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when I wound up  
my shaver...”**



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A few more details: The surgical steel blades are so designed that they are continuously self-sharpening. You will find that the more you use the RIVIERA the sharper and the better it gets. The guard is so unbelievably thin (5/100 of a millimeter) that pressure is unnecessary. You just touch the shaver on your face and gently guide it in circular motions.

We could go on. But we don't expect to sell you with words. We just want to get you open-minded enough to tie up \$19 for two weeks. We'll give you that long to put the RIVIERA to the test. If it disappoints you (if you want to return it for any reason), send it back. Your money will be in the return mail. Obviously, we have reason to believe that this won't happen and that you will want to keep your RIVIERA for the office, club, cabin or in a permanent place in your bathroom cabinet. It's that kind of a thing. Once you've tried it you won't let it go. P.S. You not only save the cost of an electric motor, but you save the cost of repairing it. The money that it leaves in your pocket; the dependability; the good, fast, clean shaves that you'll get—they'll give you the last laugh.

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SN 0427

**haverhill's**

center of the Milky Way galaxy.

Representatives of some of the observatories involved informally reported first results during the meeting of the International Scientific Radio Union in Washington, D.C. Some of the gas clouds have angular diameters around 5 or 10 minutes of arc; if they are at the distance of the galactic center this would mean they are tens of light years wide. Speeds range from one to 130 kilometers per second; slow clouds are thought to be near the earth, fast ones near the center.

This may be the only time in history such observations will be made. Twenty years ago existing telescopes couldn't handle them; 20 years from now, says Dr. Frank J. Kerr of the University of Maryland, radiotelescopes may be so good they won't need to rely on lunar occultations.

ASTRONOMY

**Visible nova in Vulpecula**

A nova is a small hot star—a sub-dwarf—that suddenly flares up to thousands or tens of thousands times its normal luminosity. Detectable novas are few—on the average two or three a year are recorded telescopically.

A nova visible to the naked eye is quite rare, but the discovery of such a one on the morning of April 15, by an English amateur astronomer, has been confirmed.

The reported nova has a visual magnitude of 5.1 (a little brighter than the planet Uranus at its brightest) and is located in the constellation Vulpecula, which is south of Cygnus. It was discovered by G. E. D. Alcock, a high school history teacher in Peterborough, England.

Novas rise to maximum brightness in only a few days. Astronomers like to catch them on the way up if they can, and quick notification by telegram enables all interested parties to go to work as quickly as possible.

After they pass maximum, novas fade away slowly, taking years or decades to return to normal.

“A nova this bright is rather unusual,” says Dr. Brian G. Marsden of the Smithsonian Astrophysical Observatory, Cambridge, Mass. The nova should, in principle, be visible to the naked eye but the bright artificial lights of most modern environments might wash it out. Therefore, Dr. Marsden suggests, binoculars should be used. The coordinates are right ascension, 19 hours, 45.9 minutes and declination, plus 27 degrees, 4 minutes.

The coordinates of Alcock's nova agree, to within eight minutes of arc, with those of a nova seen in 1670 and it is possible that the present nova is a

repetition of the old one. But the uncertainties in Alcock's coordinates, together with the uncertainties in those of the old nova, which were calculated in the 19th century from data found in 17th century records, make the agreement questionable. Even if the coincidence persists under the narrowest possible determination of coordinates, it still may never be known for sure whether the new nova is a repetition of the old.

One of the newly discovered pulsars (see p. 399) is located in Vulpecula, but the pulsar is too far away from the nova for any connection to be suspected.

OCCULT VIRUSES

**Diseases lie hidden**

Not long ago the concept of a virus invasion was fairly straightforward. The organisms were supposed to enter the host's blood stream where they caused acute infection. The severity of the symptoms depended on the degree of immunity already possessed by the host. The viruses then were met and neutralized by the host's antibodies, after which they disappeared from the blood stream.

This picture is changing lately as it is recognized that many viruses can achieve an entente with the host and lie hidden in the tissues, to be reactivated by some circumstance perhaps years later. These occult viruses, which may be exceedingly difficult to detect, now are implicated in some serious diseases.

The mechanism and the detection of chronic virus infections was the subject of a symposium and several reports at last week's meeting in Atlantic City of the Federation of American Associations for Experimental Biology.

Dr. F. J. Dixon Jr. of the Scripps Clinic and Research Foundation of La Jolla, Calif., says researchers conceivably may have to look to occult viruses to explain diseases such as rheumatoid arthritis, now thought to be due to an immune reaction by the victim to his own tissues.

