

is extremely important in any parapsychological research.

It was at this point that one of the experimenters noticed that the senior researcher seemed to be paying more than usual attention to the equipment. The situation was discussed with two other members of the research team and they decided to check out their suspicions by observing the senior researcher from a concealed position. They saw him cheating. He was manipulating the machinery to yield more than chance results.

The incident was reported to Rhine on June 12, and the researcher involved was confronted with the evidence. The man admitted his guilt and turned in his resignation. "As he expressed his deep regrets," says Rhine, "he added a few words about overwork during recent months."

The man in question has been with Rhine's institute for more than five years and was reported to have been selected as Rhine's successor. Although only one incident of falsification of data was admitted to, all of the man's published research must now be held in doubt. Rhine has attempted to notify everyone in the field—especially those researchers who might be involved in repeating the work or using the results.

In a case of this kind, says Rhine, it is the responsibility of the institute to make all of the facts known. Throughout his journal discussion of the case, however, Rhine refers to the researcher as Dr. W. This, says Rhine, is "for humane reasons." But he admits that, "Any reader can easily discover Dr. W's name. . . . The purpose here is not to hide that information from anyone needing it, but to encourage respect for proper personal rights and those of innocent people in W's non-parapsychological circles."

SCIENCE NEWS received the man's name—Walter J. Levy—from independent sources, but has been unable to contact Levy for comment on the incident.

Robert L. Morris is president of the Parapsychological Association, the professional organization of parapsychologists. Morris disagrees with Rhine's attempt to withhold the guilty researcher's name. Morris told SCIENCE NEWS he has no desire to see the man come to any harm, "but in any form of scientific debate the name must come out." For one thing, Morris says, if the name is not used other people involved in the same type of research might be mistakenly confused with Levy.

The Parapsychological Association has no statement to make on the incident, but Morris says that any type of fraud is naturally condemned and that Levy's resignation from the association was immediately accepted.

What effect will this incident have on the field of parapsychology? It could cast a cloud of doubt over the entire field and possibly harm the reputations of everyone in the field. It could also keep good researchers from entering the field or even force some researchers to abandon parapsychology. "But it would be unfortunate," says Morris, "if people made generalizations from one case. I didn't start doubting other cancer researchers when I heard

about the Sloan-Kettering affair."

Rhine has similar hopes. He says it was fortunate that the cheating was detected and publicized by the parapsychologists themselves. "This might pull us up," he says, "to do something that we haven't been able to do." Rhine feels that the "debacle can at least serve as an example to help bring the field of psi closer to a full realization of this half-hidden problem of honesty." □

Claims of great longevity exaggerated

There is no cult of youth and beauty in the Caucasus. In that mountainous region in the southwestern Soviet Union, the older you get the more respected and powerful you become. And the definition there of "old" is nothing to wheeze at—*real* old age starts after 100. And coincidentally, there are more *real* old people in the Caucasus region than anywhere on Earth. (Other small pockets of extreme longevity have been found in Ecuador, Turkey and Pakistan.) In the western world, the chances of running into a centenarian are only 2 or 3 in 100,000. But in the Caucasus, the chances are 15 times better—45 in 100,000. Almost 9,000 persons there claim to be 100 to 120, and more than 500 claim to be between 120 and 170 years old.

The Soviet press has long celebrated the Caucasus centenarians, and scientists the world over have read eagerly. Innumerable research teams have journeyed to remote villages to study the secrets of long life, and have formulated many theories, none universally

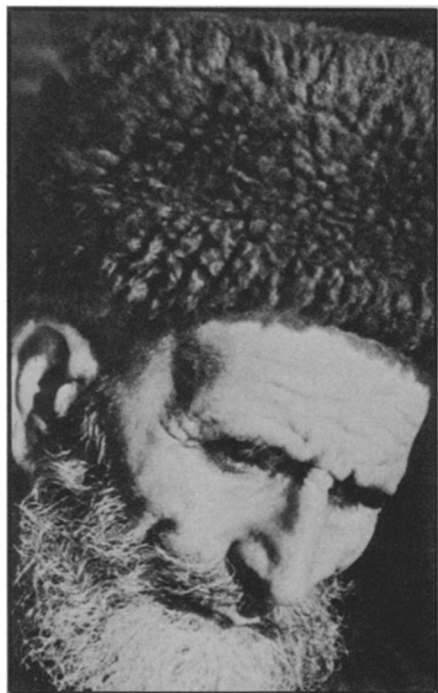
accepted. Now Zhores A. Medvedev, the noted Soviet scientist and physician now living in London, presents a new theory in the upcoming October GERONTOLOGIST. The secret of long life among the Caucasians is simple indeed, he says. They aren't as old as they say they are.

