

ORDNANCE

**Telescope on Gun Mount
Tracks Long-Range Rockets**

See Front Cover

► ASTRONOMERS will recognize the apparatus pictured on this week's cover of the SCIENCE NEWS LETTER as a medium-sized reflecting telescope, but the mount will seem strange. To artillerymen the mount will look all right, but what's this on it in place of its usual 90-millimeter anti-aircraft cannon? The device is one of the strangest pieces of ordnance ever built: a 16-inch astronomical telescope on a gun mount, with a 35-millimeter motion picture camera instead of the usual still-photograph plate. It is to be used at the White Sands Proving Ground to track the flight of V-2's and other long-range rockets, from a vantage-point on top of an 8,000-foot mountain 35 miles from the launching point. At present it is still being tested by scientists of the Ballistics Research Laboratories at the Aberdeen Proving Ground, Md.

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MEDICINE

**Large Doses of Aspirin
Cause Poisoning in Babies**

► A WARNING that giving aspirin to babies may be dangerous appears in a report by Dr. Murray H. Bass of New York to the *Journal of the Mount Sinai Hospital* (Sept.-Oct.). Dr. Bass reported three cases of aspirin poisoning in babies under one year old. One of them died of the poisoning. While Dr. Bass' warning in the medical journal is addressed to physicians, mothers probably also need some warning of this danger.

A good many mothers are inclined to do their own doctoring of the babies or young children when they get colds or minor ailments. If they do call a doctor, they may not pay enough attention to the size of the dose of medicine he orders. Or, if the baby does not seem to get better as fast as mother thinks he should, and the medicine ordered was anything so familiar as aspirin, she may increase the dose without asking the doctor.

The cases of aspirin poisoning Dr. Bass reports were all cases in which the baby was given too big doses of aspirin. They were all cases in which the dose was prescribed by the physician. The use of aspirin has become so common that physicians, Dr. Bass says, "are apt to forget not only that certain individuals may

have an idiosyncrasy for the drug, but that the dosage, even in the average individual, must be definitely controlled."

The baby who died had been given more than 10 times the correct amount of aspirin. The correct dosage, for babies, according to Dr. Bass, is about one grain per year of age every four to six hours. The tablets you buy in the drug store each contains five grains.

Deep and very rapid breathing is the commonest symptom of aspirin poisoning. Fever may be a symptom and this may lead to confusion in the diagnosis. If the baby had a cold, and his temperature went up, it might be thought he was getting pneumonia. Other symptoms are nausea and vomiting, ringing in the ears, irritability, dizziness, delirium, restlessness, convulsions and coma, or unconsciousness. The victim may turn blue, circulation may fail and he may become dehydrated.

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MEDICINE-NUTRITION

**Fish Tapeworms Destroyed
Only by Thorough Cooking**

► FISH must be thoroughly cooked before eating if a kind of worm, called broad fish tapeworm, is to be prevented from invading the intestinal tract. It isn't even necessary to eat fish to get the tapeworm into the system, merely tasting it is enough, it appears from some cases just reported by Drs. David J. Sandweiss and Marcus H. Sugarman of Detroit in the *Journal of the Michigan State Medical Association*, (Oct.). The 12 women just tasted the soup or bits of fish, to see if the seasoning was right, and spit it out, not even swallowing it. But this was enough, the doctors point out, to get some of the tapeworm larvae into their mouths which they probably later swallowed with the saliva. After the larvae get into the stomach and intestinal tract they develop into adult tapeworms.

The Michigan doctors list pike, including pickerell, burbot and trout as the kinds of fish that have tapeworm larvae in them. Some authorities also suspect salmon. Fish that is properly heated, frozen, smoked or processed during commercial preparation is not dangerous because these processes, properly done, kill the tapeworm larvae. Cooking the fish at a temperature of at least 135 to 140 degrees Fahrenheit for about half an hour is advised by the Michigan doctors for killing the tapeworm larvae in fresh fish.

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GENERAL SCIENCE

**Establish Science Mission
In U. S. Embassy in London**

► EXCHANGE of scientific information between the U. S. and Great Britain will be facilitated by a new Mission on Science Technology being established in the United States Embassy in London.

A small group of American engineers and scientists are being assigned to the new staff. Chief functions of the mission will be giving the British information about work in this country and gathering information on British work for distribution in the U. S.

Prof. Earl A. Evans, Jr., chairman of the department of biochemistry at the University of Chicago, will serve as first head of the U. S. mission, but personnel will be assigned for short-term periods on a rotating basis.

Fields to be covered by the new mission include organic chemistry, biochemistry, physics, engineering, biology and agronomy.

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GENERAL SCIENCE

**Research Council Offers
Fellowships in Science**

► FELLOWSHIPS for research and advanced study in the natural sciences for the academic year (1948-49) are being administered by boards set up by the National Research Council. Funds for the grants come from various sources.

Postdoctoral fellowships for advanced study are being financed by grants from the Rockefeller Foundation. This program has been under way for 28 years and assisted many of today's leading scientists. Fields of study for the \$2,500-per-annum fellowships include the physical and mathematical sciences, geology and geography, biological and agricultural sciences, anthropology and psychology.

