The dwarf forms from either region have less than half the length or breadth of the forms on the ocean shore.

Interesting experiments might be made upon this widely distributed *Neritina* to see if it is so adapted to waters of an optimum salinity that rearing it in either more or less saline water causes it to be of smaller size.

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MOLLUSCAN HOSTS IN NORTH AMERICA FOR HUMAN FLUKES

PERHAPS the most impressive thing to the student of trematodes is the relatively great number of digenic worm parasites affecting man that are indigenous to the Orient, Africa, India and Europe. Equally striking is the lack of fluke parasites which affect man in North America. These significant facts may be explained in terms of man's distribution during geologic time. Such facts should encourage research on our own molluscan fauna taxonomically and experimentally to determine the probability and possibility of the dangerous exotic flukes becoming established on this continent.

Has any one yet tried to infect the North American relatives of *Melania, Katayama, Oncomelania, Bulinus, Bithynia, Planorbis coenosus* or *Segmentina* with the miracidiae of man's most dangerous flukes? These genera harbor such flukes in the Old World. Does any one know whether the Japanese snail, *Viviparus malleatus,* will not carry any of these dangerous flukes? This snail is already well established in the Kern River and the irrigation ditches about the city of Bakersfield, California. There are many orientals working in close contact with these snails in California. Is any one sure that these gardeners can not infect these snails with any one of the many flukes of the Orient? Likewise *Bithynia* has been introduced from Europe and *Viviparus* and *Segmentina* also have species native to North America.

Diseases such as yellow fever, malaria, sleeping sickness and filaria are carried by two or more species of the same genus of insect and, in the case of filaria, by two different genera. The distribution of these diseases now depends on the distribution of the species of animals that can carry them. Man is no doubt still giving his diseases to mosquitoes and snails that are capable of being infected because of their relationships to the original hosts.

Many of the animal parasites of man in North America are exotic forms. The hookworm of the South is supposed to have come from Africa with the slaves. Many other worms have had a similar history. In North America, rich in trematodes in other orders of vertebrates, we find few important flukes, except those brought in by foreigners, which affect man. It may not be impossible, however, for them to become established if the proper snail host should be introduced, or if the immature stages could live in a closely related snail. Such may be a possible explanation of the human fluke, *Paragonomus westermani,* in the New World.

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A BITUMINOUS FOSSIL PLANT FROM THE TRIASSIC OF NORTH CAROLINA

A SPECIMEN of solid hydrocarbon (bitumen), in the shape and with the external markings of a flattened tree root, was recently taken from the roof of the Cumnock Coal Mine of the Deep River Triassic Coal Field of North Carolina. This peculiar specimen is black in color, brittle and has many pores, marking the presence of former gas bubbles. The specimen was about 30 feet from a large, basic, igneous dike which cuts through the Cumnock coal seam. This igneous dike has altered the bituminous coal to natural coke (carbonite) for a number of feet on either side of the dike.

It is apparent that this bituminous fossil plant root was formed by the filling of a root cavity by the bitumen distilled from the coal in the formation of the natural coke.

Local deposits of solid hydrocarbons in the Triassic sediments or Mesozoic basalts have been mentioned by a number of scientists, as J. G. Percival, T. S. Hunt, E. S. Dana and I. C. Russell. These deposits have been cited from Gaspé, New Jersey and Connecticut. The occurrence in these localities is in amygdaloidal cavities in the cellular basalt or along joint planes in the Triassic rocks.

The source of the bitumen in the deposits in Gaspé and New England is doubtless from the igneous dikes which have picked up the hydrocarbons in their course through carbonaceous rocks. The hydrocarbons thus gained were deposited in the most accessible rock openings, the joint planes and amygdaloidal cavities. This latter type of opening does not occur in the basic rock deposits in North Carolina, since in this section of the country the Mesozoic basic rocks are entirely intrusive in character and non-cellular, but the solid hydrocarbons do locally occur along the joint planes.

There are probably many fossil bituminous plant stems in the Triassic coal field areas of North Carolina and Virginia, but as far as I know there has been up to the present no record of such discovery.

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