health existent then. In a series of 127 women in North Greenland the average age of first menstruation was fifteen years and 5 months. In 42 full-blooded Eskimo women the average was fifteen years and 6 months.

Apparently Bertelsen had revised his belief in regard to the lack of a seasonal birth distribution, for Birket-Smith[7] quoted him as stating that north of Disko Bay in the Arctic regions proper the number of births increased greatly in the first three months of the year. The same phenomenon also occurred in the two most southerly districts. The statistics given later (Bertelsen, 1935) hardly support these statements.

Dr. Henry Greist, superintendent of the Point Barrow, Alaska, Presbyterian Hospital from 1921 to 1936, furnishes other pertinent information by private correspondence. He writes: "I cannot agree with those who regard the long winter night of the Arctic as inducing physiologically a tendency toward continence. Sexual desire is believed to be as actively manifest during the Arctic night, so called, as during the summer. If any difference at all there is *more* sexual congress during the winter than the summer. . . . Illicit intercourse is far greater in amount during the winter months than within the months of daylight." In regard to the onset of puberty, he agrees with Stefansson[8] that it is quite early in the Eskimo but differs with him as to the cause. Stefansson believes it to be due to the high temperatures maintained in the igloos, but Dr. Greist, in his professional calls, found a very large percentage of the population with no heat much of the time due to lack of fuel. He believes that the lack of privacy on the part of the parents, the crowded homes and the intimate relations on the part of the children lead to early sexual stimulation and that to early puberty. However, the cases of motherhood before fifteen years of age are very rare.

It seems inappropriate to attempt in this brief note any evaluation of the often contradictory evidence in regard to the age of puberty among the Eskimos, except to state the belief that some of the earlier estimates were likely too high. Furthermore, it seems unwise to consider the possibility of the existence of definitely limited seasons of reproduction in other human groups, in regard to which it seems very probable that much of the published material available is based on inadequate data. This paper is merely an attempt to show that there is good reason to believe that Dr. Cook's original observations do not apply to any considerable group of Eskimos and should not be so construed. Regardless of what effect the length of day may have on the reproductive functions of certain experimental animals the Eskimos do not experience a sexual sterility during the long winter night.

[7] Birket-Smith, "Greenland," Vol. II, p. 24, 1928.

[8] Vilhjalmur Stefansson, *Jour. Am. Med. Asn.*, 75: 669–670, 1920.

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## INSECT ZOO AS A WILDLIFE CONSERVATION PROJECT

IN September, 1934, there was opened at Goddard Memorial Park, for one experimental month, the Rhode Island Insect Zoo. Its founder and director was Brayton Eddy, national lecturer on entomological subjects. Believing that man will not kill what he appreciates and does not fear, Mr. Eddy undertook to build up an appreciation of insect life by presenting some 150 species alive within environmental display cases which he himself designed. Accompanying the exhibits were descriptive cards giving highlights upon the different species exhibited.

The policy of the insect zoo was to display native insects and animals which feed upon insects, to the end that the general public might be brought to a fuller understanding of the forces operating to promote biological balance. The nature of each animal was defined—whether it was a parasite, predator, scavenger or plant-eater—and the direct effect it might have upon the human race was indicated. In that one experimental month the number of visitors exceeded 30,000 people.

During the summers of 1935 and 1936 the Rhode Island Insect Zoo was considerably enlarged until this summer—when it has been moved to Nooseneck Hill, Rhode Island, under the name Rhode Island Insect Zoo and Nature Center. As a nature center, the exhibit has been augmented by introducing insect-eaters from other states, seasonal wild flowers and local minerals. It has been used to promote pride and appreciation of wildlife and minerals in the hearts of both local visitors and tourists.

The need of something more than government bulletins, photographs, drawings and mounted specimens in getting scientific truths before the general public has long been felt. Insect bulletins tend to pile up on the shelf, gathering dust, while crops are consumed by the very insects they were written to control. How to get the information out of bulletins and offered to the general public in such form that it could be easily grasped was the task to which Mr. Eddy set himself.

