rewrite the textbooks. Troublesome items are prone to lose their labels, and unlabelled items are of no value and are therefore thrown out. Small museums, in many cases connected with a local historical society, often depend on part-time volunteer help — but such persons are usually very knowledgeable.

VIII. ANTHROPOLOGY

LEYS — ANCIENT BRITISH POWER NETWORK?

by Janet Bord

Archaeologists and historians have long asserted (or implied, if perhaps not stated in so many words) that the ancient Britons were woad-painted savages, ignorant and superstitious, but the present-day trend, especially among the young, is to doubt this belief. The most obvious flaw in the 'savages' theory is the evidence in stone and earth all over the British Isles — the many ancient sites which remain as a 'living' memory of our ancestors several thousands of years ago. These ancient sites — standing stones, stone circles, barrows, tumuli, cairns, hillforts — have for the most part long been neglected, except for certain examples such as Stonehenge, Avebury and Silbury Hill, but there are literally thousands of them scattered around the country (those which have survived the ravages of human interference, that is — many more have been lost for ever). They have long been regarded as rude monuments erected for no apparent reason and therefore of little significance, and have mostly been categorized as religious structures, probably pagan temples, burial mounds, etc. These interpretations may be partly true, indeed, but what has not been fully appreciated until now is the tremendous labour and skill that went into building these carefully-designed structures.

The man who has done the most work in this field is Professor Alexander Thom,¹ who has examined some 600 stone circles in the U.K., and made detailed surveys of 300 of them. The results he has produced throw a completely new light on these constructions and the people who built them. It seems that the circles provide an extremely accurate means of calculating the movements of sun, moon and major stars during the year. In order to be used in this way, the stones had to be set out with a high degree of accuracy, and Professor Thom has found that the people who constructed the circles had a knowledge of mathematics that was only equalled a thousand years later in classical Greece.

But this modern look into Britain's past has recently been taking another form, and this 'live archaeology' goes under the name of ley-hunting. The basis of the ley system is quite simple — that sites of ancient importance align exactly in straight lines, these often stretching for long distances across

country. By using maps in the first instance (Ordnance Survey maps, scale 1" to 1 mile, are the best for this purpose, as ancient sites are marked, also churches and other places of historical interest), it is quickly found that, in most parts of Britain except the most built-up areas, ancient sites seem to be built along invisible lines. The following types of site are considered: stone circles, standing stones, barrows, tumuli, 'castles', mottes and baileys, moats, hillforts, earthworks, churches, abbeys and other religious buildings, in fact anything which is very old or traditionally sacred. Many three-, four- and five-point alignments, perhaps also six-, seven- and eight-point ones can be found. In order to rule out coincidence, 'ley hunters' stipulate that an alignment which merits further investigation must have at least five valid points aligning within a fairly short distance, that is ten rather than fifty miles.

The next stage in a ley hunt is to actually go out to the site and try to walk along the selected ley. Often initial results are discouraging, because twentieth-century man has so changed the face of the landscape that what seems a clear line on the map is rarely so on the land. But if a rural area is chosen for the experiment, one is more likely to meet with success. An unsuspected markstone, now hidden in a hedgerow but standing untouched where it has stood for literally thousands of years, an obvious piece of old trackway, a notch cut out of a distant hillside — any of these will be unexpected and exciting confirmation of the presence of an old ley.

This brief introduction can of course only give the bare bones of what is becoming a wide field of study; anyone who finds his interest aroused would be well advised to read The Old Straight Track by Alfred Watkins.² This book, originally published in the 1920s and now reissued, is the book on ley hunting, for Alfred Watkins was himself the 'discoverer' of the ley system. As John Michell says in his new introduction to the book — "The revelation took place when Watkins was 65 years old. Riding across the hills near Bredwardine in his native county [Herefordshire], he pulled up his horse to look out over the landscape below. At that moment he became aware of a network of lines, standing out like glowing wires all over the surface of the country, intersecting at the sites of old churches, old stones and other spots of traditional sanctity." Watkins painstakingly develop-

ed his ley research and, as he was also a professional photographer, he left some beautiful pictures illustrating the most important ancient sites on the leys he found. In his book, he puts forward the belief that the leys were old trackways, but this is doubted by most people now, in view of the fact that many of them went straight through marshy land, even water, and over high mountains, whereas man would prefer a more circuitous but easier route when travelling across country. But it has recently been said by those in the know that Watkins was not wholly convinced himself by his 'trackways' explanation.

