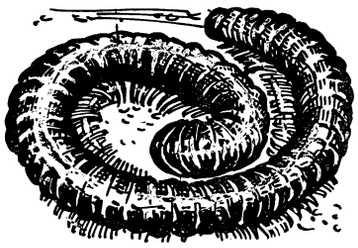
BIOLOGY

NATURE RAMBLINGS

by Horace Loftin



Thousands of Legs

➤ HOW MANY legs does the "thousand-legs," shown in the illustration, have to carry him daintily over the floor? How many can his relative, the "hundred-legs," boast?

Both the millepedes (thousand-legs) and the centipedes (hundred-legs) belong to a class of animals appropriately called the "many-legged," for Myriapoda.

The sub-group of the Myriapoda in which the millepedes are found have two pairs of legs on every body segment except the first four. Since some members of this sub-group have 60 or more body segments, then 56 times four legs per segment gives 224 separate legs at least for some of the millepedes. While not a thousand, this is legs aplenty.

The sub-group in which the centipedes are found have a single pair of legs for each body segment, and there is a range of from 15 to 177 body segments within the sub-group. Thus, 354 separate legs may be found on some of this sub-group.

An unknown poet, speculating on how these creatures keep from tripping over themselves, was inspired to the following verse:

A centipede was happy, quite,
Until a toad in fun
Said, "Pray, which leg moves after
which?"
Which raised her doubts to such a pitch,
She fell exhausted in the ditch,
Not knowing how to run.

However, in nature the myriapods do not seem to run into the trouble of the philosophical centipede of this poem. In fact, in their own quiet way, they are quite successful animals. The millepedes, for instance, comprise some 900 genera—pointing to long and successful existence on earth for the group.

The myriapods, along with the insects, spiders and crustaceans are part of the large phylum of animals called the arthropods. This phylum is characterized by its members' bodies being divided into segments and by some or all of these body "compartments" bearing segmented limbs.

Using the presence of jointed limbs, worm-like myriapods or caterpillars can readily be distinguished from the true worms, such as earthworms. While these latter have segmented bodies, they never have the segmented limbs of the arthropods.

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ANTHROPOLOGY

Cave Man's Tooth Troubles

➤ WHEN Stone Age man started living in caves and using tools instead of his teeth to capture and preserve food, human teeth began to deteriorate.

A survey of the microscopic quality of human teeth shows this, Dr. Reidar Sognnaes of Harvard School of Dental Medicine believes.

Dr. Sognnaes has examined teeth from Paleolithic Palestine, Prehistoric Greece, Predynastic Egypt, Ancient Iceland, Middle Age Norway and from Ancient Guatemalan and Pecos Indian (New Mexico) sites.

The oldest tooth specimens, from the Stone Age period in Palestine, showed the formation of poor dentin and poor calcification. All Old World teeth show poor calcification and this seemed to result from disturbances occurring during the early years after birth. In the Pecos Indian teeth (1100-1700 A.D.) 50% had cavities. The Pecos Indian teeth were very prone to faulty microscopic structure.

"Stone Age teeth could be grouped with those of modern man with respect to the range and severity of developmental defects in the dental microstructure, probably due to inadequate or irregular diet," Dr. Sognnaes reports.

Defects in tooth development are exceedingly rare in such subhuman primates as the wild rhesus monkey, he notes.

This suggests this "the primates maintained uniformly perfect tooth structure only as long as they were basking in the sun of the treetops, depending for survival upon the perfection of their teeth; that the terrestrial apes (subhuman anthropoids as the wild chimpanzees, gorillas, gibbons and orangutangs) tended to have teeth of an intermediary microstructure, less perfect than the monkey but superior to early man; and that early man proved too clever for his own good, dentally speaking, when he entered the cave and in the struggle for life discovered the use of other tools than his own teeth for the capture and preservation of food."

Dr. Sognnaes concludes, hopefully, that all may not be lost to man, dentally speaking. He suggests future generations may be able to prevent the severe microstructural defects in dental development by incorporating into the teeth the optimal chemical ingredients such as fluorine and other trace mineral factors in proper amount and ratio to each other.

Dr. Sognnaes reports his findings in the *American Journal of Pathology*.

Science News Letter, July 7, 1956

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