Comments and Communications

Cloudiness in Relation to Choice of Astronomical Sites

THE remark of Seymour L. Hess (SCIENCE, **115**, 655 [1952]) that "there are good physical reasons for believing that the spatial distribution of daytime cloudiness may be quite different from that of nocturnal cloudiness" is confirmed by the observations of daytime and nighttime cloudiness made at the Royal Greenwich Observatory at its new site at Herstmonceux and its old site at Greenwich.

At both sites observations are being made of the total amount of sunshine during the day and of clear sky at night. The night records are made with a small camera pointed to the pole, and the amount of clear sky is determined from measurements of the lengths of the circular trails of Polaris and of δ Ursae Majoris.

The sunshine recorded at Herstmonceux is in excess of that recorded at Greenwich by about 40 per cent, whereas the night sky records give an excess at Herstmonceux over Greenwich of about 6 per cent. The difference is attributable to the tendency for cumulus clouds to form inland; at Herstmonceux, which is near the coast, the amount of cumulus cloud is noticeably less than further inland.

The night sky records can give some useful information about the quality of the sky by comparison of the trails of circumpolar stars of different magnitudes. At Herstmonceux the ratio of the total monthly amount of "clear" sky as indicated by the trails of δ Ursæ Minoris and of Polaris has ranged between 0.84 and 0.95.

A night sky recorder is an easy instrument to construct. A simple lens, costing a few cents, is adequate, and the records are made as a quarter plate. High cirrus clouds are readily shown up by their effect on the trails of faint stars, those of the bright stars being unaffected.

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On the "Contractility" of Bacterial Flagellae

ASTBURY (*1*) has shown that the x-ray diffraction pattern of bacterial flagellae is similar to that of myosin. Recently de Robertis (*2*) reported that the addition of ATP to isolated flagellae of *Bacillus brevis* causes a contraction of these particles as viewed in the electron microscope. These studies suggested that bacterial flagellae might be similar to myosin in their behavior toward ATP, and it therefore seemed desirable to check the point by methods that have been applied to myosin in our laboratory.

Four harvests of *Proteus vulgaris x-19* were treated by the method of Weibull (*3*) to obtain pure suspensions of flagellae. Seven attempts to detect ATP-ase activity were made using (total) nitrogen concentrations of the order of .01% and ATP concentrations of 5.8×10^{-4} *M*. Of these only one showed any ATP-ase activity, and this activity was 1/25 that found in myosin (*4*). The presence of flagellae was checked in the electron microscope. In five light-scattering experiments, ATP addition failed to cause any turbidity change, implying that ATP addition caused no change in state of aggregation or in shape. By contrast, myosin under these conditions showed very drastic changes (*5*). The dephosphorylation and light-scattering were done with and without the addition of Ca^{++} (.001 *M*) and Mg^{++} (.01 *M*).

We are at present unable to explain the contradiction between our results and those of de Robertis.

We are greatly indebted to L. Barnes for supplying a pure culture of *P. vulgaris* and to E. Kafig for the electron microscope observations.

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A Tissue-to-Metal Adhesive Useful in Geiger Counting[1]

IN SOME biological isotopic tracer work, we encountered the problem of keeping thin blood and tissue samples from flaking after being weighed and dried on counting planchettes, from shifting into positions of poor counting geometry with slight jarring, or from being blown away by the whistling of exuberant passers-by. The fragility of the samples made even temporary storage before counting a hazard. In attempting to rectify this situation, we explored a variety of possible adhesives, including albumen in water and glycerin, Canada balsam, gum acacia, gum tragacanth, fish glue, casein glue, Duco cement, and lecithin, and we wish to report what seems to us to be an ideal solution.

The qualifications of lecithin as a plastic substance, as a good emulsifying agent, and as a binder, used commercially in confections, seemed to offer great promise. The promise has been fulfilled, for it has been found that a saturated alcoholic solution of com-

[1] Work done in connection with AEC Contract (30-1) 1093 and partially supported by funds from an anonymous donor, administered by James C. White.