And that brings us to the upsurge of interest in ley-hunting today. Further research into leys, in the light of other unexplained mysteries such as dowsing, radiesthesia, ufology, terrestrial zodiacs like that at Glastonbury, folklore, all of which appear to have links with leys, suggests that there may be a more subtle reason for their existence. It is now widely felt that the leys may in fact follow invisible lines of power criss-crossing the countryside, and that early man was aware of this power, which he harnessed for his own spiritual and physical benefit (and also for the benefit of nature and the earth) by erecting his 'temples' at certain significant points along the power-lines. Some people who seem to have a particular kind of sensitivity receive shocks, sometimes violent, when they touch certain ancient stones, but the stones don't seem to be 'charged' with power all the time.

Again, the current ideas are only briefly stated here, for to try to give examples of all the aspects would make this article far too long. Two books now available in the U.S.A., giving far more information on leys and related topics, are listed at the end of this article.³

So far, leys are only positively known in Britain, but that does not mean that they do not exist elsewhere. Most countries have ancient sites, and it is more than likely that leys are a worldwide phenomenon. There are dragon lines in China which seem to have had the same effect and purpose, and Watkins in his book mentions briefly evidence in Burma, India, Palestine, Egypt and Syria which has similarities to certain ley features.

In England there is an active body of people delving into these mysteries, and their thoughts, arguments and researches are published in the monthly magazine The Ley Hunter.⁴ Naturally their ideas are considered cranky by the 'straight' archaeologists, and ley-hunters are generally considered to be the lunatic fringe of archaeology, but year by year their ideas gain new followers among more open-minded people who have had the sense to pick up an Ordnance Survey map and a straight-edge, and try it for themselves.

Antiquarian Harold Bayley's words, written in 1919, are most apt in this context: "It is, however, an Englishman's peculiarity that possessing perhaps

the most interesting history, and some of the most fascinating relics in the world, he is either too modest or too dull to take account of them."

1. A. Thom, Megalithic Sites in Britain (Oxford University Press, 1967) and Lunar Observatories (Oxford University Press, 1971).
2. Alfred Watkins, The Old Straight Track (Garnstone Press, 1970 - 59 Brompton Road, London SW3 1DS).
3. John Michell, The View Over Atlantis (Garnstone Press, 1969; also available in the U.S.A. as a paperback, I believe).
Janet and Colin Bord, Mysterious Britain (Garnstone Press, 1972; and New York, Doubleday, 1973).
4. The Ley Hunter, edited by Paul Screeton, 5 Egton Drive, Seaton Carew, Hartlepool, Co. Durham, TS25 2AT.

PHARAOH'S PUMP

by Adolph L. Heuer, Jr.

[Editor's Note: This is a further commentary on Edward J. Kunkel's book Pharaoh's Pump, reviewed in our April 1973 issue.]

Mr. Kunkel's book was rather well done, and the author seems to have done his homework. Further, I believe that careful study of his basic premise also seems worthwhile—at least in part. There is no doubt that the Great Pyramid is very complicated though seemingly simple. It would seem also to be a multi-purpose structure.

Although the suggestion that it was a pump during construction for the purpose of construction may at first seem a bit bizarre, the idea does have merit. Even today our greatest mover of massive weights is flotation. Consider for a moment a drydock for a battleship. While a modern drydock is part of our modern technology, it should be very clear that whoever built the Great Pyramid also had a highly developed technology. To view this construction in any other light would be ludicrous to say the least.