He believed that the problem was one of education, but education of a particular kind—education by demonstration. First get the public, then tell your story. The value of live animals in drawing a crowd has long been recognized. Instead of using the crowd as possible purchasers of commercial products, use it as consumers of information on wildlife conservation and insect control problems. Demonstrate the value of

calosoma beetles, praying mantes, skunks, crows, snakes and other misunderstood creatures by feeding them in public during certain announced hours of the day.

This is what has been done at the Rhode Island Insect Zoo, and the result has been amazing. People never before interested in small wildlife, or interested only superficially, have come to the insect zoo and spent hours in its perusal. By displaying live examples of the only four types of poisonous snakes in North America, respect and appreciation of all other snakes has been encouraged. By displaying the one species of poisonous lizard in the United States, the same is done for lizards. Local insects lose their horror when the few pain-givers—those which sting and those which cause a rash when handled—are represented by live specimens. Exhibiting the black widow spider and the tarantula, and explaining that they alone—of all spiders in Rhode Island—are dangerously poisonous, the lives of many other harmless and beneficial spiders are being spared.

To-day the insect zoo and nature center has become first port of call for many farmers and gardeners who are suffering from insect and other pests. Specimens are brought in for identification and for comparison with other specimens in the exhibit cases. Questions on insect control are incessant. The statement is repeatedly heard made by the departing visitor, "Well, I won't be killing them any more."

In the eight summer months which the zoo has been in operation, over 600 species of live insects and insect-eaters have been on display. Many more have been identified and added to the type collection of Rhode Island insects which is being kept for scientific reference. Over 105,000 visitors have attended. The zoo is situated twenty-three miles south of Providence, R. I., Route No. 3. It is open daily from 10:00 A.M. to 10:00 P.M. until October 2. The state cooperates in the matter of site and advertising, but leaves it to the fifteen-cent entrance fee to pay running expenses. Its purpose is educational. Members of the American Association for the Advancement of Science are always welcome, particularly if their attitude is critical.

BRAYTON EDDY

## REGULAR POLYHEDROIDS

THE readers of SCIENCE may be interested to know that the results in the article by E. R. Bartlam entitled "On the Properties of Rectilinear Figures of n Dimensions" (SCIENCE, July 1) are special cases of those found by Stringham[1] in his exhaustive study. Stringham extended Euler's polyhedral theorem to n-dimensional space and showed that regular self dual $(n+1)$-hedroids analogous to the tetrahedron exist in any n-dimensional Euclidean space and that the number of regular elements of different dimensions, triangles, tetrahedra, etc., which bound these polyhedroids, are given by the expansion of $(1-1)^{n+1}$, excluding the first and last terms.

He showed that dual $(2^n)$-hedroids and $(2n)$-hedroids analogous to the dual polyhedra, the octahedron and cube, also exist in any n-dimensional Euclidean space and that the number of regular elements of different dimensions, triangles, tetrahedra, etc., or squares, cubes, tesseracts, etc., which bound these polyhedroids are given by the expansion, in direct and reverse order, respectively, of $(2-1)^n$ excluding the last term. Bartlam's table gives special cases of this theorem.

Stringham showed that no other real regular polyhedroids can exist in n-dimensional spaces when $n>4$. In three-dimensional space there are of course in addition the two dual polyhedra, the dodecahedron and the icosahedron.

Stringham finally showed that in four-dimensional space there exist also a self dual (24)-hedroid whose boundaries are regular octahedra, and two dual polyhedroids, a (120)-hedroid with dodecahedral boundaries and a (600)-hedroid with tetrahedral boundaries.

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# QUOTATIONS

## SCIENCE IN PRACTICE AND THEORY

ONE of the prime functions of the annual meetings of the British Association is to serve as a reminder to the nation at large of the basic importance and interest of natural science, alike in its philosophical bearings, its practical results, and its social implications; and the president, in his address, has an unrivalled opportunity of crystallizing this aspect of the association's work. This year's president, Lord Rayleigh, distinguished scientific son of a distinguished scientific father, has taken full advantage of this opportunity, He has discussed not only certain recent advances in pure knowledge and numerous remarkable practical applications of such knowledge, but also some of the ethical problems as well as the philosophical puzzles arising from recent scientific advance. The ethical problem concerns the relation of science in general and the individual scientist in particular to war and

[1] W. I. Stringham, *Am. Jour. Mathematics*, 3: 1, 1–14, March, 1880.