



➤ **STICKLEBACKS** are small fish with sharp spines sticking up on the back. These spines vary in number from two or four to nine, depending on the species.

The stickles bristling from the fishes' backs have a distinctly thorny and belligerent appearance. This is not a deception, since sticklebacks are not at all backward in using the spines as deadly weapons, especially during the breeding season.

This takes place during the spring and early summer. At this time the males take on bright nuptial colors with which to be-dazzle their future mates.

Full of confidence in the magnetism of his new courting colors, the male first sets to work building a home. Properly speaking, it is not a home but a love nest, for it is destined to be no more than the transitory hideaway where a stickleback brings to fruition his midsummer madness.

Transitory or no, the male builds the nest with extreme care. Bits of roots and stems of aquatic plants are his building blocks, and for mortar he uses a sticky substance secreted in his kidneys which he wipes off by swimming against the part to be cemented.

The nest so constructed is barrel- or muff-shaped. The fish constantly tests the strength of his structure, butting against it here and there, reinforcing any section that dissatisfies him. To secure the nest he scoops up sand in his mouth and scatters it about the floor of the nest.

When the nest is finally just the way he wants it, possibly after as much as several days' steady work, the stickleback goes in search of a mate. When he finds one, he leads her to his nest and then either gently coaxes or rudely pushes her inside. There she lays her eggs and swims off, and the male promptly fertilizes them.

And then with the same singlemindedness that has characterized all his actions up to now, off he goes to find another mate, to repeat the cycle again, and again, and possibly still again, until there are enough eggs to satisfy his yearnings for parenthood.

From then on until the small fry are

big enough to fend for themselves, Mr. Stickleback keeps an endless vigil. He circles the nest, keeping it in repair, and violently attacking any other fish, large or small, that ventures in the vicinity.

Even after the eggs hatch out, he continues the watch, keeping the tiny offspring

in the nest, warding off all dangers. It is only when the young sticklebacks have become strong swimmers and stand some chance of eluding capture that the sentinel indifferently takes leave forever of the family he strove for so ferociously.

Science News Letter, July 15, 1950

#### MEDICINE

## Hormones for Arteries

➤ **CORTISONE** and **ACTH**, the two hormones that have brought dramatic results in arthritis, now show promise in two artery diseases, periarteritis nodosa and cranial arteritis.

Seven patients given one or the other of these hormones all got "prompt subjective relief," Drs. Richard M. Schick, Archie H. Baggenstoss and Howard F. Polley of the Mayo Clinic reported to the American Heart Association in San Francisco, Calif.

The two diseases are inflammatory conditions of the walls of arteries. The fever which comes with this condition subsided in 24 to 72 hours after the patients were given cortisone or ACTH. Blood sedimentation rates, elevated in the disease, decreased to normal but more gradually than

the temperature.

Partial relapses occurred in five patients after the hormones were stopped. The other two are still on their first course of treatment.

Two of three patients who were critically ill died of heart and kidney failure, though they improved at first. The other has severe and progressive high blood pressure. Autopsy examination of the two who died showed complete healing of all the diseased places on the arteries, but in the process of healing, the arteries were closed by fibrous tissue formation. This caused widespread damage to internal organs deprived of their blood supply when the arteries were closed.

Science News Letter, July 15, 1950

#### MEDICINE

## Female Growth Hormone

➤ **A LITTLE** known hormone has demonstrated the ability to stimulate body tissue growth without producing whiskers and other masculinizing effects in women.

The hormone, a steroid called methyl androstenediol, may prove to be widely useful in the treatment of diseases occurring in women which are accompanied by a general wasting of body tissue, such as Simmond's disease and rheumatoid arthritis.

Discovery of the growth-producing properties of the hormone was reported to the meeting in San Francisco, Calif., of the Association for the Study of Internal Secretions by three University of California Medical School physicians, Dr. Gilbert S. Gordon, Dr. Eugene Eisenberg, and Dr. Henry D. Moon.

Physicians have sought a hormone with the properties of methyl androstenediol for many years. Testosterone has been used successfully in tissue building, but its use has been limited by its undesirable side effects, particularly masculinization in women. The growth hormone, while very effective in rats, does not appear to promote growth in man in its present form.

As a step in the search by the University of California group, Dr. Eisenberg developed a test for quickly measuring the tissue-building properties of compounds. He found that the levator ani muscle is an accurate indicator of growth promotion.

This muscle is undersized in castrated animals. If a compound injected into cas-

trated animals has growth-promoting properties, the muscle increases in weight.

When castrated animals were given the hormone for as long as a week, it was found that this muscle was restored to normal or greater than normal weight. Moreover, there were no apparent sexual side effects of the hormone.

The hormone has been tried on human subjects, and preliminary results indicate that the compound has similar results in man.

Science News Letter, July 15, 1950

#### PHYSICS

## Cosmic Rays from Sun? Chicago Tests to Tell

➤ **EVIDENCE** that the powerful cosmic rays bombarding us from outer space do actually come from the sun may result from research.

Dr. Marcel Schein and J. J. Lord of the University of Chicago are studying how the intensities of some of these cosmic rays change during 24 hours. He finds that bombardment by heavy nuclei of low energies is much more frequent during the day than at night.

If this same finding applied to heavy nuclei of higher energies as well, the theory that cosmic rays originate from the sun would be substantiated.

Science News Letter, July 15, 1950