After having reached the conclusion that Mr. Kunkel's "pump" was a reasonable suggestion, it was necessary to determine, insofar as was possible, whether his statements concerning the pyramid are correct. For this I turned to Peter Tompkins' book Secrets of the Great Pyramid. There are many evidences therein to support the idea of a technology far more advanced than is usually assumed for the Ancient Egyptians—and also considerable "pure" scientific knowledge, particularly in the fields of geography and astronomy. However, I shall limit myself here to those 'items' that seem to support Mr. Kunkel's premise. These quotations are, of course, taken out of context but generally stand on their own.

Page 12, para. 2 of caption: "The walls of the [Queen's] chamber are of unblemished limestone blocks, beautifully finished, but early explorers found them mysteriously encrusted with salt as much as ½ inch thick." This strongly supports Mr. Kunkel's theory. Further, it suggests that either salt water was used for additional bouyancy, or that the pump was so efficient that it started pumping salt water from the Mediterranean during a low-water period of the Nile.

Page 63, para. 6: "The floor [of Wellington's chamber] was covered with a thin black powder which when analyzed turned out to be exuviae, or the cast-off shells and skins of insects. Of living insects there were none to be found." The unexplained "exuviae" might indicate a drought and also suggest deposition by water.

Here follow a series of quotations and then my comment.

Page 68, para. 1: "Hewn to the correct angle and polished to a uniform surface, they [the limestone casing stones] were quite perfect, in the words of Howard Vyse, 'in a sloping plane as correct and true almost as modern work by optical instrument makers. The joints were scarcely perceptible, not wider than the thickness of silver paper.'"

Page 101, para. 6: "He was amazed to find that the average error in the part [of the Descending Passage] built of masonry was an infinitesimal 1/50 inch in 150 feet; and over the entire length of 350 feet the sides were within 1/4 inch of being absolutely straight."

Page 105, para. 2 ff: "The faces [of the casing stones] were so straight and truly square that when the stones had been placed together the film of mortar left between them was on the average no thicker than a man's nail, or 1/50 inch over an average area of 35 square feet. ...the mean variation of the casings from a straight line and a true square was but 1/100 inch on a length of 75 inches.... So fine was the cement that after millennia of exposure to the elements, the stones shattered before the cement would yield."

Page 323, para. 5: "The reports about the dimensions of the coffer show some discrepancies, because the coffer was cut rather roughly. Petrie relates that an entire side was cut by the strokes of

a hugh saw, which was backed up after it had dented the stone as much as one inch out of plumb."

Tompkins notes that the only reason offered for the building of the pyramid is that it was constructed to protect the dead Pharaoh from the attentions of grave robbers, but goes on to point out that there are no reliable reports that any body was ever found in the Great Pyramid. After reading the astounding accuracy reported in the first three quotations and then considering the shabby workmanship described in the last, it strikes me that the "coffer" would be the last place for a Pharaoh! However, the repeated exacting precision plus the statement that the saw used to cut the coffer drifted one inch out of plumb very strongly suggests unattended automated machinery. Mr. Kunkel's suggestion that it served as an ingenious "alarm bell" (bear in mind that it is reported to ring when struck) is much more logical.

Page 234, para. 3: "The only report on the daily cost of building the Pyramid is given by Herodotus, who says that an interpreter told him the daily sum spent on radishes, onions and garlic for the workmen was inscribed in Egyptian on the base of the Pyramid. But the report sounds apocryphal..."

I must say that I go along with Mr. Kunkel on this one. A diet of radishes, onions and garlic would hardly keep a workman on his feet —and it seems to have astonished Herodotus. On the other hand, all three are 'hot' vegetables that burn the tongue; and Mr. Kunkel suggests that the Egyptians used these as symbols to represent fuel and that the record of the number doled out each day in fact indicated fuel consumption.

It must be admitted that both Edward J. Kunkel and I have indulged in considerable speculation on this subject and have not "proved" anything. However, Mr. Kunkel did construct and shows pictures of a working model. If nothing else, it might be great fun for budding engineers —or others— to copy his model and see whether it really works. I personally would be interested in the results and suggest that this might make a good science class project.

