

ENTOMOLOGY

Insects Can Hear Sounds Too Low for Human Ears

INSECTS can not only hear sounds too shrill for human ears to perceive, they can hear sounds too low-pitched for man to hear, as well. Certain kinds of crickets have a special hearing organ located at the rear end of the body, which is sensitive to very low-frequency vibrations, R. J. Pumphrey and A. F. Rawdon-Smith of Cambridge University have discovered. Locusts can hear super-shrill sounds by means of tiny bristles distributed all over them.

Messrs. Pumphrey and Rawdon-Smith did not depend merely on responses by the insects. They cut their heads off, connected the severed ends of nerves to highly sensitive amplifying hookups, and read responses to sound-stimuli as "kicks" of a pointer on a dial.

Science News Letter, July 25, 1936

MEDICINE

Varicose Ulcers Treated Without Hospitalization

A NEW method of treating varicose ulcers which appears more satisfactory than any treatment hitherto suggested is described in the *Journal of the American Medical Association* (July 11).

Twenty-six persons have been treated by the new method for this chronic condition after from one to thirty-seven years of suffering during which time all recognized forms of treatment had been tried on one or more of them. All except three were healed after treatments extending over periods of from one to twelve weeks.

Dr. Leslie Saylor of Topeka, Kans., and Drs. Joseph Kovacs, A. Wilbur Duryee and Irving Wright of New York City make the report to the medical journal. Their experimental work was done at the vascular clinic of the New York Post-Graduate Medical School and Hospital of Columbia University, aided by a grant from the Josiah Macy, Jr., Foundation.

During the new treatment none of the patients were put to bed or sent to a hospital. They continued their daily occupations of washing, ironing, cooking, chopping wood and selling real estate.

In treating the varicose ulcers, the doctors saturate a reinforced asbestos paper with a 0.5 per cent solution of acetyl-beta-methyl-choline chloride and wrap it around the patient's foot and

leg as high as the knee. A metal plate is placed over the wet asbestos paper and connected to the negative pole of a galvanic machine. The current is then turned on.

Half-hour treatments are given two or three times a week. The metal plates are never applied over the ulcerated area.

This form of treatment has especial value, the four physicians assert, in cases in which ulcers do not heal after the injection treatment for varicose veins or in cases in which injections are not to be recommended as, for example, with diabetes or phlebitis.

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ENTOMOLOGY

Ticks Starve Three Years But Are Still Alive

THREE years since they ate, but adult ticks put into bottles with no food supply on April 10, 1933, are still alive and peppy.

Dr. F. C. Bishopp of the U. S. Department of Agriculture points to the bottled ticks as good evidence that ticks are hardy pests, not necessarily routed when the animals they feed on are destroyed or driven out of an area in one season. Wood ticks, or dog ticks, spread Rocky Mountain spotted fever, a disease widespread and with high mortality.

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CHEMISTRY

Vacuum-Packed Milk Kept Fresh 42 Days

MILK kept fresh for six weeks, by a new method of vacuum packing, promises to revolutionize the dairy industry, if the technique is generally adopted.

The new method will be described in *Food Industries*, by Howard T. Greene, general manager of a large Wisconsin dairy firm that supplies the Milwaukee market.

The milk is put into ordinary milk bottles, but a tight metal cap with a gasket is used instead of the ordinary paper cap. Just before the cap is lowered into place and pressed home, live steam is introduced over the top of the milk. After the cap is sealed on, the steam is condensed, creating a partial vacuum.

Thus sealed, the milk will remain fresh for 48 hours at ordinary temperatures, or for six weeks if suitably refrigerated.

Science News Letter, July 25, 1936

IN SCIEN

METALLURGY

Make Metallic Manganese By New Cheap Process

BRIGHT sheets of pure metallic manganese are produced from low grade ores by a new process of leaching and electrolysis developed by the U. S. Bureau of Mines. Success came in the hunt for a simple and cheap process when an ingenious method of maintaining constant acidity of the electrolyte used was discovered. Large manganese deposits in reach of Boulder Dam power will be made available by the new government research.

Science News Letter, July 25, 1936

SEISMOLOGY

Chilean Quake Recorded At Eighteen Observatories

BUILDINGS and streets were demolished to the extent of \$500,000 damage, though no lives were lost, in an earthquake that rocked four towns in the province of Antofagasta, Chile, on Monday morning, July 13. The shock was recorded at no less than eighteen seismological observatories in North America and throughout the Pacific area. Data transmitted by wire and radio through Science Service were interpreted by the Jesuit Seismological Association and the U. S. Coast and Geodetic Survey. The epicenter was in latitude 24 degrees north, longitude 70 degrees west. Time of origin was 6:12.3 a.m., eastern standard time.

Stations reporting were those of Manila Observatory, Manila, P.I.; Dominion Observatory, Ottawa; Dominion Meteorological Observatory, Victoria, B.C.; Seismological Laboratory, Pasadena, Calif.; University of California, Berkeley, Calif.; St. Louis University, St. Louis, Mo.; University of Michigan, Ann Arbor, Mich.; Georgetown University, Washington, D. C.; Pennsylvania State College, State College, Pa.; University of Montana, Bozeman, Mont.; University of Alaska, College, Alaska; and the observatories of the U. S. Coast and Geodetic Survey at Chicago, Ill., Tucson, Ariz., Ukiah, Calif., Sitka, Alaska, San Juan, P.R., and Honolulu, T.H.

