ICHTHYOLOGY-AAAS

Fish Found To Possess Acute Sense of Smell

➤ FISH have an acute sense of smell. They can tell the difference between the scents of underwater plants even more sensitively that you can tell the difference between rose and violet perfumes.

At the meeting, T. J. Walker, University of Wisconsin zoologist, told of experiments in which he demonstrated how well fish smell. He arranged an aquarium in which two currents of water could be circulated without becoming mixed. Thus it was possible to introduce simultaneously water in which two different species of waterplants had been washed, and let the fish choose between their respective scents.

The minnows used in the tests were trained to prefer certain plant-scents by rewarding them with food when they swam into their areas. They also were trained to shun others by giving them slight electric shocks when they swam towards them. The majority of the fish used became rather discriminating after a suitable training period.

The water samples in which various aquatic plant species were washed were all scentless to human nostrils, but the little fish knew the difference even when they were greatly diluted.

Mr. Walker suggested that it might be possible to use similarly trained fish to detect traces of contaminating substances in water that seems all right to ordinary examination and chemical tests.

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ICHTHYOLOGY-AAAS

Fish Yield of Streams Increased by Fertilizer

➤ DISSOLVING farm fertilizer in a running stream would seem at first blush to be sheer waste. But it is not; bread cast thus upon the waters returns presently in the form of fish.

At the meeting Dr. A. G. Huntsman of the Fisheries Research Board of Canada and the University of Toronto told of the first attempt to increase the fish yield of running streams by use of fertilizer.

The experiment was stimulated by observations that salmon, as well as the water organisms they feed on, were more abundant below a cattle ford on a certain shallow stream in Nova Scotia. In one test, fertilizer was simply scattered on the water; in three others, bags of fertilizer were so placed that their contents would slowly dissolve.

In all cases a notable increase in the number of fish took place. There was a kind of house-that-Jack-built sequence. The fertilizer brought about a heavy increase in the simple water plants known as algae. Insect larvae that feed on algae then increased. Increase in numbers of minnows followed. Finally, the big fish that eat little fish also multiplied.

Science News Letter, January 10, 1948

NUTRITION-AAAS

Iron Absorption Increases With Vegetable Intake

➤ IF YOU have to take iron as a medicine, eat some fruit or fresh vegetables at the same time. That seems to be the practical conclusion pointed to by experiments reported by Prof. Ernest R. Kirch and associates of the University of Illinois. Iron compounds were reduced to the chemical state best fitted for absorption into the system when fruits and vegetables were added to the solution. Next in efficiency in making the iron absorbable were egg white, meat and bread. Milk and egg yolk had little effect.

Science News Letter, January 10, 1948

BIOCHEMISTRY

Asparagus Has Weapon For Fight Against Germs

➤ ASPARAGUS and an anti-war gas chemical are the latest additions to germ fighting weapons, it appears from reports to the journal, *Science,* (Dec. 26).

The anti-TB germ activity of streptomycin and subtilin are stepped up by the anti-war gas chemical, BAL, Drs. Hamilton H. Anderson and Yin-Ch'ang Chin of the University of California Medical School report.

Asparagus contains a substance called quercetin which stops the growth, and therefore the poison production, of the botulinus organisms, Drs. A. A. Andersen and J. A. Berry report from the U. S. Department of Agriculture's Western Regional Research Laboratory at Albany, Calif.

This discovery followed the Agriculture scientists' finding that although asparagus is attacked by many germs that spoil vegetables, it is a poor medium for the growth of the botulinus organism, cause of many a case of fatal poisoning.

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IN SCIENC

AGRICULTURE-AAAS

Milk-Fed Vegetables Have Increased Yield

➤ MILK-FED vegetables can be expected presently to join milk-fed chicken and milk-fed veal on our tables—or maybe replace them, if present meat price trends continue. Drs. V. E. Iverson and L. H. Johnson of Montana State College told the meeting how they had markedly increased the yield of tomatoes and onions by adding buttermilk and skimmilk to the soil, either alone or in combination with commercial fertilizer.

Not only were the yields increased but the soil was left in better condition, both physically and chemically, after the tests.

These experiments point to possible profitable use for low-value dairy products in butter-making areas where marketing buttermilk and skimmilk cannot be handled at a profit. This use of milk products is of course quite different from the "fattening" of pumpkins and squashes by feeding milk into them through a wick. This is done mainly as a "stunt," and in any case could hardly be carried out on a mass-cultivation basis.

Science News Letter, January 10, 1948

BOTANY-AAAS

Experiments Show Camphor Can Be Grown in U. S.

➤ CAMPHOR, necessary in both medicine and industry, can be successfully grown in the United States as far north as Boston, thus rendering America independent of the easily-cut-off source of natural camphor on Formosa Island off the China coast, Prof. Heber W. Youngken and William E. Hassen, Jr., of the Massachusetts College of Pharmacy indicated in a report.

The new potential source of homegrown camphor is not the camphor tree of Asia but a shrubby bush from Africa known as the camphor basil. It grew well and healthily as an annual crop when planted in lightly-limed Massachusetts soil. Dried leaves and flowering tops harvested in late October yielded 2.5% of oil and 2.54% of camphor.