[Ed. note: One of our members won first prize in a science fair at a parochial school —his subject: UFOs!]

Shades of Dorothy Parker?

Seattle, Wash. (UPI)— "The following ad appeared in Friday's [8 June 1973] edition of the Seattle Post-Intelligencer: 'My boat and motor has disappeared from Martha Lake, Alderwood Manor, since June 10. I send my wishes that the boat breaks in half in mid-lake and that your mother is unsuccessful in attracting help as she runs barking along the shore.'"

MEMBERS' FORUM

Member #292 has dug up an old issue of the National Geographic (January 1933) which contains photographs and more information on the great wall of Peru. It was almost certainly built as a defensive barrier and, in fact, there are forts to be found along it.

We are still looking for that photograph of a Thunderbird (see Pursuit, Vol. 5, No. 2). Can't someone find it?!!!!?

Also, can anyone tell us of the present whereabouts of the "Casper, Wyoming, Mummy"? This has been written up many times, usually being identified as a 60-year-old man and probably "not of this earth". On the other hand, museum specialists have x-rayed it and identified it as an anencephalic fetus—i.e. an infant, whether stillborn or not, lacking most of the brain. However, one specialist at the American Museum of Natural History whom we have been in touch with, has been unable to locate his set of x-rays (he had been moved to a new office just before we wrote to him and is still disentangling his files). We want very much to find this mummy—or good x-rays—so that the dentition can be studied by an expert of our own choosing. If the mummy's jaw contains a set of adult teeth, we have a 'problem' on our hands; if the teeth are "baby teeth", then we can forget it. At the moment it is not at either the AMNH or the Smithsonian, and rumours have it that it was repossessed by the owner; we have been unable to trace him.

Janet Bord, whose article on leys appears in this issue, is planning a book on ghosts for children (a

serious introductory study) and has asked that anyone who has knowledge of purportedly genuine photographs of ghosts or ghostly phenomena, contact her. Her business address is 34a Barnsdale Road, London W9 3LL, England. (Though 'ghosts' are not our usual business, we are glad to lend a hand here.)

Member #1173 is looking for funding for a search for a Manimal (i.e. Bigfoot). Any members who know of institutions or individuals who might be willing to provide funds are asked to get in touch with him through us. He is also interested in contacting persons who would like to join in such a search next summer—presumably only those who can at least afford to pay their personal expenses.

For the record, Bernard Heuvelmans is not working on a book on freshwater 'monsters'. Having spent ten years on sea monsters, he simply couldn't face another bout with water monsters. Though this will be a disappointment to those who looked forward to getting the book, we do not blame M. Heuvelmans at all. Even *fortean* in massive doses can become a bore.

And Mildred Higgins, Starsong, Rt. 5, Fayetteville, Ark. 72701, would like to correspond with anyone "interested in/or collecting accounts of tiny UFO discs" and also "for whatever humor or whatever else it might lead to, if anyone wants to help me compile the 'strange words' that sometimes pop out of dream life". Alma Sanderson had a tendency to "talk in tongues" in her sleep, and on one famous occasion she sat bolt upright, flung out an imperious hand—nearly braining Ivan—and uttered the single word FLOY!

BOOK REVIEWS

by Sabina W. Sanderson

Andrew Tomas. We Are Not the First. New York: Bantam Books. 1973. \$1.25. (Hardcover editions: New York: G. P. Putnam; London: Souvenir Press.)

This is still another book in the "Was there an ancient civilization preceding what we think of as the dawn of history" genre? It is considerably better than most despite a few dubious statements, and contains references for some material though not all. There is a fair bibliography but no index in the paperback edition. (We do not know whether there is one in the hardcover editions, but hope there is.) The author does include a most interesting chart outlining the "Rediscovery of Science", i.e. scientific and technological ideas known in antiquity and later lost, to be rediscovered by modern science.