Science News Letter, July 25, 1936

CE FIELDS

ORNITHOLOGY

Storks Ride Airplane, Germany to England

HORSES riding in transport trucks still look odd; but a recent job of transportation from Germany to England must have looked much odder, had people seen it. It consisted in a shipment of 19 young storks sent by airplane from Rossitten, Germany, to Croydon airport.

The storks are intended for a scientific study of migration flight, when they are ready to go south next autumn. Five of the birds have been taken to Kent, the remainder to Scotland. When migration time comes, close observations will be made, to see what track they take toward winter quarters. Will they fly off in a bee-line, or will they insist on going back to their hatching place first, and then following the way of their ancestors?

Ornithologists do not know, so their watch will be all the keener.

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PHILOSOPHY

"Anaximandering," Coined From Name of Geographer

ANAXIMANDER was a Greek geographer, the first to draw a map of the known world. His purpose was to show the relations of the parts, to see what the thing looked like when put together.

The same sort of thing applied to knowledge in general, and to the order of life which may be put together out of the seemingly separate parts of knowledge, might well be called "Anaximandering," suggests a present-day geographer, President Isaiah Bowman of the Johns Hopkins University, in the title-chapter of a new book of essay-addresses on education, *A Design for Scholarship* (Johns Hopkins Press). "It is the opposite of meandering, that hither-and-yon-ness that is the natural law of streams rather than of men."

Design—a definite idea of the goal and of how to get there—is fundamental to education, as its lack is fatal, whether through mental laziness or supine yielding to passing fads and fash-

ions. This does not imply rigidity in the design or obstinacy in following a planned course when it is seen to be failing of the goal. Indeed, true design for scholarships can neither be conceived nor its realization attempted in a regimented society, Dr. Bowman holds.

"If you wish the world to remain static," he says, "do not foster learning and the application of reason to human affairs. If you wish to substitute propaganda for research or put prejudice before learning, do as is done today in two countries once world-famed for learning—imprison the scholar or hound him into exile."

And just because we may have slain one bugaboo of prejudice, we have not thereby earned the right to sit back smugly and think that the many-headed monster is finally disposed of, Dr. Bowman warns. "The Dayton fundamentalists have become a national jibe, but can we examine dispassionately either the pros or the cons of American adherence to the League of Nations, to mention but a lesser challenged item among the many that now provoke school boards to wrath? Evolution no longer troubles a distracted world: the patrioteers have transferred their earnestness to the oath of allegiance."

Yet Dr. Bowman would not claim for the schools the exclusive privilege of leading the way in a changing social order. He vigorously disclaims, on the part of teachers any "special power, all-embracing and conclusive, to 'settle' the affairs of men." In his opinion, freedom of learning is at least as important as freedom of teaching. Students, he feels, are competent to listen to what the professors have to say—and to reject nonsense coming from the Chair as they would nonsense coming from any other quarter.

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ARCHAEOLOGY

Weatherproof Ancient Ruins With Chemicals

AFTER years of research, scientists believe they have found a weatherproofing compound to save prehistoric pueblo ruins in the Southwest from further damage by weather and erosion.

Field experiments in the past year, by Frederick T. Martius of the National Park Service, have tested a newly developed compound, consisting in part of a solution of vinyl resin in acetone and toluene. The material appears to meet the numerous requirements.

Science News Letter, July 25, 1936

EDUCATION

Character Ideals Changing Since Horse and Buggy Era

BEN FRANKLIN'S famous list of virtues might not make him a pillar of society at all in this fast-moving twentieth century. So the American Home Economics Association was told, at its meeting in Seattle.

What was considered a vital character in horse-and-buggy days, or earlier, may be quite morally inadequate in this streamlined age, declared Dr. E. W. Warrington, of Oregon State College, discussing the homemaker's part in character education.

The child of today must be prepared to live in a civilization that is in a state of flux, the speaker emphasized, and "the indications are that speed will increase, rather than diminish."

Up-to-date character traits for vital living and comments by Dr. Warrington include:

Modern Traits

1. Discrimination. Essential in facing issues today. If we live vitally, we must distinguish among the good, the better, the best.

2. Self-discipline. Leads to vision, power, freedom, and poise of personality.

3. Appreciation. To live vitally, whether poor or rich, one needs ability to discover beauty and goodness in the world around.

4. Imagination. The errand boy which may be trained to try out issues for us and give the verdict before we ourselves become involved. Important in the uncertainties of the present world.

5. Humor. Ability to recognize the inconsistencies, the ridiculous, the odd in one's own actions and those of others, with a twinkle in the eye, is rather essential for healthy living, especially so in this age.

6. Reverence. There is need to discover the overtones and certainties among the transient features which challenge worship.

7. Joy. There seems to be a close relationship between joy and energy, joy and progress, joy and righteousness.

The virtues that Ben Franklin set down for himself in the eighteenth century and that modern character education doubts would give results in this streamlined age are: Temperance, silence, order, resolution, frugality, industry, sincerity, justice, moderation, cleanliness, tranquillity, chastity, humility.

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