

EVOLUTION

**Man's Grooming Activities
Linked with Apes' Habits**

WHEN you feel an overpowering impulse to pick a loose thread off someone else's coat, even if he is a total stranger to you, you needn't be ashamed of it, unconventional though the action may be. For you are only acknowledging your ancestors.

Grooming, the activity we see in the monkey cage when its inhabitants go carefully over each others' fur, picking out thorns or parasites, smoothing down hair, and in general making neighbors pretty, is a basic action pattern in all the primates from the lower monkey-like mammals up to man himself. So declared Prof. Robert M. Yerkes of Yale University, speaking before the Sixth International Congress of Genetics in Ithaca.

Prof. Yerkes' investigations have convinced him that the grooming habit is inborn and hereditary, rather than something which one monkey (or man) learns from another. He cited the case of a young chimpanzee kept isolated from all its kind from infancy onward, which nevertheless developed the grooming tendency, in support of his belief.

In man, the grooming tendency has the most complex expressions. "The activities of barber, hair dresser, nurse, physician, surgeon, find their recognizable counterparts or fundamentals in the grooming behavior of the chimpanzee," said Prof. Yerkes.

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BIOPHYSICS

**Harmful Ultraviolet Rays
Do Not Penetrate Seed**

ULTRAVIOLET rays of shorter wavelength, usually regarded as harmful to living things, cannot penetrate the outer coats of seeds. But those of longer wavelength, which have a stimulating effect, pass through.

This has been determined in preliminary experiments by Drs. Charles A. Shull and Harvey B. Lemon in the plant physiology laboratory of the University of Chicago. They made use of seed coats from corn, peach kernels and cocklebur seeds, stretching them out in front of the slit of spectrograph and focussing ultraviolet rays, filtered to known wavelengths, upon them. The fractions of the radiation that passed

through were recorded on photographic plates. The results apparently indicate that seed coats protect their living contents against harmful ultraviolet radiations but let in those having stimulating effects.

Dr. Shull calls attention to the tendency of some experimenters to use unfiltered ultraviolet, regardless of the fact that they are thereby mixing long and short wavelengths, which have opposite effects and therefore tend to cancel each other out, or if one or the other predominates, its effect is diminished by the extent to which its opposite is present. He suggests the desirability, in all biological experiments, of controlling wavelengths by means of filters, and also of knowing the penetrating power of the radiations used.

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ARCHAEOLOGY

**Spots on Pottery Show
What Earliest Crops Were**

BLACK SPOTS of carbonized material, scraped off two broken pieces of Stone Age pottery, have shown that the grain raised by the first farmers in Germany was emmer, a species of wheat whose native land is in western Asia.

The discovery was made by Prof. Johannes Grüss of the University of Berlin, well known for his microscopic researches into remains of food and drink in funeral feast vessels found in Egyptian tombs. In the present instance he had something even older, for the pottery fragments were prehistoric, belonging to the very earliest part of the New Stone Age, only a little while after man had learned to make pots at all.

Prof. Grüss carefully scraped a black powder off the unpromising black spots on the potsherds, treated it with chemicals and examined it with his microscope. Cell walls unmistakably identifiable as the remains of emmer showed up in its field.

With the grain fragments Prof. Grüss also found carbonized wood cells, which he identified as spruce. He deduced that the pot from which the fragments had come had sat in some Neolithic hut fire and had boiled over, the mush or broth of ground-up emmer it contained running down its sides to blacken in the fire. He was able to produce approximate duplicates of emmer cell skeletons by grinding up wheat, making a paste, and heating the latter on a glass slide over a laboratory burner.

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IN SCIENCE

ENTOMOLOGY

**Even Tiny Insects
Afflicted With Tumors**

TUMORS are an affliction that visit small as well as great. Even tiny insects may have them.

At the meeting in Ithaca of the Sixth International Congress of Genetics, Prof. Mary B. Stark, of the New York Homeopathic Medical College and Flower Hospital, told of her studies on two types of tumors that appear in *Drosophila*, gnat-size insect famous for its use in many genetics experiments, though more familiar to most of us as a buzzer around fruit stands.

One of the tumor types, Prof. Stark said, is invariably fatal. It attacks the grub or larval stage of the insect, and brings about death before it can become an adult. It attacks only males.

The other type of tumor appears in both males and females, and is quite "benign," never causing death. The insects do not even appear to be seriously inconvenienced.

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GENETICS

**Chickens Bred To
Resist Typhoid**

A STRAIN of chickens with a high degree of resistance to fowl typhoid, a bacterial disease highly fatal to most flocks when it gets loose among them, has been developed at the Iowa Agricultural Experiment Station, Dr. W. V. Lambert of Ames told the Sixth International Congress of Genetics at Ithaca.

The new resistant fowls were obtained by a drastic method. Chicks were deliberately given the disease, and the stocks that it failed to kill were used for breeding. After five generations of such crucial selection, a breed has been obtained of which less than 10 per cent. die of fowl typhoid, while a comparison group of non-resistant chicks dies off to the extent of 85 per cent. It is hoped by further selection to bring the resistance to a still higher level.