While much of the material in Andrew Tomas's book will be familiar to those who have read other books on this subject, he does include some new material and seems to have delved more deeply into some of the old subject matter. The few items which are definitely not a propos (e.g. the "non-rusting" pillar at Delhi) do not seriously affect his basic thesis that there was very advanced knowledge millennia ago and that at least part of this knowledge would seem to have come from some outside source.

I do wish he had not devoted three chapters to "men who traveled to one of these oases" (remote parts of the world where a scientific 'Utopia' is said to linger on), namely, Apollonius of Tyana, the "immortal" Comte de Saint-Germain, and Nicholas Roerich. In fact, he dedicates his book to Saint-Germain, "who, in the words of Voltaire, 'never dies and knows everything'". I am inclined to wonder where Voltaire's

tongue was when he said that, and, while all three men are fascinating, the mere mention of Saint-Germain in particular is likely to put many person's backs up. The increasing evidence that there was indeed a prehistoric highly advanced civilization requires the most searching enquiry, and we shall need all the 'professional' help we can muster to determine the truth of all this. The general thesis may not be popular but it should not be ignored.

One quite refreshing aspect of Andrew Tomas's writing is his kindly attitude toward orthodox scientists. He notes the very narrow specialization forced on most scientists, with the unavoidable result that they know little outside their own field (called "professional cretinism" by the scientists themselves). He is not, of course, referring to those vociferous gentlemen who yell "Fake" when anything fortetean appears on their horizon but this lot can be ignored if the more open minded can be induced to tackle this problem. Tomas's book might be a good one to pass around.

Vertex: The Magazine of Science Fiction. 8060 Melrose Ave., Los Angeles, California 90046. Bimonthly. \$6.00 per year. (\$7 for Canada; \$8 'foreign')

This new science fiction magazine is really quite splendid —not so much for its science fiction as for its science. Each issue has contained several articles on the latest in astronomy, computer technology, and other such items as are of particular interest to SF writers and readers. These are very well written and while perhaps not strictly fortetean, they deal with discoveries and theories that have the orthodox scientists tearing their hair.

Even if you don't like science fiction, we believe you will find it worth the price. Tell them we sent you.

Raymond Lamont Brown. Phantoms of the Sea. New York: Taplinger Publishing Company. 1973. \$5.50.

This book deals primarily if not exclusively with ghosts and is therefore generally outside our field. Most of the tales are the old stand-bys though a few will be new to most readers. However, incredibly enough, the author manages to make the whole thing rather dull.

Gerald S. Hawkins. Beyond Stonehenge. New York: Harper & Row. 1973. \$10.00.

This is a rather odd book and definitely not up to Mr. Hawkins' previous work. In the first place, the author does not seem to be certain whom he is addressing; portions of the book are quite technical and will leave most readers a bit baffled unless they are astronomers or mathematicians, but other sections are simply a chatty travelogue with repetitious discussion of his self-imposed diet that wards off the "traveller's trots". He bounces from Stonehenge to the Nazca Lines (he concludes that they are not a form of calendar) to Egypt and elsewhere and ends up with a sort of "whither mankind" and a discussion of ecology and such. Altogether it is not a satisfying book.

Elizabeth Montgomery Campbell and David Solomon. The Search for Morag. New York: Walker and Company. 1973. \$6.95.

This is an excellent and very straightforward account of the initial work undertaken at Loch Morar which lies not far from Loch Ness and also is inhabited by "monsters". The Loch Morar Survey group consisted of three autonomous sections: biological, operational, and historical. The findings of the biologists, including the geological history of the loch, are reported by David Solomon who holds a degree in zoology from Exeter University, while Mrs. Campbell reports on the operational (i.e. camera-watch) and historical 'sections', the latter being, of course, the unearthing of eye-witness reports. It is unfortunate but inevitable that these really are no different from those from Loch Ness and are therefore generally repetitious. One exception is the 'initial' report from Loch Morar, given here without the journalistic embellishments that appeared in newspapers and infuriated the two gentlemen involved; they were not attacked by a monster but one did graze the side of their boat and the 'ancient' oar they used to try to fend it off did break, but both men felt that there was nothing deliberate in the animal's actions.

