

## Mother of a Million

MINNESOTA has a grand old fish, one that is recognized by officials of the State Game and Fish Department by a large silver spot in front of her dorsal fin and named Old Silverspot because of it. When first she made her appearance in the nets of the Bemidji Hatchery she was a slim little thing weighing 12 pounds. Now, she is a fat old lady, tipping the scales at 25 pounds, and estimated to be the mother of a million fish. As a grand-mother, her descendants are almost countless.

For ten years, this wall-eyed pike was caught annually in the nets of the State hatchery, stripped of her eggs, and returned to Minnesota waters. One stripping alone netted close to 300,000 eggs, and from them were hatched 297,000 baby pike.

Then, during 1928 and 1929 she was not seen at the hatcheries, and was bemoaned as the victim of some fisherman, or of old age. But this year mourning for Old Silverspot turned to joy when word was long-distanced to hatchery officials that she was alive and well, taken in a net near Cass Lake. They rushed to the scene and found her swimming lazily in a tub. This time her picture was taken, to preserve her record should she not return again.

Back in 1923, Sheridan Greig, at that time in charge of the Bemidji Hatchery, decided that this particular fish should have service stripes and so punched a hole in her fin tail. This in no way injures her nor interferes with her swimming.

*Ichthyology*

*Science News-Letter, September 20, 1930*

## Gland Product in Cabbage

A NEW substance formed by the suprarenal glands and also found in cabbage and certain other common fruits and vegetables has just been reported to the magazine *Science* by Dr. Albert Szent-Györgyi of the Mayo Foundation in Rochester, Minn.

The new substance is called hexuronic acid. It is related to the starches and sugars, is an extremely active acid, and plays the central role in the breathing system of the cabbage. It is unable to prolong animal life although it comes from that part of the suprarenal gland which is essential to life.

Apparently this gland forms four specific substances. One of these is nalin, formed in the medulla of the gland. This part of the gland also

elaborates a substance similar to the newly discovered hexuronic acid which is formed in the cortex of the gland. Finally there is probably a fourth active principle, found in the cortex. This is evidently a vital substance.

Hexuronic acid prevents the formation of pigment or coloring in certain systems of pigment formation. Thus it is found in lemons, oranges, cabbages and similar fruits and vegetables which do not discolor when injured and exposed to air or oxygen. It is not present, for example, in bananas, apples or potatoes. Absence of this acid may be responsible for the discoloration of the skin which occurs in Addison's disease, a condition due to injury to or disease of the suprarenal glands where hexuronic acid is formed.

Dr. Szent-Györgyi gave hexuronic acid to two patients suffering from Addison's disease; with beneficial results. However, the patients were not restored to full activity, he reported.

*Medicine*

*Science News-Letter, September 20, 1930*

## Sweaty Hands

BESIDES its familiar function of cooling the body, sweat serves as a preventive of chapped hands and feet, Prof. Yas Kuno, physiologist of the University of Manchuria, has discovered.

Unlike the other parts of the body, the palms of the hands and the soles of the feet sweat continuously, without waiting for the thermometer to climb to summer heights. Only in the extreme cold do the sweat glands in these portions of the body stop functioning and allow the skin to dry and chap.

Sweaty hands and feet also have a firmer grip. Workmen sometimes even wet their hands to help them hold a heavy tool but for ordinary activity nature has provided the necessary moisture.

Sweating hands probably date back to man's four-footed days and helped man's ancestors make a safe escape in flight. This was suggested by the fact that sweating of the hands and feet is greatly stimulated by conditions of mental stress, though unaffected by heat as are other portions of the body. Prof. Kuno made his students sweat copiously on the palms by giving them problems in mental arithmetic. There is a saying in Japanese, "with sweat in the clenched hands" which means "with suppressed excitement."

*Physiology*

*Science News-Letter, September 20, 1930*

# IN VARIOUS S

## Plants Make Limestone

LIMESTONE, or what will eventually be limestone, is manufactured in thousand-ton lots in shallow lakes in the Middle West. So much is indicated by researches conducted by Prof. H. A. Schuette and Hugo Alder of the University of Wisconsin and the Wisconsin Geological and Natural History Survey at Madison, Wisconsin.

The two chemists analyzed quantities of Chara, a water-weed that grows freely in the ponds and lakes of limestone regions. Its stems and leaves are harsh and rough to the touch, indicating the presence of considerable quantities of minerals. The analyses showed the sand-free, air-dry plants to contain over 41 per cent. of ash, of which the larger proportion was calcium carbonate, captured out of solution in the lake water.

In the lake where the analyzed samples were collected, about half the mass of the yearly crop of aquatic plants is accounted for by Chara. With this as a basis, Prof. Schuette and Mr. Alder calculated that this one plant yearly returns to the bottom of this lake something like a thousand tons of calcium carbonate.

*Geology*

*Science News-Letter, September 20, 1930*

## Rays from Potassium

THE COMMON chemical element potassium gives off gamma rays similar to X-rays or the gamma rays of radium. At the State Radiological Institute, Prague, Dr. F. Behounek has confirmed the researches of Dr. W. Kohlhörster which gave evidence of these rays from potassium about two years ago.

Dr. Behounek finds that potassium chloride really emits gamma rays, the intensity of the rays being proportional to the amount of potassium. He also finds that there are two groups of gamma rays, one about as penetrating as the similar rays from radium, the other about twice as penetrating. However, their intensity is very low, so that very delicate apparatus is needed to detect them.

