### Diatoms and Flocculent Matter.

IN old microscopical journals, one frequently finds the query "How can I get rid of flocculent matter in preparing diatoms for mounting?" and as a rule there is no answer to the question.

The desired result can be attained by pouring the water containing the cleared diatoms into a glass bowl and letting it stand until the diatoms have settled and all eddies have died out in the liquid. By inclining the bowl sideways and giving it a gentle rocking motion a quantity of flocculent matter will be detached and can easily be made to roll up into small lumps and drawn away from the diatoms, when the lumps can be sucked up with a glass syringe. The process can be repeated over and over again till nothing but pure diatoms are left. The necessary rolling action is caused by viscosity, and except at the surface of the bowl the small oscillations of the fluid are practically irrotational. The diatoms mostly collect at the edge of the receding liquid, but it is important that the operation should be performed in the shade, as otherwise "greasiness" is produced by the evolution of air, and the diatoms float and stick on the surface of the water.

When all the flocculent matter is removed the fluid is stirred up by the syringe and then sucked up and deposited on the cover-glass, when the diatoms will be found to be perfectly evenly distributed, and the cover-glass must be left untouched and protected from dust until the water has dried. It is almost impossible to avoid impurities being deposited round the edge of the cover-glass, and it is my practice to wipe off a narrow margin, the central part being clean. The method of cleaning answers equally well for the desmids found in the sphagnum pools in North Wales.

I have collected diatoms from very unpromising localities by washing a quantity of seaweed in a large basin and emptying the basin by suddenly reversing it and immediately restoring it. The tiny pool of water left in the basin is usually full of diatoms, and if slowly drained off sand will be left behind.

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### American Official Publications.

I BEG leave to direct attention to the lack of facility for obtaining the official scientific publications of the various departments of the United States Government. If it is desired to obtain a copy of one of these, it is necessary to write to Washington, enclosing the anticipated and approximate sum for payment, and in due course the publication arrives. Such a procedure necessitates a delay of about a fortnight at the very least, and the accredited agents of the U.S.A. Government in this country inform me that more than a month may elapse before the information is received.

It is obvious that such delay is annoying and undesirable, the more so because many of these publications are of real value for the careful work they contain. Consultation at a library is not always satisfactory, as the various series may not be complete and are not invariably in a condition suitable for quick reference: in any case, personal possession is usually more satisfactory and is often imperative.

Some time ago I brought this matter before my friend Dr. George M'Lean, who was on a visit from the United States in order to report to his government on the British universities, and afterwards became so valuable as a link between American students and British and French centres of learning. I do not know whether or not he took any action, but, so far as I am aware, the situation remains the same as it always has been.

It would, I consider, be of considerable value for arrangements to be made so that all the U.S.A. official publications could be purchased in Great Britain as soon as they can arrive here after their issue in America. There can be no doubt as to the practical and educational value of such an arrangement, which might include a somewhat widespread distribution, at a nominal fee, of periodic lists of the various Bureaux and Departments.

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March 24.

### The Use of an Artificial Horizon in Photographic Measurements of Buildings or other Structures.

IN a letter in NATURE for March 6, p. 338, Mr. Mallock records his method of using an artificial horizon in photographic measurements of buildings. The method, as described, would of course give a permanent and easily studied record, but it appears to the present writer as needlessly complex. No mention is made by Mr. Mallock of a modern phototheodolite which, set up and in adjustment, would give, without the need for an artificial horizon, all the information required. The setting up, usually by means of an attached bubble, introduces into the instrument the desired vertical. The correlation of this vertical with the image on the photographic plate is a practical matter of 'check' or 'adjustment' on the instrument itself. This 'setting up' or levelling of the camera is essential in the case of any photographic recording instrument for such a purpose. Having thus obtained a true vertical, it appears unnecessary again to secure it by means of an artificial horizon. The method of indicating fundamental directions on the plate would be a matter of choice. It might be a series of fiducial vertical lines or simple marks in the photograph to indicate vertical and horizontal planes. Unless the artificial horizon has merits not fully appreciated by me, it would appear better to carry out such work with a simpler and practically standard equipment.

Mr. Mallock's very interesting letter does, however, suggest the question as to whether periodic photo surveys of our more important public buildings might not be part of upkeep routine. The survey need not be expensive and the records could be studied at leisure. Photographic surveys at ten-yearly periods, or as required, would be a safeguard against unsuspected subsidence or other changes.

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### Did Davy melt Ice by Friction in a Vacuum?

QUITE firmly entrenched in scientific literature, including some very recent English histories of science, is the statement that Sir Humphry Davy contrived a clockwork by which two pieces of ice were rubbed together and made to melt under the exhausted receiver of an air-pump. This is incorrect. A reference to Davy's works (Davy, "Collected Works," vol. 2, 1839, p. 11, 12, "Experiment II." and "Experiment III.") indicates that in one experiment he melted ice at 29° F., by friction, *in the open*, and that in another experiment he caused *wax* to melt by friction of two metals (wheel and plate) *in a vacuum*. Davy did not melt ice by rubbing together pieces of ice in a vacuum.

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