

specimen. But without any preparation, the surface of coal recently broken may be successfully investigated. One of the most interesting examples of coniferous structure in coal that my cabinet contains, was discovered by my son in a piece lying on the fire, and which had cracked from the heat; and I have another fragment, showing the spiral vessels, and coniferous glands, which the Rev. J. B. Reade obtained in the same manner. But for choice specimens, the following method is to be employed; and in many cases no other plan will succeed. Sections of teeth, bone, marble, &c. are to be prepared in a similar manner.

#### MODE OF PREPARING SLICES OF FOSSIL WOOD FOR MICROSCOPICAL EXAMINATION.

“Let a thin slice be cut off from the fossil wood, in a direction perpendicular to the length of its fibres—the slice thus obtained must be ground perfectly flat and polished. The polished surface is then to be cemented to a piece of plate glass (3 in. long and 1 in. wide) by Canada balsam—a thin layer of balsam must be applied to the polished surface of the slice, and also to one side of the glass—the slice and the glass are now to be laid on any thin plate of metal, and gradually heated over a slow fire, or a spirit lamp, to concentrate the balsam. The heat must not be so great as to throw