

A NEW CAMERA LUCIDA

THE various kinds of camera lucida hitherto used have always possessed many inconveniences, none of them allowing to be seen upon the paper with sufficient precision, and simultaneously, the image of the object and the point of the pencil. For the purpose

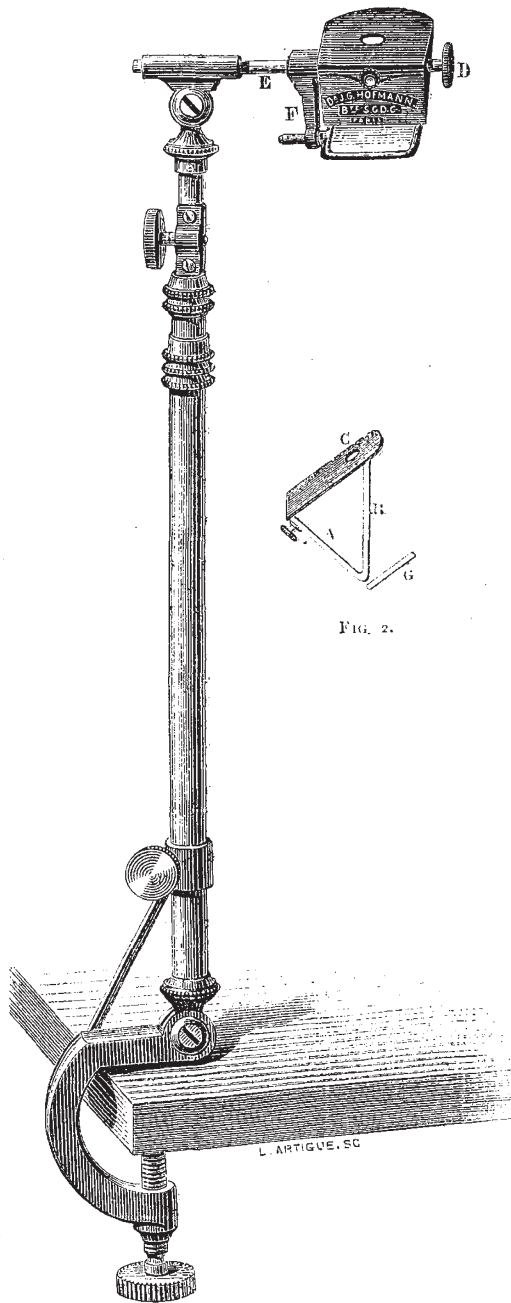


FIG. 1.

of remedying this inconvenience, Dr. J. G. Hofmann, of the Rue Bertrand, Paris, has had recourse to an arrangement by which he believes he has obtained the most satisfactory results. The illustration will give some idea of this arrangement.

Fig. 1 represents the general elevation, in half size, of Hofmann's camera lucida. Fig. 2 is a transverse

section of the optical part, composed, at A, of a metallised mirror, or other metallic surface, polished and rigorously plane; at B, of a small plane mirror of parallel glass, forming, with the metallised mirror, a fixed angle. The function of the latter is to let pass a part of the luminous rays coming from the object to be drawn, and to show at the same time the point of the pencil alongside the image upon the paper. At C may be placed, in a movable frame, either a plate with parallel surfaces, or lenses of neutral glass of various foci, the principal object of which is to enable a satisfactory drawing to be made of the objects placed inside, when using white paper; for the outside, this glass serves to temper the brightness of the sun.

At C is the eye-hole or opening before which the eye is placed. The knob D serves to place the chamber in a convenient position, which sometimes depends on that of the artist with respect to the object; but generally it is convenient to place the mirror D vertically. With the same pieces of the optical part, with the addition of a concentrating lens, Dr. Hofmann has been able to construct a second model applicable to microscopes, for which, as well as for telescopes, all previous forms of camera have given only very mediocre results.

ANATOMICAL PREPARATIONS FOR MUSEUM AND CLASS PURPOSES

IN a former number of NATURE (vol. xvi. p. 360) I offered some suggestions on museum preparations and arrangement. These I can now supplement by a new method which I have tried with encouraging success.

No museum-curator needs to be reminded of the many defects of the ordinary fluid-preserved. Evaporation, blanching, spilling, optical distortion, the cost and inconvenient shape of glass vessels—these are among the serious and apparently inevitable advantages of dilute spirit. I have found it possible to get rid of all these difficulties together by mounting dissections and entire animals in glycerine jelly.

The following directions may be followed until experience shall suggest better. Soak gelatine (best quality) in water until it has absorbed as much as it can, melt and add an equal bulk of best German glycerine. Clarify with white of egg, one egg to a pint of mixture, taking care to boil very steadily, without burning. Filter hot through flannel. The jelly should be transparent, and of a pale straw-colour. It should melt at 39° C., and have a specific gravity of 1.186 at 8° C., compared with water at the same temperature.

The jelly may be diluted with water, with glycerine, or with a mixture of the two. I find one part of jelly to one of glycerine and one of water a convenient proportion. The dilute jelly is apt to run fluid on exposure to the air, owing to the growth of moulds. This may be prevented by using a solution of salicylic acid or thymol in water for dilution. These substances cause opalescence in the medium, but a very minute quantity of acetic acid clears it again.

Lay out the dissection on wax, as recommended in my previous letter, but without pins, and fill up with jelly rendered fluid by gentle heat. When the vessel is full, allow the jelly to cool and set, then pour a little more on the top. After this also has set, lay the glass cover (warmed by immersion in hot water) in its place. As the superficial layer of jelly melts, press the cover down. When cold, cement the edges with strips of cloth smeared with coaguline.

The vessel for mounting may be of almost any size and shape. I have tried glass jars, built-up glass cells, ebonite, gutta percha, earthenware, and wood soaked in paraffin. The vessel should be strong and quite air-tight.

It is early as yet to speak of the final result. Some preparations have lasted five months without alteration.