

tained by the latter, he finds that in the bark of the bamboo and the epidermis of straw the silica incrusting these tissues is not crystallized, but, on the contrary, exhibits, both before and after incineration, the most beautiful and elaborate organization, consisting of an arranged series of cells and tubes, and differing in its character in different species of the same tribe, and in different parts of the same plant.

The observations of Mr. Golding Bird, contained in the 14th number of the Magazine of Natural History, New Series, are then referred to; and the author states in confirmation, that, by employing caustic potash, the siliceous columns may be removed from the leaf of a stalk of wheat, while the spiral vessels and ducts, which form the principal ribs of the leaf, as well as the apparently metallic cups which are arranged on its surface, remain undisturbed. He proposes, therefore, to substitute, in the description of vegetable tissues, the term *skeleton*, instead of that of *bases*, whether saline or siliceous, of those tissues.

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March 15, 1838.

FRANCIS BAILY, Esq., V.P. and Treas., in the Chair.

Captain Thomas Best Jervis, E.I.C.S., and Travers Twiss, Esq., were elected Fellows of the Society.

The reading of a paper, entitled, "Experimental Researches in Electricity," Thirteenth Series, by Michael Faraday, Esq., D.C.L., F.R.S., &c., was commenced:

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March 22, 1838.

FRANCIS BAILY, Esq., V.P. and Treas., in the Chair.

A paper was read, entitled, "Description of a new Tide-Gauge, constructed by T. G. Bunt, and erected on the Eastern bank of the River Avon, in front of the Hotwell House, Bristol, in 1837." Communicated by the Rev. William Whewell, M.A., F.R.S.

The principal parts of the machine here described, are an eight-day clock, which turns a vertical cylinder, revolving once in twenty-four hours; a wheel, to which an alternate motion is communicated by a float rising and falling with the tide, and connected by a wire with the wheel which is kept constantly strained by a counterpoise; and a small drum on the same axis with the wheel, which by a suspending wire communicates one 18th of the vertical motion of the float to a bar carrying a pencil which marks a curve on the cylinder, or on a sheet of paper wrapped round it, exhibiting the rise and fall of the tide at each moment of time. The details of the mechanism, illustrated by drawings, occupy the whole of this paper.

A paper was also read, entitled, "On the Régar or Black Cotton Soil of India," by Capt. Newbold, Aide-de-Camp to Brigadier-Ge-