

extending as a carbonized pellicle from one edge of the aperture to the other. With reference to the point in dispute, there was sent with the communication a portion of cuticle, which, after being immersed in alcohol, distilled water and dilute hydrochloric acid, was, when perfectly dry, examined by a high power and the membrane distinctly seen; it was more evident after the process of charring, which process was so conducted as to obviate all error arising from pressure. The tissue was placed on a slip of glass, and submitted to the action of heat without being covered by another slip. Thus both the supposed sources of error were avoided; the one by the previous removal of organic mucus, and the other by a different manipulation.

The paper was accompanied with sketches of the stomata by Mr. Lewis Aldous, the power employed being about 2000 linear; and the author concluded by stating, that Dr. Williams, after seeing the membrane under this power, immediately approved of the process which rendered it so distinctly visible.

A paper was read descriptive of three species of Sponge, containing some new forms of organization. By J. S. Bowerbank, Esq.

The first specimen described is a *Halichondria*, which the author has named *Johnstoniana*, in honour of Dr. Johnston of Berwick-on-Tweed.

The sponge is sessile, massive, and has a smooth encrusted surface of a dark iron-gray colour; the interior is of a dull yellow colour and much resembles the crumb of bread. This sponge is remarkable for the great variety in the forms of the siliceous spicula; of which the author describes three distinct kinds, each of which is characteristic of a separate part of the animal:—1st. Those of the skeleton, which are mostly simple and slightly curved, having hemispherical terminations; but occasionally they are triradiate or multiradiate, and frequently branched. 2ndly. Those of the interstitial fleshy matter of the sponge; these are minute stellate bodies, having their rays attenuating regularly to their apices, the number of the rays varying from three to ten or twelve. 3rdly. The spicula of the crust or surface of the sponge; they are very minute, somewhat fusiform, terminate abruptly, and have their surfaces regularly tuberculated.

The author also describes a fine vascular tissue which he observed on the surfaces of the great excurrent canals. The gemmules are oval bodies, having a siliceous crust which is filled with minute spicula. This species was found attached to the Thatcher rock, near Torquay, Devonshire.

The second sponge described belongs to the new genus *Duseideia*, proposed to be established by Dr. Johnston in his 'History of British Sponges.'

This species was sent from Sidney, Australia, by Rupert Kirk, Esq., after whom it is named *Kirkii*. It is sessile, massive, and somewhat compressed. The skeleton is coarsely fibrous and coralloid in appearance, having numerous grains of sand separately imbedded in its substance. The grains are not imbedded in the fibre from pres-

sure through the external surface, but they occupy its very centre; each grain being separately encysted by the cartilaginous matter of the skeleton, the whole being surrounded by a thick coating of the same substance. The author describes at length the mode in which this curious structure appears to have been built up, and illustrates his descriptions by highly magnified drawings of the manner in which the grains are built into the fibrous skeleton. Spicula were of rare occurrence in this specimen; when observed they were imbedded in the external coating of the cartilaginous fibres; they are short and comparatively thick in proportion to their length, decreasing very slightly from the middle to near the points, and are terminated acutely but somewhat abruptly.

The third species is the *Spongia fragilis* of Montague, or *Duseideia fragilis* of Johnston's manuscript. It is massive, variable in form, of a dull ochreous yellow colour, and has the surface asperated by the projection of fibres, which contain numerous grains of sand imbedded in a manner similar to those described in treating of the last species. There are also other fibres which are tubular in their structure, containing few or no grains of sand, but an abundance of spicula remarkable for their great variety in form and size.

No spicula were found in the fleshy matter of the sponge, but a considerable number of round or oval bodies were present, which presented every appearance of being cytoblasts.

The author concludes his paper by some observations on the present state of our knowledge of the structure of the *Spongida*, and notices certain changes that will become necessary in their systematical arrangement when our information regarding their structure is more matured.

The paper was illustrated by drawings of the Sponges, and the various descriptions of spicula contained in their structures.

MISCELLANEOUS.

NIGER EXPEDITION.—MR. FRASER.

A letter has just been received, by the Zoological Society, from Mr. Fraser, the naturalist to the Niger expedition, dated from the mouth of the river Nun, West Africa, August 14, 1841. In the first part of his letter Mr. Fraser alludes to a collection of specimens which he had formed during his passage out, and forwarded to England. The collection consists of three mammals, twenty-eight reptiles, fifty birds, upwards of thirty fishes, and about forty boxes, bags, &c., containing insects and shells. The letter contained some interesting facts relating to the habits and localities of several different species, and the writer expressed a hope that they would not be regarded as a specimen of what might be expected, as he had purposely abstained as much as possible from using his materials for preparing specimens until his arrival at the Niger.

Little Auk.—In the 'Annals and Mag. of Nat. Hist.' for December, I perceive a notice by Mr. Townsend of the occurrence of *Mergulus*