

on weathered surfaces. In such cases, it not infrequently happens that the upper part of the rock immediately below the soil or subsoil yields a richer harvest of good specimens than could be obtained by breaking open the fresh stone. Some of the rotten débris from the surface and fissures of the limestone should be carried home, washed and boiled, as in the treatment of shale. The minuter organisms may thus be recovered, and as these, when found in limestone, often differ in kind from those preserved in shale, no opportunity should be lost of searching for them. Soft, pulverulent limestones, such as chalk, should be gently levigated, the chalky water being poured off and fresh water being added, until a granular residue of foraminifera, ostracods, shell fragments, etc., is obtained. Nodules of limestone or ironstone often inclose fossils, but it is not always easy to split them open in such a way as to lay bare their organic nucleus. This, however, may frequently be effected by putting the nodule into a fire, and dropping it, when quite hot, into cold water.

Clays.—These may be successfully treated for microzoa in the manner above described for shales. Though they often contain much interstitial moisture they are not readily levigated in water until after they have been thoroughly dried in an oven, before a fire, or in the sun. When so treated they are easily reduced to fine mud, which may be removed in suspension until a granular residue is left, which may be searched for fossils. But as many of the minuter organisms float when loosened from the matrix, the muddy water should be passed through a brass-wire sieve as fine as muslin. If the meshes become clogged, so that the water will not flow readily through them, a few smart taps on the side of the sieve will clear them. Should some portions of the clay refuse to pass into muddy suspension, even after repeated trials, they will probably be levigated by boiling, as for shale. Treated as here recommended, many glacial clays, which, to the eye, appear hopelessly unfossiliferous, may thus be made to yield an interesting group of *Foraminifera*, *Entomostraca*, etc.<sup>41</sup>

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<sup>41</sup> By the methods here recommended large additions have been made to our knowledge of the microzoa of the past. (See, for example, Mr. H. B. Brady's researches on the Carboniferous Foraminifera and Prof. T. R. Jones's and Mr. Kirkby's monograph on Carboniferous Entomostraca.) The existence of Holothuridæ in the Carboniferous sea has been discovered entirely by these means.