Medvedev says that instead of a biological basis for superlongevity, the answer lies in exaggeration and mistake due to a "complex social problem which developed for many social, cultural, habitual, traditional, local and political reasons . . ."

First, he disputes the more common theories. Special climatic conditions cannot be a factor, he says, because in the Caucasus region can be found cold, dry mountain weather; warm, dry weather in a relatively flat land; and humid and subtropical weather in the Abkhazia subregion. Genetic factors are an unlikely answer because the area is multinational, with statistically no more mixed marriages than are found in other multinational areas of the world. Specific dietary factors have been claimed, but the Caucasian's diet is completely different, and much more nutritious, than the diets of long-lived people in other regional pockets of longevity, eliminating comparison.

Next, he lists some of the main fallacies inherent in the superlongevity claims by drawing on records and personal knowledge about official procedures and traditions in the Soviet Union. Most important, there are no reliable documents establishing the ages of the superold. Census and passport data are given orally. In Moslem areas no birth registration is made, and in Christian areas, these records were destroyed along with the churches. Moslem areas have proportionately more centenarians, and confusion in age assignment may exist, Medvedev says, because the Moslem year is 10 months long, and dates of birth are connected with a significant event, such as a great famine or snowfall.

Other apparent fallacies exist. Although it is normal to find fewer and fewer survivors in each higher age bracket, studies in one area revealed



Shirali Muslimova claimed to be 167 before he died last year in U.S.S.R.

To Our Readers

Last year's special double-sized issue on astronomy, published at the end of the summer, was so well received that we are preparing another such issue this year. It will combine the Aug. 24 and Aug. 31 issues of *SCIENCE NEWS* into one double-sized issue presenting news stories and illustrated feature articles in a variety of fields of astronomy. It will be mailed on Aug. 30.

—The Editor

more persons between 114 and 116 than between 110 and 114. And other studies showed a decrease in the percentage dying as they reached each higher age bracket instead of the expected increase. Also, although women have longer average life spans than men, the superold are usually men. "It is possible to suggest," Medvedev says, "that men are more likely to try to exaggerate their real ages than are women."

He presents two more bits of evidence. The distribution of centenarians is not random—usually one village has one centenarian. And psychological and biochemical studies show "the function and metabolism of longevous people of 100-110 years are on the same level as is usual for people of 55-60 years." Research on the superold in other countries does not usually show such para-

doxes, he says.

The exaggerated claims are sometimes amusing and implausible, and have sometimes led to embarrassment. One couple from Misabecia, Rustam Mamedov and his wife, claim to be 142 and 116 respectively. They say their youngest son was born when he was 107 and she was 83. One man from Yakutia received great publicity during the 1959 census when he gave his age as 130. But articles reaching his Ukrainian home village brought a swift response from those who knew him when. A World War I deserter, it seems he had adopted his father's identification papers and was really only 78 years old.

Medvedev points to three social and political factors that have led to these exaggerated claims. First, the older a person is, the more respect and honor he receives in his community. Local, regional and even national media have focused glowing attention on the centenarians. Second, the state program of political propaganda frequently refers to the large number of centenarians and "considers it to be a special social achievement of the Soviet Union." Finally, Stalin was from that area and grew increasingly fond of the legends as he grew older. Local authorities searched for area centenarians to prove the belief, and rumor became institutionalized, Medvedev says. □

Accelerators in tandem: Bevalac

Even before Lawrence Berkeley Laboratory's aging Bevatron gained a new lease on life by becoming the first high-energy heavy-ion accelerator (SN: 10/16/71, p. 266), scientists at the hilly laboratory were looking a few hundred yards up the slope toward where the low-energy HILAC accelerator was being rebuilt to produce a dense flux of heavy ions. Suppose an evacuated tube, with magnets at its bends, were built between the two machines; could the new Super-HILAC then act as a source of ions for the Bevatron, creating a machine that would accelerate large numbers of heavy nuclei to very high energies and open new realms of experimentation in physics and medicine?

