

physical features. Thus the frog, salamander and turtle which dominate the animal life of the marshes give way entirely to other types on the uplands.

The influence of this familiar and powerful factor,—the character of the soil or rock,—in determining the major features of land biotas, is paralleled by the control which the physical character of the bottom exercises over marine biotas. When marine dredging is conducted with the object of ascertaining the relationship of the various kinds of bottom to the kinds of life living on them, as most of the writer's have been, the association of certain faunal with certain bottom facies becomes clearly apparent. The control exercised by the physical character of the bottom in bringing together certain groups of animals and plants into marine communities and in excluding others is just as effective as is the operation of the physical character of the land surface in producing varied faunal and floral groups.

The distribution of the sponges is one of the interesting features brought out in collecting the fauna listed above. These were found in such abundance on the coarse rocky bottom at the mouth of the Avon river and on the hard muddy sand bottom off Kingsport as to completely fill the dredge in some hauls. On soft mud bottom however, not a single sponge was taken. The molluscoidea also show a strong affinity for hard bottom, five species being taken on gravel and rocky bottom, one on firm muddy sand bottom, and not a single species on soft bottom. The four species of echinoderms taken were all found either on gravel or the comparatively firm sandy mud bottom. The preference of the crustacea for hard or firm bottom is also evident. The seven species listed were all taken either on gravel, rocky, or sandy mud bottom, and but two of them on soft bottom. Only two specimens of *P. acadianus* were taken on soft mud bottom and 39 specimens were taken on the sandy mud bottom.

The fauna of the soft mud bottom shown by the list includes thirteen species which are confined to the four groups, vermes, pelecypods, and gasteropods and crustacea. Two of the species were not found outside the limits of the soft mud. The specialized character of the black mud fauna is apparent from the fact that it contains no representatives of the *Porifera*, *Molluscoidea* nor *Echinodermata*. The mud bottom in developing its soft bottom facies draws from but four of the eight phyla which are abundantly represented in the region.

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When you are in or near the forest this summer, never leave your camp fire until it is absolutely OUT. Never throw away lighted matches or tobacco or pipe ashes. These rules are followed by all veteran sportsmen and good citizens.