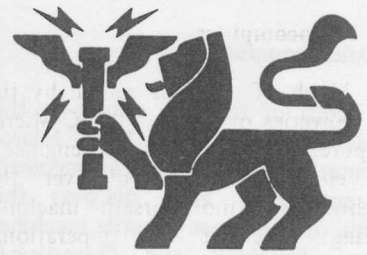
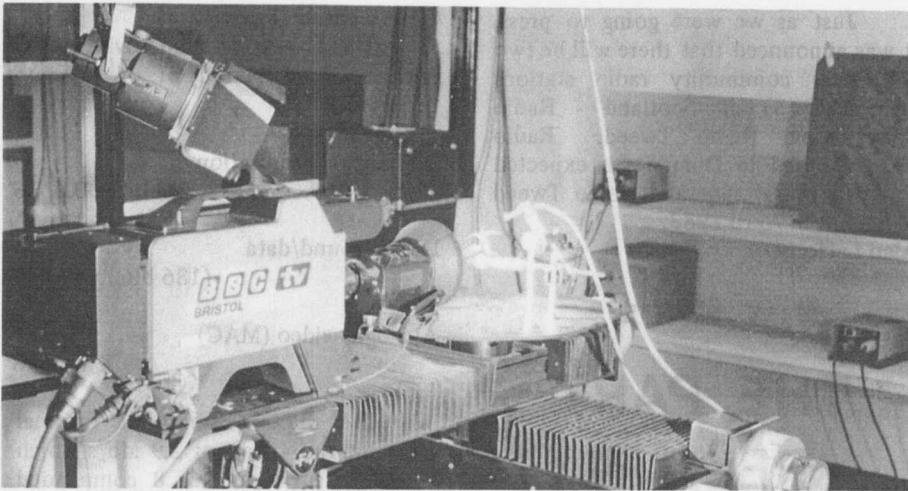


ENG INF

The Quarterly For BBC Engineering Staff



BRISTOL'S NEW BENCH



The new macro-bench at Bristol is put to good use studying a plant specimen.

Engineers at the Bristol NPC have developed a new facility in the world of macro-photography. The new facility known as a "macrobench", has been developed in co-operation with the Natural History Unit, and its introduction coincided with the Unit's twenty fifth anniversary, earlier this year.

In the world of entomology and botany, the problems of televising small objects at magnification of more than x1, requires special attention. The "macrobench" overcomes many of the problems. The new facility comprises two parts, the bench itself, and a purpose-built control desk.

The macro-bench, which can be used in a conventional studio/laboratory or on field location, comprises a mounting platform on which the object sits, a camera support column, and special "cold" lighting. The mounting platform can be rotated through a complete circle in either direction, moved towards, away and across the camera, or can be raised or lowered to any height. Control of the platform is effected via servo-motors manufactured specially for the bench, and the associated control panel; DC motors have been used for this purpose, since stepping motors would have caused undue vibration.

Machined screws allow precise

and accurate positioning of the platform; these have been covered with bellows to prevent water and insects entering. There are no conventional "frames" with the platform, although these can be provided if necessary. Mounting holes have been provided so that standard laboratory clamps can be used to hold specimens in position. The camera support has been manufactured from a modified Vinten "wind-up" column, fitted with a platform to take a standard pan and tilt head. The bench has been designed to allow the use of broadcast quality cameras such as the Ikegami 79 D television camera, fitted with either a Canon 10:1 zoom lens with x2 adaptor, or a Zeiss Tessovar microscope with four different turrets with overlapping ranges and a 4:1 zoom facility; this allows magnifications in the range of 1/2 to 22 times. The camera mount also allows film cameras to be fitted.

Two types of "cold" lighting have been provided. Under conventional lights the heat is too great for small insects, and plants would quickly dry up. Therefore, 200 watt HMI lights provide the main source, with the addition of ACMI 300 watt mercury discharge lamps feeding illumination down fibre optic light guides for more
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