Yes, it could. In the middle of the night on Aug. 1, a beam of carbon ions from the SuperHILAC was accelerated to 2.1 GeV per nucleon by the Bevatron, and the first "Bevalac" experiment got under way. A variety of questions were already waiting for a chance to be tested, based on the limited experience gained from the component machines.

From the intense, but low-powered, beam of the SuperHILAC, physicists had found a discrepancy between observation and theory concerning the radioactive decay of certain partially ionized

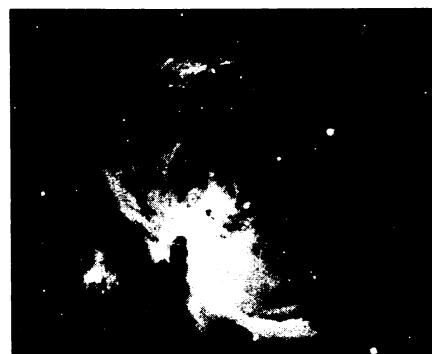
atoms. The Bevalac will allow pursuit of these experiments at higher energies.

Physicians have become increasingly interested in the high-energy particles obtainable in small quantities from the rejuvenated Bevatron, for they can be used to kill tumors with far greater precision than relatively more clumsy and dangerous X-ray treatment. The Bevalac will provide an intense enough beam for practical therapeutic use.

In one sense, the new machine will bring the heavens "down to earth," for the accelerated heavy nuclei are essentially artificial cosmic rays. The development of intense beams of these ions will allow duplication of intergalactic particle collisions in the laboratory.

Finally, theoretician T. D. Lee excited Berkeley experimentalists recently by suggesting that if an element as heavy as lead could be accelerated to very high energies and caused to collide with some equally heavy material, a new "condensed state" of matter might be formed. Such an experiment must wait, however, for the next proposed step in the Bevalac system. Laboratory scientists say that for a relatively modest sum, the vacuum system between the two components could be improved enough to transport nuclei this heavy.

Orion nebula and molecule No. 30



Hale Observatories

The great molecular cloud, the nebula, in the constellation Orion is a favorite spot for those interested in the dust and molecular gases of interstellar space. In the variety of molecules discovered there its only rivals are the clouds in Sagittarius that lie toward the center of the galaxy. Many molecular species have been found only in Orion and Sagittarius.

Orion is thus a good place to look for new molecules. Scientists now report the discovery of the 30th interstellar molecule, a new addition to the long list of organic molecules in the interstellar clouds. It is a nine-atom molecule, dimethyl ether, $(\text{CH}_3)_2\text{O}$.

The new molecule was found by a group led by L. E. Snyder of the Joint Institute for Laboratory Astrophysics of the University of Colorado and the National Bureau of Standards at Boulder, Colo. The instrument used was the 11-meter dish of the National Radio Astronomy Observatory. The report is in the *ASTROPHYSICAL JOURNAL* (Vol. 191, p. L79).

Three characteristic frequencies of dimethyl ether were recorded at frequencies of 90.9, 86.2 and 31.1 gigahertz. Taken together the measurements indicate either that there are collections of dimethyl ether molecules in Orion moving at two distinct velocities or that somehow certain internal motions of the molecule are preferentially energized.

Because dimethyl ether has a particular symmetry of construction and a large probability of collision with other molecules it should be useful for studying how interstellar gas molecules are energetically pumped. Some samples of interstellar gas show maser emission, and this requires a mechanism for pumping them with energy. Just what this mechanism is is one of the great mysteries of molecular astronomy.

One of the most ubiquitous of the interstellar molecules is carbon dioxide. It exists over quite a large area in Orion, and it is therefore a good medium from which to get some idea of the over-all configuration of the cloud.