

DESCRIPTION

OF A

DOUBLE REFLECTING MICROSCOPE,

MADE BY

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IN

ST. PAUL'S CHURCH-YARD, LONDON.

A Represents a tube, into which *B*, the body of the Microscope, is made to slide, that it may be adjusted to the proper distance from the object, so as to render it distinct to any sight.

The flat horizontal plate, *m f*, is contrived for holding the objects, with the different parts of the apparatus in which they are contained, properly called the *stage*.

Under the stage at *G* is a *concave mirror*, to illuminate the objects by reflecting the light from a candle or window. It has two different motions, whereby it may be adjusted so as to reflect the light *up* to the object placed on the stage.

H, a *double convex lens*, is fixed at the corner of the stage. This is of use to illuminate opaque objects by candle, and having two motions to it, may be adjusted according to the direction of the light.

I represents the brass cells in which the magnifying glasses are set, and therefore usually called *magnifiers*. Five of these belong to this Microscope, any of which may be screwed on to the small end of the body of the Microscope, as one of them is represented in the figure. They are numbered from 1 to 6, according to their degrees of magnifying: the number 1 magnifies the most.

There are several different contrivances for holding objects on the stage, according to the nature of the subject to be examined. Most small transparent objects are best preserved between two *talcs*, which are fixed in thin *ivory sliders*, as at *K*. There are six of these sliders belonging to this Microscope, each holding four objects.

L is a contrivance for holding the sliders. It contains a spring that presses against a thin plate, by which the slider is held. It is fixed on the stage by a round part underneath, that fits into the hole in the stage.

O is a steel wire, pointed at one end to stick any object upon, and a pair of *pincers* at the other end, which may serve to hold any live object. This wire slips into a jointed piece *p v*, that fits into the stage at *m*.

P a little *cylindrical block* of *ivory*, white at one end and black at the other; on either of which *opaque* objects are fixed, according to their colour. By means of a hole

hole made through this cylinder it may be fixed on to the sharp end of the steel wire above-mentioned.

I is a hollow cylinder that slides on the small end of the body of the Microscope at *q*. This cylinder carries the silver dish or speculum *b*, for illuminating opaque objects. When this silver speculum is used, the hollow cylinder must be flipt on the end of the Microscope until the upper edge comes to the circular mark corresponding to the number of the magnifier intended to be used; then the object being adjusted to the focus of the magnifier will be at the focus of the silver speculum; and the light coming from the glass mirror will be reflected back by the silver speculum to the object which is in its focus.

M, a brass fish-pan to which may be fastened a smelt, gudgeon, or any other small fish, in order to see the circulation of the blood in the tail: for which purpose the tail of the fish must be laid across the oblong hole *k*, while its body is kept firm by the ribbon. The nut *l*, under the pan, fits into the stage at *m*.

R, a brass cone to fasten on the shank under the stage when the deepest magnifiers are used, to view objects that are very transparent. It cuts off some of the oblique rays that are reflected from the glass mirror, and renders the object more distinct. Experience only can teach its proper use.

S is a round cell, or box, that contains two glasses, one plain and the other concave, intended to confine small living objects without crushing them, such as fleas, lice, mites, &c.

T, a concave glass proper for holding a drop of any liquid for discovering the smallest kind of animalculas that may have bred therein.

V, a glass cylindrical vessel, or watch glass, for holding a larger quantity of liquid, for viewing the larger kind of animalcula.

N is a glass tube to confine small frogs, fishes, or water newts, to discover the circulation of the blood. If the object be a fish, place it within the tube, and spread its tail or fin against the inside. If it be a frog, chuse such a one as can but just go into the glass tube, and with a piece of quill or stick expand the transparent membrane between the toes of the frog's hind foot as wide as you can. There are three of these glass tubes of different sizes. When they are applied to the Microscope they must be placed under the stage within two steel springs that are made so as to support any of the three different sizes.

W, an ivory box full of spare talc and wire rings, for fixing the objects in the ivory sliders.

X, a pair of pliers for taking insects and other small objects, and adjusting them to the glasses.

Y, a hand magnifying glass to assist the sight in preparing objects.

Z, a hair pencil.

n, a spiral wire for taking any thing out of the glass tubes.