The book is divided into four sections —Background, Environment, Evidence, and Assessment— and also includes a bibliography and an index. Though much of the material will be familiar to those who have followed the investigations at Loch Ness, the book is a worthy addition to any library dealing with fortetean.

Lastly, as ammunition to be used against the sceptics, I must quote from Mrs. Campbell's chapter "The Problem of Credibility": "Drink is another theory to explain away the monsters, though I often think that this one reflects more upon the doubter than the doubted. This was certainly so in the case of one

man who cornered me at a party with the repeated question, 'How do you know they weren't drunk?' His insistence led him to the ultimate absurdity of querying Tim Dinsdale's film with the words 'Yes, but how do you know he wasn't drunk when he took it?' " This needs no comment from me.

Guy Underwood. The Pattern of the Past. London: Pitman Publishing. 1971. £1.50. New York: Abelard-Schuman, Ltd. 1973. \$8.95 (probable price).

The author's thesis is that all prehistoric structures —henge monuments, figures carved in the chalk, barrows, roads, fords, entrances and divisions of fields and you name it—and also medieval churches and cathedrals, are determined in both location and shape, by what he calls "geodetic lines". He has "proved" his thesis by dowsing. Acceptance of his thesis therefore depends upon the reader's faith in his ability as a dowser, something that I am inclined to doubt for various reasons.

Underwood devotes several chapters to the art of dowsing and states that there are two basic types of dowsers: negative and positive ("terms used for distinction only, and not signifying any electrical polarity"). Negative dowsers are sensitive to water lines, i.e. underground streams. Positive dowsers, when equipped with a "suitable rod", can detect not only water lines but also "aquastats" and "track lines" which, according to the author, cannot be detected by negative dowsers. And herein lies the rub. Despite the fact that Underwood devotes a chapter to "Primary Geodetic Lines" (his name for water lines, aquastats, and track lines), I really do not know what "aquastats" and "track lines" are. Certainly the author does not make it clear, though it is aquastats and track lines that he uses to prove his theory. He states that "Hazards are present in full force when water divining constitutes the prime method of research. The sole media whereby the investigator may detect or measure any phenomenon are his own perceptions—and these are liable to mislead him. Auto-suggestion is his enemy, and preconceived ideas may blind him to important facts when these seem impossible or produce chance and unrepresentative results..." This does not sit well with his later statement (p. 142) "As had already become clear to me, the location and shape of all prehistoric structures are determined by geodetic lines...."; nor with his conclusion that the movements of a divining rod are due to reflex actions of the dowser's muscles, triggered by some outside force. The "rod" used by Underwood was a particularly 'sensitive' one whose movements could be detected "though they be slight tremors only". Indeed, he detected the existence of aquastats and track lines by the use of his "Geodetic rod", though he contends that other dowsers have been influenced by them but have paid no attention to them, being interested only in finding underground streams or springs.

Underwood's detailed presentation of his findings is intriguing but not, to me at least, convincing. He has a tendency to make flat statements where qualified ones should be required —e.g., speaking of Stonehenge, he says "The supposition that all recumbent stones have fallen from an upright position is incorrect..."; and there is, so far as I can make out, not one single instance in which his findings by dowsing have been confirmed by digging down to find his aquastats or track lines. He several times states that his findings have been confirmed, but the implication is that the confirmation has come from other dowsers. He also makes several errors of commission and omission. Perhaps the most incredible of these concerns Logan Stones. These are the large stones which are precisely balanced on one point and can be rocked easily. To quote Underwood:

"The most famous in Britain is near Land's End, and weighs 70 tons, while the largest in the world is at Tandil, in the Argentine. It weighs over 700 tons, and rocks in the wind. All the logan stones tested for geodetic lines were discovered to be placed similarly to monoliths and the inference is that they were deliberately sited with reference to the geodetic pattern."