Some cancers and some other diseases also may be due to viruses that live for years in a kind of balance between their own reproductive rate and the host's antibodies. Something happens—stress or other illness—to tip the balance, and the disease develops.

Dr. E. H. Lennette of the Department of Public Health, Berkeley, Calif., reports that one common virus, measles, has been linked in this way with the fatal disease called subacute sclerosing panencephalitis (SSPE).

It had been noted that children afflicted with SSPE possessed a very high level of measles antibodies in their blood.



All the cases studied by Dr. Lennette's group show a history of measles from two to eight years prior to the first symptoms of the disease. In some cases the level of measles antibodies has risen with the onset of SSPE. This indicates an immune reaction to a measles-type organism and therefore a connection between the SSPE organism and measles.

What apparently happens, Dr. Lennette says, is that the measles virus lies quiescent after the first attack. After a while some as yet unknown stimulus then causes it to become active in the central nervous system. There it produces a disease which proceeds shortly from behavioral changes to ataxia and finally to coma and death. There are several hundred cases of the disease each year in the U.S.

Dr. Lennette says attempts to culture the virus from samples taken from living patients have failed, suggesting that the virus has in some way become defective. While it carries all the genetic information borne by the ordinary virus it has lost its infectivity.

What appears likely is that the initial antibody attack on invading viruses does not always completely neutralize all of a virus that may be present. Some of it may be merely modified, and under certain conditions may still be able to do great damage.

#### CIVILIAN USES CUT

### AEC budget under Hill knives

This is the year of the cut budget. One Federal agency after another has seen its budget proposal sliced by Congressional knives.

The latest to emerge is the Atomic Energy Commission budget, which suffered a very selective trimming and a couple of significant grafts at the hands of the Joint Committee on Atomic Energy.

The general trend is down. The AEC had asked for a total of \$2.9 billion for fiscal 1969—\$277 million more than it got in 1968. The Joint Committee recommends a cut of \$302 million, thus bringing the 1969 authorization below that for 1968.

The AEC's proposals for its military activities survived intact—and one was increased. Civilian research took the cuts; the biggest slash was in the 200-400 billion-electron-volt accelerator project at Weston, Ill.

The AEC had asked for \$243 million for the Weston project; the Joint Committee recommended \$25 million. The \$25 million, however, represents the anticipated expense for this year. The commission had requested a lump authorization for the whole project. So the cut represents money that was not to be spent in the coming year anyway.

Other cuts were made in reactor research, physics research, biological research and community programs. A few of these items escaped unscathed but most were abraded by amounts up to five percent. For two civilian projects the Joint Committee made exceptions and added money to the AEC's request.

The Plowshare program for peaceful use of nuclear explosives was increased from \$14.5 million to \$17 million as a result of the Joint Committee's pleasure over the success of the Cabriolet and Buggy One tests (SN: 3/23, p. 280). The budget request had been made up before these shots and had been cut by half from 1968.

The isotopes development program was increased from \$7.2 million to \$8 million, a result of the Joint Committee's concern over efforts to develop a radioisotope-powered engine to assist human hearts.

In the military sphere, to which more than \$1 billion of the total budget is allocated, all items came through as requested with one exception. The item for naval propulsion was increased from a requested \$115.3 million to \$123.8 million. This increase represents the Committee's desire to go ahead with development of a power plant for a nuclear attack submarine, as suggested by Vice Adm. Hyman G. Rickover.

#### FDA MOVES

### Antibiotics in animals

New data show that food animals may retain some antibiotics for as long as 47 days, and that medication can persist even longer in the kidneys of treated animals, the Food and Drug Administration reports. Closer FDA regulations over animals that furnish milk and eggs as well as meat to the consumer will be the result of the research.

The withdrawal periods established under the Food Additive Amendments of 1958 to insure that there will be safe residues or no residues of antibiotics have been found impractical. Not only are some persons allergic to the antibiotics used; lavish use of the medications could favor the growth of drug-resistant communicable germs.

Proposed regulations were published in the Federal Register for April 11, and interested persons were given 60 days to submit comments on the proposed regulation revisions.

Veterinary antibiotics for external application or use on the eyes of animals may continue to be used as they do not cause residues in foods, but internal drugs, especially Streptomycin, will probably be forbidden.

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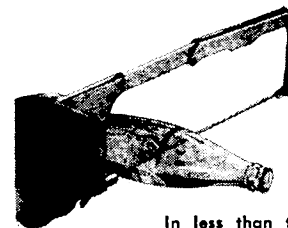
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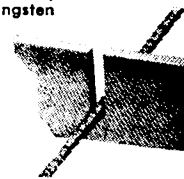
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