phosphate occurs so slowly that solutions of this salt may remain supersaturated for many days".

We are not concerned with theoretical considerations, we can but record our findings made frequently and separately by us and using an acid hydrolysate of casein, similar in all respects to that of J. H. Mueller[6] and to that of Snell and Strong[7]. We have also indicated, from a review of the literature, that mineral requirements may be modified by the pattern and amount of growth factors added to the medium.

But Prof. Hopkins asks a question by implication: if little or no precipitation occurs immediately after the addition of $CaCl_2$ to the cold sterile medium, what happens after seventy-two hours? In our experience (in uninoculated controls), very little. It must be remembered also that we are not dealing with simple solutions; there is a rich variety of amino-acids present in the medium, cells are growing rapidly and glucose is being metabolized. Phosphates are utilized in both these processes and are removed from the medium, and finally the *p*H of the medium falls. All these factors will tend to increase the solubility of calcium, which in our experiments is never precipitated.

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Cellulose Acetate Mounts for Rock and Mineral Fragments

EMBEDDING rock or mineral particles in a uniform thin sheet of cellulose acetate facilitates their optical examination, transport and storage, especially during the field study of graded concentrates derived from detrital or crushed rocks.

More than a hundred times the quantity of such particles can be mounted together than is possible in any normal Canada balsam/glass mount, while preserving all significant microscopical advantages of the latter. This fact enables more accurate quantitative mineralogical analyses of certain sands to be made, for example, by accommodating in a single mount the whole heavy-mineral concentrate from a bulk-sample of greater volume than it has been convenient to study in most cases hitherto. Areas of the film containing grains of critical importance can be marked with ink, greasy crayon or gummed paper masks, or removed for special treatment with scissors, a knife or razor blade.

The substance of the sheet is colourless, transparent and isotropic when unstrained with a refractive index of about $N_D^{20°}$ 1·4, depending upon the exact composition of the dispersion. It is light in weight, very flexible, insoluble in water and does not crease, crack or tear, even when handled comparatively roughly. In composition it is identical with that of the laminar moulds used by me for studying the finer structures of rock, mineral and metal surfaces[1].

To prepare such a mount, a cold dispersion of cellulose acetate in one part by volume of tetrachloroethane and two parts by volume of 'Cerric Thinner T.10' (Cellon, Ltd., Kingston-on-Thames), containing about 20 per cent (of the weight of cellulose acetate) of a plasticizer such as triphenylphosphate or dimethyl-phthalate, is flowed over a levelled sheet of clean plate glass, say, 23 cm. × 10·5 cm. × 0·6 cm., to a depth of 0·1–0·15 cm., the latter depending on the maximum diameters of the particles concerned. Immediately this has been done, the sieved rock or mineral powder, either before or after separation into fractions, is moistened with tetrachloroethane and shaken as evenly as possible over the dispersion layer, into which it sinks.

In about eight hours the compact film remaining after volatile parts of the dispersing medium have evaporated has a thickness about one tenth that of the original fluid layer. The film is then stripped from the glass, labelled and its edges trimmed with scissors, before being examined optically.

A trace of some suitable dye, when added to the parent dispersion, serves to distinguish any particular batch of mounts by its tint. Rectangular films, 23 cm. × 1·5 cm. × 0·01 cm., are of convenient shape and size for microscopical examination and can be stored or posted in standard foolscap paper envelopes without further protection. With regard to the permanence of these mounts, experience has shown that they have developed no appreciable discoloration, brittleness or shrinkage after three years of storage in such envelopes.

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Jan. 23.

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High-Angle Edge Flaking of Flint

MR. D. F. W. BADEN-POWELL'S criterion for intentional flaking[1] is invalid, for when applied to implemental forms from Eocene deposits it gives a false answer.

Mr. J. Reid Moir's contention that series of adjacent scars form a criterion of human work fails when applied to similar series of Eocene date. My own criterion is based on observed facts and not, as Baden-Powell suggests, on an assumption that primitive man was not likely to flake at obtuse angles.

Baden-Powell states that flaking at about 90° is necessary for removing flakes from Aurignacian and Magdalenian cores. This is not a fact, for it is well known that such cores are in their final or 'reject' state. They began with an acute angle which increased as flaking proceeded to about 90°, which is the limit of easily controlled flaking. The platform is then again made acute or the core is rejected.

Primitive man adopted flaking at acute angles because it is easy, is under good control, and yields acute cutting edges. Obtuse angle flaking possesses none of these advantages.

In reply to Mr. Henry Bury[2], I would point out that natural forces were sufficiently active to leave abundant traces of crushing, abrasion and striation on the Tertiary flints.

In the series of nine human industries I gave in *l'Anthropologie*[3] from which Bury quotes, the Abbevillian, one of the oldest industries, is placed next to the Campignian, which is of Neolithic age. In the series of sixteen industries published else-