

fragile. Their many jointed legs break off at the slightest provocation, and even their slender bodies snap in two on very little handling. It is a good thing (for the centipede) that these legs can be regrown, like the lost legs of spiders, crabs and similar creatures. Incidentally, there are not a hundred legs, as the centipede's name implies. Less than half that number is the more usual quota.

Probably the popular tendency to clas-

sify centipedes, along with spiders and scorpions, as insects or "bugs" is beyond correction. Actually, insects, spiders, scorpions, centipedes, millipedes and a few less well known creatures hold equal rank as classes in a great natural group comprising all animals that have jointed legs. This joint-leggedness is reflected in the Greek-derived name that covers the whole lot of them: Arthropoda.

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ICHTHYOLOGY

Fish Carry Own Lights In Under-Ocean Blackout

Down in Oceanic Abysses Where No Sunlight Penetrates Are Dimmed Lights Like Those of European Cities

LIFE in a world of perpetual blackout is not necessarily completely lightless and blind, says Prof. E. Newton Harvey of Princeton University. Creatures of the oceanic abysses, where no glimmer of sunlight ever penetrates, carry dim, greenish lights that give their little patches of illumination, very much after the fashion of the carefully shuttered and dimmed lights carried in European cities now that the Dark Age is again upon the earth.

Not only in the ocean's depths but also in our own upper world of air and earth are there nocturnal creatures that light their own dark ways. Almost all the major groups of animals, and two great classes of plants, have representatives in the glimmering ranks reviewed by the Princeton biologist. Bacteria, fungi, protozoa, jellyfish, up to insects, mollusks and fish, all have their lantern-bearers.

Some, like the bacteria, have no way of turning their light on or off and so

shine with a constant glow. Most, however, either flash at more or less determinable intervals, like the familiar fireflies, or burst into phosphorescence when disturbed, like the one-celled animals that swarm in the sea during periods when the water "burns" at night.

There are certain forms without "power-plants" of their own that exploit the light-producing powers of smaller creatures, notably bacteria. One remarkable case which Prof. Harvey describes in a new book, *Living Light* (Princeton University Press), is the special bacteria-harboring organ carried by two related genera of tropical fish. Below each eye is an organ apparently especially designed for growing masses of luminous bacteria. It has a rich blood supply, opaque screens for protecting other tissues of the fish from the light, and a mechanism for shuttering the illumination at will.

Not always, however, is the presence of luminous bacteria beneficial to the animal in which they live. There are a number of species of insects and smaller crustacea that become populated with these shining germs, and in most instances such infection is fatal. Luminous wounds in human beings have even been recorded, in days before modern aseptic surgery.

Less serious in its consequences, and with even a humorous touch, was an instance of "borrowed fire" which Prof. Harvey observed in Cuba. He found what at first appeared to be a luminescent frog. Upon closer examination it turned out that the animal had just made a hearty meal of fireflies, which were still shining so strongly that their light came through the skin on the frog's bulging abdomen.

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FIGHTS AERIAL INVASION

Aerial invasion of the United States by possible disease-bearing mosquitoes is fought by this new sprayer, developed for the U. S. Public Health Service. The spray is so fine that it is practically dry, that is, it does not deposit on walls and fabrics. It is used on planes in flight to Miami, Florida, from Caribbean and Mexican ports, and very few live mosquitoes have been found since its employment. On the Pacific Coast it is used before departure on planes bound for Hawaii and has proven effective in keeping mosquitoes out of these islands.

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