research at Abbeville and St. Aucheul, would be likely to result in finding among the broken flints the choice specimens that they have treasured up: "*for it must be borne in mind that they simply made a selection*" (my italics).

Again, on p. 35 we find "Mr. Whitley has shown at the Victoria Institute specimens of flint broken by Blake's patent stone-breaker, in which a cast-iron jaw is worked by a steam engine, which flints, selected from the broken mass, could not be well distinguished from those which, in the ossiferous caves, are the reputed knives and scrapers of Palæolithic man" (my italics).

Further comment is unnecessary.

J. REID MOIR.

One House,
Ipswich.

Frictional Forces in Liquid Surfaces.

WHILE working with a suspended system in which the bottom of the system consisted of a fine wire dipping into a solution of salt in water, it was found that frictional forces existed which resisted rotation of the wire. The suspending fibre was of phosphor-bronze, 0.0015 cm. in diameter and 1 m. long. On this was hung a disc, 4 cm. in diameter, and weighing 10 gm. Fastened to the bottom of the disc was a short piece of No. 30 copper wire dipping a few millimetres below the liquid surface. The liquid was 4 cm. deep.

It was found that often the top of the suspending wire could be turned two or three complete revolutions without any resulting motion of the disc, but when the disc once started to move it would move a considerable distance and with some rapidity.

CARL T. CHASE.

Norman Bridge Laboratory of Physics,
California Institute of Technology,
Pasadena, April 21.

The Disposal of Scientific Journals.

I EXPECT there are many people like myself who are embarrassed by the accumulation of scientific journals, which remain unbound and are so seldom referred to afterwards that they amount to little more than an incubus. I think many of us would be glad of some help towards getting this literature disposed of to the best advantage. I have myself a large accumulation of unbound issues of the *Proceedings of the Royal Society*, the *Journal of the Chemical Society*, *Chemistry and Industry*, etc. After inquiry in likely places I have found no trade market for these. I scarcely like to part with them as waste paper, yet it is difficult to find any better destination.

Perhaps some readers of NATURE may have found a solution of the difficulty, and could give others the advantage of their experience.

S.

Ultra-Violet Photometry.

THE use of optical wedges in photometry is so convenient and accurate that they are now being largely employed, but their use is, at present, mostly confined to the visible region. Dr. Toy (*Phil. Mag.*, 1920) showed that wedges of neutral grey gelatine between quartz plates could be used down to about 3000 Å.U., but the absorption coefficient, and hence the wedge-constant, was increasing so rapidly with decreasing wave-length, that they would probably become useless beyond about 2900 Å.U.

Having recently had facilities for measuring the

constants of such wedges on an accurate spectrophotometer, using a sodium-in-quartz photo-electric cell, we found that the constants actually increased but slowly beyond 3000 Å.U. Messrs. Ilford, Ltd., kindly made another new wedge embodying certain suggestions indicated by previous work. The change of wedge-constant with wave-length for this new wedge is considerably smaller than that of a wedge of the standard type, and either type of wedge can easily be used down to 2380 Å.U. at least. (Beyond this there are no lines which we could use in the mercury spectrum, and the mercury arc is the only convenient source of illumination for this work.) The following table shows the change of wedge-constant with wave-length for both of Messrs. Ilford's standard wedges between quartz plates, and also for the special wedge they recently made for us—the wedge-constant for 3655 Å.U. being taken as unity in each case.

The change of wedge-constant with wave-length seems to be a gradual one, and is a very small disadvantage in practice, as it is easily allowed for. The writers have employed Ilford gelatine wedges between quartz plates for photometry of the ultra-violet end of the solar spectrum—i.e. to about 2950 Å.U.—for two years with excellent results.

λ.	Wedge-Constant.		λ.	Wedge-Constant.	
	Standard Type.	New Type.		Standard Type.	New Type.
Blue			2893 Å.U.	1.62	1.30
3655 Å.U.	0.7	0.7	2804	1.65	1.36
	1.00	1.00	2752	1.68	1.40
3342	1.28	1.10	2655	1.78	1.45
3131	1.50	1.19	2536	2.00	1.55
3022	1.57	1.23	2480	2.10	1.57
2967	1.58	1.26	2378	2.30	1.63
2925	1.60	1.28			

In the booklet on "Photographic Photometry" recently published, we have stated that neutral gelatine wedges cannot be used for wave-lengths shorter than about 2900 Å.U. as indicated by the earlier results. This now needs correction, since such wedges can be very conveniently used to 2380 Å.U. and probably somewhat further.

G. M. B. DOBSON.
D. N. HARRISON.

Clarendon Laboratory,
Oxford,
May 10.

A Substitute for Microscope Cross-Wires.

IF a microscope or other apparatus fitted with cross-wires is not available, a convenient substitute may be made by placing a coverslip carrying two filaments of seccotine at right-angles between the lenses of an eyepiece.

The coverslip is placed on the end of a cork, which makes a convenient 'bench.' A small quantity of seccotine is squeezed out of a tube; this is touched with a pin or match, and the fine filament produced when the pin is drawn away is manipulated on to the coverslip. The cork is rotated through 90° and the operation repeated. The degree of fineness to which a filament can be drawn depends on the consistency of the seccotine. At ordinary laboratory temperature in winter it was in a suitable condition almost as soon as it had left the tube.

FRANK W. JANE.
Dept. of Botany, Birkbeck College
(University of London), E.C.4,
April 26.