He fails even to speculate on how anyone managed to balance a 70-ton rock on one point, and one can only hope that he does not seriously mean that anyone positioned a 700-ton stone so precisely that it rocks in the wind!

Similarly he identifies some cracks on Stone 28 at Stonehenge as forming a swastika, noting that "This is roughly executed, but recognizable". Here I can only credit him with a good imagination. I see no resemblance whatsoever.

When he comes to cathedrals built in medieval times, he would seem to be guilty of omissions in at least one case —Salisbury Cathedral— in that he completely ignores the fact that the original cathedral was built on top of a chalk hill over the ruins of a Norman castle, a Roman fortress, and an Iron Age hill fort. The present cathedral was built because the old one... Well, to quote from a history of Salisbury Cathedral by Canon A. F. Smethhurst, Ph.D., Treasurer of Salisbury Cathedral:

"Both the Roman and the Saxon names for Old Sarum mean 'dry fortress' or 'dry city'; and it was indeed dry and very short of water, being on the summit of a hill with chalky subsoil. The Cathedral was within the 'line of fire' from the castle; the wind was terrible 'so that the clerks can hardly hear one another

sing' and they suffered from severe rheumatism, and the Church was continually damaged [often by lightning]; there were not sufficient houses for the clergy within the congested city; and finally the soldiers in the castle were continually annoying them and interfering with the services.... with the King's support he [Richard Poore, the Bishop] began in 1220 to build a new Cathedral on land which was his own property, having been refused ground at Wilton by the Abbess there..."

Compare this with Underwood's statement that "It was immediately apparent that where anomalies and irregularities occurred in medieval cathedrals and churches, these existed for the sole purpose of avoiding breach of the geodetic laws." He includes diagrams of several cathedrals, Salisbury among them, with the "geodetic lines" drawn in. I am afraid I am not impressed; they look like so much spaghetti to me.

The author devotes two chapters to the effects of his aquastats and track lines on animals and vegetation and here, for some unfathomable reason, he is more convincing though, again, acceptance of his statements depends on one's belief in the author's dowsing. I have grave doubts about it but still feel that at least a preliminary check should be made to determine whether there is any truth in his findings. He may be in a category with Bottineau and his "nauscopie", a method he used to foretell the arrival of ships long before they appeared over the horizon but which he was utterly unable to teach anyone else.

John Green. The Sasquatch File. (Order from Cheam Publishing Ltd., Box 99, Agassiz, B.C.) 1973. \$4.00 postpaid.

The Sasquatch File is John Green's third book on reports of hair-covered hominids (he calls them "apes") that he has been investigating for fifteen years in the Pacific Northwest and in Canada. This is avowedly what Ivan T. Sanderson always called a "seed-catalogue". Accounts of tracks and sightings are arranged by states and provinces in chronological periods from the 1800's to reports as recent as March and April 1973. Unlike Green's previous books, there are fewer illustrations, but bibliographical notes and a good index are included.

While about 12% of the reports listed originate east of the Rocky Mountains, the book does little to indicate the complexities of distinguishing more than one type of creature among the eastern accounts. To most readers they will all appear to be "Sasquatches", while details not given by Green indicate otherwise. And this is true here even for accounts in and west of the Rockies where the author is most familiar with his subject. Only the most avid follower of Bigfoot/Sasquatch progress will want to read this catalogue. For readers to whom this subject is new, a concise introduction to activity in the Pacific Northwest and the most thought-provoking material on what is really happening there are to be found in Green's second book, Year of the Sasquatch, still available from Cheam Publishing at \$3.00 postpaid.

While we find that we disagree with several of the author's concluding remarks in The Sasquatch File, we do agree that the existence of any such living creatures will be officially denied until a specimen is physically presented to professional scientists for their inspection.

Mark A. Hall

Again, please let us know of any change of address as long in advance as possible, and include your new zip code.