*Chemistry*

*Science News-Letter, September 20, 1930*

# CIENCE FIELDS

## Fire Fighting Ants

**B**IG black ants are among the world's most expert fire-fighters, is the conclusion of Ranger F. S. Garl, of Yosemite National Park. Ranger Garl believes that human beings might find it worth-while to study the tactics of the ants.

Describing one blaze, caused by a lighted match near a big black ant hill, Ranger Garl said that about 50 ants started promptly for the fire and jumped right into it, kicking and biting. Meanwhile other ants kept on with their work.

Then a lighted cigarette was thrown near the match, and a larger force of ants hastened to the scene and destroyed the cigarette. Some of the heroic little firemen were burned to death, or so badly burned that others killed them. But for every ant disabled, another took its place. After the fire was out, other ants were sent to pick up the fallen.

Throughout the emergency, lasting half an hour, the fire was fought in the most orderly manner, attesting to a highly efficient organization, Ranger Garl said.

*Entomology*

*Science News-Letter, September 20, 1930*

## Prussia's New Bird Laws

**N**EW AND uniform protective laws for birds and wildflowers have been enacted by Prussia, revising and replacing the old codes that obtained in the various provinces of the state, which were frequently at variance with each other. The new laws specify what game birds may be hunted and when, they list thirteen "outlaw" species that may be killed without restriction at any time, and they give all the rest of the bird population the benefit of an absolute closed season.

During the proper open seasons the following birds may now be hunted in Prussia: wild ducks, wild geese, osprey, most of the quail family, sandpiper, curlew, snipe, gulls, terns and pigeons. Outlaw birds include several hawk species, all crows, sparrows, grebes and herons. Certain birds, like ospreys and kingfishers, that are protected generally may still be shot if necessary for the protection of fishponds.

There will be no more bounties paid

for the destruction of predaceous birds. Bird lime and traps or other devices for catching or injuring birds must not be used, and birds must not be hunted with the aid of artificial lights.

Certain wild animals that destroy birds, but also prey on troublesome rodents to an even greater extent, are given absolute protection. Notable among these are wildcat, pine marten, mink and dormouse.

The new list of prohibited plants contains thirty names, mostly of species which have been subjected to destructive collecting by dealers. In some cases very common and popular wildflowers, such as lily-of-the-valley, snowdrop and hepatica, may be gathered for bouquets, but their roots or bulbs must not be disturbed.

*Game Conservation*

*Science News-Letter, September 20, 1930*

## Why Delinquent?

**P**SYCHIATRISTS who probe into the minds and the conduct of delinquent boys and girls should not fail to look into the families that those boys and girls live with, is the belief of Dr. Bryant E. Moulton, of the Judge Baker Foundation of Boston.

"Very frequently, more psychiatric work should be done with the family than with the child to get any lasting results," Dr. Moulton stated. "Many of our transient cures upon which we spend considerable time would have been permanent if the family background had been altered."

One ten year old boy who was sent to Dr. Moulton had a persistent tendency to run away. The root of this desire was found only when home conditions were investigated, and it was shown that the child was overwhelmed by the sense of family insecurity. His father was employed very irregularly, and there was much anxiety and agitation about making ends meet, with frequent scraps between father and mother over the payment of bills. Such conditions alarm and depress a child by the feeling that the home is insecure, and the child's reaction may take various forms which neither he nor the parents understand, it is found.

Ignorance on the part of parents, also prudishness, fanaticism, are so common that they are frequently overlooked as contributing causes of a child's strange or unsocial behavior, Dr. Moulton explained.

*Psychiatry*

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## Kitchen In Pompeii

**P**OMPEII and Herculaneum, most famous of tragic cities, are still showing the modern world new evidences of what everyday life was like two thousand years ago. The new policy of excavators at Pompeii is to leave everything where it is found, if possible. The cooking stove shown on the cover of this week's *SCIENCE NEWS-LETTER* is at a home in the Street of Abundance

Grace and variety of form mark the pots and cooking utensils that accompany the old stove. Obviously, kitchen work in these Old World cities was made pleasanter by the artistry of the tools.

"The taste and skill of the metalworkers of Herculaneum and Pompeii is almost beyond belief," declares Arthur S. Riggs, editor of *Art and Archaeology*, who has just returned from the scene of present excavations. "Every cooking utensil even was given its peculiar touch of beauty as well as useful form. Sauce-pans, skillets, pitchers, cups, ladles, lamps, knife handles, chains, everything of bronze or copper for use about stove or sink, was lovingly worked into designs whose grace is only to be equaled by the most highly skilled silversmith work of the present. There were evidently no "Five and Ten" stores in Herculaneum at which housewives could buy cheap kitchenware."

*Archaeology*

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## New Standard for Paper

**W**HETHER she is writing her love notes on paper that will outlast her life or on sheets that will crumble in a few brief years will be information supplied gratis with stationery purchased by romantic maids—and everybody else, for that matter—if a suggestion made by B. W. Scribner to the American Society of Mechanical Engineers, is adopted.

Paper is now graded on a basis of fiber quality but this gives no clue to its aging qualities, which are extremely important in all papers except those for temporary use.

If such a classification were adopted it would be possible to buy papers according to the purpose intended: (1) Permanent papers, (2) papers having a minimum life of 100 years, (3) papers having a minimum life of 50 years, and (4) papers for temporary use.

*Standards*

*Science News-Letter, September 20, 1930*