

GENERAL SCIENCE

Temperature Is Stimulus to Rapid Evolutionary Changes

Experiments With *Drosophila* Indicate Mutations Appear Five Times as Frequently Among Warm Colonies

Evolutionary changes appear rapidly at high living temperatures, more slowly in chilly environment, experiments reported before the American Association for the Advancement of Science in Dallas indicate. Two Amherst College zoologists, Prof. H. H. Plough and Dr. George P. Child, discuss different aspects of this phenomenon.

They used as experimental animals the little vinegar fly or pomace fly, *Drosophila* partly because its small size and simple living requirements make it easy to rear huge numbers in limited space, partly because long study of this particular species has given science a better knowledge of its heredity than they have of any other organism.

Mutations, or abrupt evolutionary changes, appeared about five times more frequently among the offspring of a given number of animals in a "warm" colony than among the same number of offspring kept at a temperature ten degrees colder.

It does not seem that high temperature in itself is the cause of mutations, since mutations appeared also among the insects kept at low temperature. More probable is the assumption that the natural tendency of all living things to change is intensified by the speeding-up of life processes that occurs when it is warmer.

Prof. Plough and Dr. Child did not extend their conclusions to take in evolution in other animals, but if their results are valid for organisms in general it would be natural to infer that evolution goes on more rapidly in the tropics, and in the past has been most rapid during periods when the general temperature of the earth stood at a relatively high level.

Science News Letter, January 3, 1942

Life-Span of Anthills

THE TEEMING miniature city-states that we call ant-hills have a life-span of their own, a time during which they grow, flourish, decline and die, just as did Nineveh and Tyre. Dr. William A. Dreyer of the University of Cincinnati told an audience of zoologists attending the meeting of his studies on a group of great ant-hills in northern Illinois, which indicate that the average span of life for such a community is from 15 to 20 years.

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Earliest Immigrants

FOLLOWING the trail of America's earliest inhabitants to Alaska, where immigrants from Asia must have entered the New World long ago, Dr. Frank Hibben of the University of New Mexico has discovered two Folsom-like stone weapon points buried deep in the earth. These small clue objects of sharpened stone and traces of a prehistoric settlement now lying under ten feet of muck and an equal depth of peat, indicate that some ancient settlers came to southern Alaska and tarried at Cook Inlet.

Dr. Hibben addressed the Geological Society of America at a special session for discussing latest discoveries regarding early man.

In the Alaskan interior where gold miners have opened up thick muck deposits, near Fairbanks, Dr. Hibben has detected flint weapon points of an early American style known as the Yuma type of weapon.

Such finds indicate that Paleo-Indians were present in Alaska when the last

Ice Age was ending or the present era was dawning, Dr. Hibben concludes, but the scattered finds are not yet clearly fitted into the pre-history of our continent.

It has been definitely shown by recent discoveries that man has been present in the Texas region of America long enough for streams to build three stages of terraces, Dr. E. H. Sellards of the University of Texas told geologists. Considering the amount of work that a river does in building and destroying successive valleys, he declared his belief that scientists must stretch out the time scale now commonly used in measuring cultural stages of man in the region.

Science News Letter, January 3, 1942

"Eyes" in the Back

IF YOU find an ancient Indian skull with a pair of holes in its back, like a pair of spectral eyes, don't assume that they were cut there by prehistoric medicine-men "to let the evil spirits out." Primitive trepanning was resorted to for that purpose, but these "eyes" in the back of the head were not necessarily made in that way, Dr. William M. Goldsmith of the University of Dubuque told zoologists at the meeting.

Such paired openings, known to anatomists as the "Catlin mark," occur naturally in some persons' skulls. They are born with these openings, which never grow shut. The Catlin mark was once thought to be rare, but Dr. Goldsmith has found, by means of X-ray examinations, "scores of families and hundreds of individuals possessing these strange openings in the back of the skull."

Since this anomaly has no doubt been common in the human race for thousands of years, he pointed out, there is no reason why these strangely marked skulls should not be unearthed.

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Ancient Forests

IF WE of modern times could walk in a forest of 50 million years ago, we would see some very familiar-looking trees—redwoods, bald cypress, hickory, oak—even though the animals would look like nothing on earth today. Yet the forest would be a strange one for all that, Prof. Ralph W. Chaney of the University of California pointed out, because of the very mixture of trees just mentioned, plus some additional species now found only in eastern Asia, like the ginkgo tree.