HOW TO GET YOUR NAME OFF JUNK MAIL LISTS!

Believe it or not, you can eliminate most of the junk mail you receive; not all of it —and for pornographic mail, ask your local post office for form No.2201 ("the form for getting off sexually-oriented advertising lists"). As for ordinary junk mail, write to Miss Lynn Lee, Director of Consumer Relations, Direct Mail Advertising Association, Inc., 230 Park Avenue, New York, New York 10017. She will send you information on their service, together with the necessary forms. There is no cost to you except for the postage required to request the form and return it to her.

THE SOCIETY FOR THE INVESTIGATION OF THE UNEXPLAINED

GOVERNING BOARD

*President (elected for 5 years)	Hans Stefan Santesson
*Vice-President (life)	Edgar O. Schoenenberger
*Secretary (life)	Sabina W. Sanderson
*Treasurer (elected one year)	Allen V. Noe
Board Member (elected one year)	Daniel F. Manning
Board Member (elected one year)	Robert C. Warth
Board Member (elected one year)	Mark A. Hall
Board Member (elected one year)	R. Martin Wolf
*Trustees in accordance with the laws of the State of New Jersey	

EXECUTIVE BOARD

Acting Director	Mark A. Hall
Executive Secretary	Marion L. Fawcett
Technical Director	Robert C. Warth
Technical Consultant	Robert J. Durant
Research Consultant	Carl J. Pabst
Mass Media	Walter J. McGraw

EDITORIAL BOARD

Editor and Publisher	Hans Stefan Santesson
Executive Editor	Marion L. Fawcett
Consulting Editor	Walter J. McGraw
Assistant Editor	Robert J. Durant

SCIENTIFIC ADVISORY BOARD

- Dr. George A. Agogino – Chairman, Department of Anthropology, and Director, Paleo-Indian Institute, Eastern New Mexico University. (Archaeology)
- Dr. N. Burtshak-Abramovitch – Academician, Georgian Academy of Science, Palaeobiological Institute; University of Tblisi. (Palaeontology)
- Dr. Carl H. Delacato – Associate Director, Institutes for the Achievement of Human Potential, Philadelphia, (Mentology)
- Dr. W. C. Osman Hill – Dublin and London (Comparative Anatomy)
- Dr. J. Allen Hynek – Director, Lindheimer Astronomical Research Center, Northwestern University. (Astronomy)
- Dr. George C. Kennedy – Professor of Geology, Institute of Geophysics, U.C.L.A. (Geomorphology and Geophysics)
- Dr. Martin Kruskal – Program in Applied Mathematics, Princeton University. (Mathematics)
- Dr. Samuel B. McDowell – Professor of Biology, Rutgers University, Newark, New Jersey. (General Biology)
- Dr. Vladimir Markotic – Professor of Anthropology, Department of Archaeology, University of Alberta, Canada (Ethnosociology and Ethnology)
- Dr. Kirtley F. Mather – Professor of Geology, Emeritus, Harvard University. (Geology)
- Dr. John R. Napier – Unit of Primate Biology, Queen Elizabeth College, University of London. (Physical Anthropology)
- Dr. W. Ted Roth – Assistant Director, Baltimore Zoo, Baltimore, Maryland. (Ecologist & Zoogeographer)
- Dr. Frank B. Salisbury – Head, Plant Science Department, College of Agriculture, Utah State University. (Phytochemistry)
- Dr. Berthold Eric Schwarz – Consultant (Brain-Wave Laboratory), Essex County Medical Center, Cedar Grove, New Jersey. (Mental Sciences)
- Dr. Roger W. Wescott – Professor and Chairman, Department of Anthropology, Drew University, Madison, New Jersey. (Cultural Anthropology and Linguistics)
- Dr. A. Joseph Wraight – Chief Geographer, U. S. Coast & Geodetic Survey. (Geography and Oceanography)
- Dr. Robert K. Zuck – Professor and Chairman, Department of Botany, Drew University, Madison, New Jersey. (Botany)