Annual stipends of \$2,500 to \$5,000 are available for study in chemical or biological sciences under fellowships supported by Merck and Company. Fellowships in electronics with stipends ranging from \$1,600 to \$2,100 per annum are supported by the Radio Corporation of America in another program.

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CE FIELDS

GENERAL SCIENCE

Industry and Scientists Plan High School Programs

► SCIENCE is stepping out of the textbook and coming alive for high school boys and girls of Rochester, N. Y., in a unique science program. Local industry and science are cooperating in a monthly series of "Excursions in Science," conducted by Rochester scientists.

First "excursion" was a program on optical science given in cooperation with Bausch and Lomb Optical Company. Next month, the youthful scientists will learn about new electron microscope techniques from scientists of the Eastman Kodak Company.

Other organizations cooperating in the high school science project include local schools, Science Clubs of America, the American Chemical Society, Engineering Society, Optical Society of America, Photographic Society of America, Burroughs-Audubon Nature Club, the Rochester Academy of Science, the Chamber of Commerce and Junior Chamber of Commerce, Rochester Park Bureau and the University of Rochester. Dr. Robert L. Roudabush of Ward's Natural Science Establishment is chairman of the committee of scientists, industrialists and educators planning the program.

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PHYSIOLOGY-GENETICS

Footstrain Traced to Evolutionary Deformity

► A HIDDEN form of a common deformity of the foot which can be traced back to man's primate ancestors is often the cause of footstrains in women, reports Dr. Frances Baker, of the University of California Medical School.

The common deformity is known to doctors as metatarsus primus varus, in which the position of the bones of the instep causes an obvious inturning of the big toe. Often this is accompanied by metatarsus varus, which is an inturning of the whole forefoot.

However, Dr. Baker time and again found footstrains in women who did not have an obvious case of an inturning big toe. Looking for the cause, largely with the help of X-rays, she found that

the deformity of the bones of the instep can occur without the tell-tale inturning big toe.

Women who have either of these deformities find it difficult to wear high heels with comfort. High heels put a general strain on the whole posture, cause foot strain, calluses, bunions, and other pedal ailments.

If the secondary changes have not become marked, Dr. Baker states, the situation can be remedied when such women wear broad, flat shoes such as wedgies and sandals. The barefoot effect this gives enables the foot to go where it likes.

Dr. Baker explains the deformity as being a slight failure of evolution in some families. The inturning of the big toes was accentuated in man's primate ancestors. When man began standing upright his foot began adjusting to this position; thus the modern "normal foot" has no inturning of the big toe.

Men, of course, are subject to the same deformity, but the complaints are less because men generally wear broad, flat shoes. High heels, in themselves, Dr. Baker adds, will not necessarily cause foot strain.

The deformity can be corrected in the growing foot of a young baby, the physician states.

Of 207 female patients, Dr. Baker found 75% of foot strain was caused by one of the two conditions.

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WILDLIFE

Five Golden Eagles Kill One Antelope with Talons

► EAGLES are able to kill animals as large as antelope, Robert W. Lehti of the Colorado Game and Fish Commission reported in the *Journal of Wildlife Management* (Oct.) Although he did not see the actual kill made, he recently surprised five golden eagles about to begin their feast on the carcass of a doe antelope, so freshly dead that it was still warm, and gave off steam when he made an opening into its body cavity.

The dead animal's back showed marks as if it had been peppered with buckshot; these were talon wounds. Its tracks in blood-sprinkled snow showed that it had raced for half a mile after the first terrifying attack. Mr. Lehti calculates from this that it took the eagles one and one-half minutes to kill their quarry. Absence of death-struggle traces in the snow indicated that death had come instantly, probably when a talon penetrated the spinal cord.

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GENERAL SCIENCE

Scientific Film Makers Form New Organization

► THE world's movie producers who make films about such glamorless subjects as bacteria and the inner workings of the human body have formed a new international organization.

Films which you will not find showing at your neighborhood theater but which drew attention from the makers of scientific movies at an international meeting in Paris included a Swiss film on the operation of the electron microscope, a South African movie on bacteria and an American color film showing the growth of a lung tumor inside a living patient.

Constitution for an International Scientific Film Association was adopted at the meeting by movie makers from 20 countries. The Association is planned as an international clearing house for scientific films produced in different countries.

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ELECTRONICS—PHOTOGRAPHY

Math Data Can Be Kept Permanently by New Device

► A NEW device dubbed a "photographic memory" was revealed by the Eastman Kodak Company. It is for use in making permanent records of all figures passing at high speed through a giant electronic calculating machine being constructed by the Massachusetts Institute of Technology for the U. S. Navy.

Mathematical data, fed into the calculating machine at perhaps a thousand numbers of 12 digits each per second, are recorded on a photographic motion picture film by means of a complex photographic, electronic and optical arrangement. Records are made in tiny square spots. After the film has been developed, the information can be fed back into the calculator for further computations.

The data spots representing the digits appear first on the face of a cathode tube that resembles the screen of a television receiver. The camera makes a record of these spots by means of a moving electronic beam within the tube. In feeding the information back from the film to the computer, the data spots are projected onto photoelectric tubes. These tubes in turn, supply electrical signals, corresponding to the numbers recorded, to the calculator.

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