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E FIELDS

ASTRONOMY

British Astronomer to Talk Over American Radio Chain

SIR ARTHUR S. EDDINGTON, the well-known physicist and astronomer of Cambridge University, England, will deliver three addresses in the United States during September over nationwide radio networks.

His subject for the three is "Our Changing Universe" and it is expected that during the first, from 8 to 8:30 p. m. E.S.T., Thursday, September 8, he will discuss results of observations of the eclipse. The other two are scheduled for September 15 and 22 at the same hour. Stations of the National Broadcasting Company will be used.

While in this country Sir Arthur will observe the eclipse and attend the meeting of the International Astronomical Union in Boston.

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GENETICS

Pituitary Gland Secretion Causes Milk Production

MILK was produced in the mammary glands of experimental animals—even including males—when a newly isolated extract of the anterior lobe of the pituitary gland, considered to contain a new hormone which has been named "prolactin," was injected into their bodies. The experiments leading to this result, which is expected to have much clinical importance, were performed at Cold Spring Harbor, N. Y., by Dr. Oscar Riddle, Dr. Robert W. Bates and Simon W. Dykehorn of the department of genetics of the Carnegie Institution of Washington. The same hormone also causes the production of pigeons' "crop milk," with which they nourish their young.

The anterior part of the pituitary gland, a small body nestling on the under side of the brain, has already been shown to produce two important hormones or internal secretions. One of these is important in governing the body's growth rate, while the other stimulates the activity of the sex glands. The importance of the pituitary gland

in the production of milk was already known, but it had been assumed that one of the two hormones already discovered was responsible for this, and only the finding of the new third hormone has changed this belief.

Female guinea pigs and rabbits injected with prolactin began the production of milk immediately. The secretion of milk in the mammary glands of male guinea pigs was made possible only after the animals received a preliminary injection of another hormone derived from the sex-glands of female animals.

These new results were greatly facilitated by the earlier studies of Dr. Riddle and Miss Pela Fay Braucher who found, a year ago, that the crop-gland of pigeons forms and functions under the influence of some substance produced in the anterior pituitary gland.

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ZOOLOGY

Water Animals Can Absorb Food Through Their Skin

ANIMALS living in the water can absorb dissolved and suspended food materials through their skins, gills and other surfaces in contact with the water. So concludes Dr. E. Harold Hinman of Tulane Medical School, in a study presented through the *Quarterly Review of Biology*.

The question of water animal's ability to get nourishment in this way has been hotly debated by biologists ever since early experiments by a German physiologist named Pütter indicated that they could. The first re-testings of Pütter's theory failed to confirm him; but during recent time animals ranging from mosquito larvae to frogs have been given a chance to "soak in a living through their skins," and in many cases they have been able to do it.

Dr. Hinman's experiments have been conducted mainly on mosquito larvae reared in water that had been put through a filter so fine that it strained out even the bacteria. The infant insects therefore had no solid food whatever, and had to subsist entirely on what supplies they found dissolved or suspended in the water. In common with several other researchers who used more or less similar methods, he found that they could do so. Dr. Hinman is of the opinion that mosquito larvae so fed get their nourishment by absorption through their intestinal wall rather than through the skin.

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GENETICS

Fatherless Grasshoppers Produced in Laboratory

"THE BROOD of folly without father bred"—classic line of scorn addressed by John Milton to "vain, deluding joys," might now be equally well used against the grasshopper, Aesop's type and symbol of frivolity. For at the University of Iowa two zoologists, Eleanor H. Slifer and Dr. Robert L. King, have demonstrated that grasshopper eggs laid by unmated females can and often do hatch into insects that live and grow to full size. Such fatherless grasshoppers develop, somewhat more slowly than do normally sired insects, and they are always females.

Miss Slifer and Dr. King reported on the newly observed phenomenon at the meeting of the Sixth International Congress of Genetics at Ithaca.

Parthenogenesis, or production of young by unmated females, is very common among the lower groups of animals, including some species of insects. Aphids or "plant lice" produce generation after generation of females every year with never a male among them until fall comes. If a bee colony loses its queen, eggs laid by unmated queens or even by the usually "spinster" workers will hatch and develop; but all the bees thus produced are useless males, or drones.

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ENTOMOLOGY

Insect Larvae Make Mosaic Jewelry

See Front Cover

MANUFACTURERS of modern jewelry might well turn to the larvae of the caddis fly for effective models for small containers—tiny perfume bottles, say, or lipstick cases. These water-dwelling "worms" build mosaic coverings for the little cylindrical houses they spin for themselves, taking bits of sand and gravel from the streambed, and stopping the posterior ends with larger pebbles. These mosaic cases serve at once as camouflage and armor.

Artists of another group—designers of print goods—might also learn from the caddis fly larvae, as Cornelia Clarke has shown in arranging the group of nine shown on the cover of this issue of the SCIENCE NEWS LETTER.

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