

before the specimen is packed up. If the actually exposed face of the *Fenestella* is intended to be exhibited, it may be cleaned from the gum or from any adherent shale by being rubbed quickly with a wet nail-brush and wiped with a clean damp sponge, care being taken that the gum holding down the lower surface of the fossil is not softened, and that the shale does not get too wet. If, on the other hand, it is desirable to expose the face of the frond that adheres to the shale, this may be effected as follows. All trace of any gum that may have been used should be carefully removed. The specimen is then warmed before a fire, and a thin layer of asphalt is melted over it by means of a hot iron rod. If the frond to be lifted is large, a thick strong cake should be formed upon the specimen by using alternate layers of strong brown paper and asphalt, the paper always forming the outer surface of the cake. When the cohesion between the asphalt and the specimen is firm, the whole is then placed in water, when the shale generally crumbles down and can be removed, leaving the *Fenestella* adhering to the asphalt. In this way, the poriferous surface, which, for the most part, clings to the shale when the rock is broken open, is laid bare. By gently brushing the specimen with water, its minute structure may be revealed, the delicate network lying on the asphalt like a piece of lace upon a ground of black velvet. The cake of asphalt may then be shaped and mounted on a wooden tablet.<sup>40</sup>

But in most cases there are numerous minuter forms which escape notice, and which must be searched for in another way. To secure these, a little shale should be lifted with a trowel from the most weathered parts where fossils are visible, the trowel being gently pushed along so as to remove only the superficial layer, where the fossils are necessarily more abundant from the disintegration and removal of the shale by rain, sun and wind. If wet, the shale thus collected should be thoroughly dried in an oven or before a fire. Thereafter, it is to be well soaked in water till it crumbles down; after gentle agitation, the muddy water should be poured off, the heavier particles being allowed to settle to the bottom. This process should be repeated till the sediment is so freed from clayey particles that it can be passed through sieves of different degrees of fineness. The several assortments thus obtained should then be boiled

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<sup>40</sup> Mr. Young kindly revised for me this account of his asphalt-process.