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E FIELDS

EMBRYOLOGY-AAAS

Cancer and Embryo Growth May Be Related in Fish

➤ SIMILARITY between cancer or tumor growth and the rapid growth of embryos, or unborn young, has often been commented on by scientists. That such growth is not only similar but perhaps related was demonstrated in experiments reported by Dr. Paul S. Galtsoff and Eugenia Galtsoff of the U. S. Fish and Wildlife Service, College Park, Md.

Into the bodies of toadfish, a non-commercial species common in shoal coastal waters, they implanted embryo fish of the same species. Later, when the specimens were killed and dissected, they were found to contain tumors, some of which resembled sarcomas and other malignant growths. The implanted embryos, too, had suffered: they had lost their eyes, their nervous systems had degenerated and general physiological anarchy had set in.

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ASTRONOMY-AAAS

Huge Flares of Hot Gas Shoot from Double Star

➤ FLARES of hot gas, similar to the great flaming prominences that rise from the sun but much more enormous, have been discovered to shoot out from the double star, RS Canum Venaticorum.

But strangely enough, these flame-like clouds of gas, instead of bursting forth in all directions, rise only from a small area facing the bright companion star, and possibly on the side directly opposite, Dr. W. A. Hiltner of Yerkes and McDonald Observatory of the Universities of Chicago and Texas stated at the meeting.

The eclipsing binary is composed of two stars, each about twice as massive as the sun. The brighter member of this whirling team has a radius 1.6 times that of the sun; the radius of its companion is 5.4 times as large as the sun's.

When the brighter, smaller star is eclipsed by its companion, for observers on earth it loses 70% of its light. When the same star passes in front of its larger and fainter companion, there is little change in its apparent brightness.

The double star's peculiar actions, however, were discovered when the brighter star passed in front of its companion. The total disappearance of one of the bright lines in the star's spectrum gave away its secret.

By measuring the wavelength of the calcium emission lines of the star's spectrum, Dr. Hiltner stated, we know that this light comes from the large secondary star. If the luminous gas responsible for this calcium line were distributed uniformly over the surface of the large star, its brightness would be changed only 10% as the smaller star passed in front. But the line completely disappears.

The calcium atoms with one electron removed, responsible for this bright line in the star's spectrum, thus must be clustered together in a small area, a region that is completely hidden by the smaller star during an eclipse.

To date, great flaming prominences have been detected on several double stars. This star, however, is much brighter than those previously investigated and thus more could be learned about it.

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GENETICS-AAAS

Bikini Radiations Cause Changes in Cotton Plants

➤ ATOM-BOMB radiations struck a small packet of cotton seeds exposed on the deck of one of the Bikini test ships. Last summer, plants grown from those seeds developed abnormalities, internal and external, Dr. Meta S. Brown, cytologist at the Texas Agricultural Experiment Station, told fellow-scientists at the meeting.

Most of the changes from normal were internal, and consisted in dislocations, or even total destruction, of the heredity-bearing chromosomes. This can be very serious, even when it does not show in the first generation grown from the seed; for these changes are passed on into succeeding generations and abnormalities may show up later. And what happened to a cotton seed might happen to a man.

At least one of the plants did show a marked change from the appearance of others from the same lot of seeds. It was stocky, low and bushy, without the long upreaching ends on most of its branches that normal cotton plants of the same strain show.

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ASTRONOMY-RADIO

Radar Mirrors Aid Study Of Radio Noises from Sun

See Front Cover

➤ THE sun is attacking the earth with hissing and popping noises. The Bureau of Standards is starting out to investigate these radio noises originating in the sun. Two giant radar mirrors are being set up for this study at the radio propagation laboratory in Sterling, Va. These solar noises are becoming increasingly important with the use of higher and higher frequencies in communication and radar equipment.

These radio waves sent out by the sun may prove useful in many ways. A radio sextant might be built, for instance, that would use solar noise to determine the position of a ship at sea. Ships could thus navigate by the sun despite overcast skies.

Frequencies and intensities of solar radio waves are to be investigated and the actual sources of these waves determined as closely as possible with two giant radar mirrors measuring about 25 feet in diameter. These mirrors, which will be automatically directed toward the sun during the day, as shown on the cover of this week's SCIENCE NEWS LETTER, can capture a large amount of energy from the solar broadcasts.

Radio waves constantly pouring out from the sun, interfere with reception of broadcasts over very-high and ultra-high frequency receivers. They are heard as short "puffs" and "swishes" that last a second or more. Sometimes these "swishes overlap, resulting in an irritating grinding noise which may cause streaking on a television screen and picture jumpiness.

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BIOCHEMISTRY-AAAS

Plant Growth Substances Speed Mosquito Hatching

➤ POSSIBILITY that at least some insects are aided by the growth-promoting substances, or hormones, of plants was pointed out by Dr. Albert Abdel-Malek of the Ohio State University. He experimented with one species of mosquito, which passes the winter in the egg stage. He found that a blue-grass infusion encouraged egg hatching. Later, he obtained a similar result with low concentrations of three synthetic growth hormones: naphthalene acetic acid, indole butyric acid and indole acetic acid.

Science News Letter, January 10, 1948