The forest—any forest—of the 50-million-year-ago Tertiary period was a grand mixture of trees now found only in widely separated parts of the earth. Thus, the redwoods are found only on the Pacific coast of North America, the

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ginkgo only in Asia, the combination of bald cypress, hickory and oak only in the southeastern United States. Many thousands of years of climatic changes, of slow rise of mountain masses, of thrusting of deserts and dry grasslands into the once continuous forest belt, have acted to bring about this separation and sifting of species.

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SCIENCE CLUBS OF AMERICA

Sponsored by Science Service

NEWS OF CLUBS

DETROIT, Mich.—All of us have read about "strategic materials"; but how many are familiar with what they are, how they appear in their crude form, and what they look like when ready for commercial use? Nevertheless, members of the Mineral Club formed at Eastern High School, are surprisingly familiar with strategic materials. The reason is that this group has set up an exhibit of things important to our country's National Defense and is now also working upon conservation displays. The club is sponsored by Willard C. Moore, instructor in geography and geology.

MONTREAL, Canada—The Science Club of Sir George William's College (Evening Faculty) of Montreal, engages in discussions and demonstrations of chemical processes, and biological and physical phenomena. College level studies in psychology, scientific politics and economics are carried on avidly. The chairman of this club is Kenneth A. Hall. Membership in Science Clubs of America is not restricted to any age group. Young scientists need the guiding spirit of college men and graduates; they in turn, find affiliation with specialists desirable and helpful. Members of all ranks may be found in this international organization.

SCOTLANDVILLE, La.—Another college affiliate is the Just Biology Club at Southern University, sponsored by Dr. J. W. Hazzard and Mr. R. M. Ampey. Important among the activities of the club are discussions of topics brought up in biology classes. In this way there is an augmentation of college classroom work. Movies on biological subjects, exhibitions, publications, guest speakers and the preparation of scrapbooks and herbariums are some of the other efforts.

RALEIGH, N. C.—National Defense and conservation play an important role in the programs of many science clubs. The W.H.S. Science Club formed at Washington High School, is carrying on laboratory projects to demonstrate the making of the more common household products such as baking powder, soaps, inks, and pure food dyes; while others are conducting nutrition experiments. The club is sponsored by Mrs. Fanny V. Latham, teacher.

HERSHEY, Pa.—The program for the Science Forum, a club formed at the Hershey Industrial School, will be based on scientific developments as they relate to our National Defense. This club fingerprints all new students entering the school and will have over a thousand fingerprints before the term is over. Its exhibits will be entered in local science fairs. In May the group will hold its own Fourth Annual Fair. The club is sponsored by Charles L. Bilke of the science department.

LOCKHAVEN, Pa.—Helping the National Defense problems at home and making plans for bettering recreational facilities in their vicinity is part of the job undertaken by an independent group known as the Science and Engineering Club, sponsored by Clair S. Hursh, a ceramic engineer, engaged in research. Some research problems are given to the members for solution.

OWOSSO, Mich.—As long ago as Biblical times the observation was made and recorded that when there is no grass on which animals may feed, one of the first and most characteristic symptoms is blindness. Today we know that grass and green-growing plants contain a yellow

pigment, carotene, the precursor of Vitamin A, which when absent from the ration of animals produces blindness. Some members of the Scintilla, a club at the Owosso High School, are experimenting with this vitamin while others are qualitatively analysing unknowns used in everyday life. The club is sponsored by F. W. Moore, chemistry teacher.

PITTSBURGH, Pa.—Everything directly or remotely connected with microscopic work and techniques is of interest to members of the 'Scope Club at Taylor Allderdice High School. Making slides, mounting specimens, micro-projection and photo-micrography are a few of the interests. The members also are mounting insects in plastics which they will exhibit at the Science Fair at Pittsburgh. This group under sponsorship of Mae Weber Smith, biology teacher, also is affiliated with the Pennsylvania Junior Academy of Science and the A.A.A.S.

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● RADIO

Saturday, January 10, 1:30 p.m., EST

On "Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Harvey C. Rentschler, director of the Westinghouse Lamp Division research laboratories, will discuss his work with ultraviolet against viruses. Listen in each Saturday.

Tuesday, January 13, 10:15 p.m., EST

Science Clubs of America programs over WRUL, Boston, on 6.04 and 11.73 megacycles.

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