



Fig. 1

"1" is a platinum wire 29 gauge, connected with the potentiometer system and extending down through the electrode vessel into the capillary "3." At the lower end it is coated with quinhydrone according to the Pierce technique. "2" is a side arm containing a firm saturated KCl agar bridge, extending into saturated KCl and through this connected with the saturated calomel electrode. The constriction lends immovability to the gel. "3" is a capillary 12 mm long, 0.25 mm at the lower end and increasing to 2 mm at the upper end where it joins with "2." Generally the capillarity of "3" is sufficient to bring the liquid in contact with the bridge in "2," if not, gentle suction may be applied at the top of the electrode vessel by means of a syringe prior to the insertion of the platinum wire.

	Calculated	Determined
	pH	pH
	7.01	6.93
	6.81	6.79
	6.91	6.89
	7.36	7.42
M/20 potassium biphthalate, 25° C.	3.97	3.98

The tumor fluid of Walker rat sarcoma No. 319⁷ showed a pH lying between 7.50 and 7.70.

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A SIMPLE CARBORUNDUM PENCIL

ONE of the problems which so frequently confronts the microtechnician, be he botanist, zoologist or bacteriologist, when staining, is to determine on which side of the slide the sections (or bacteria) are. In attempting to insure getting the correct answer to his question he may use a glass or pottery pencil, he may make a scratch on the slide with a small piece of carborundum, he may use the more expensive slides with one end "frosted" or he may merely trust to luck.

⁷ W. Schopper, *Arch. f. exper. Zellforsch.*, 14: 14, 1933.

However, none of these methods is entirely satisfactory when it is necessary to put considerable data upon the slide, such as the cytologist or cyto-geneticist finds necessary in his work.

For myself, I have, while being concerned with a cyto-genetical study, solved this problem of keeping the sections properly orientated by means of a very simple, but practical, tool which was easily constructed.

A small, all-wood penholder was used and the inside of the pen-end was scooped out to a depth of 2-2.5 cm. This cavity was filled with a thick paste of plaster of Paris and a piece of carborundum 15 × 3 mm imbedded in the paste so as to leave about 5 mm protruding beyond the end of the penholder. After the plaster of Paris has formed a rigid matrix one is able to make fine lines, small numbers or letters on his slides.

This device has proven far more satisfactory than any of those methods previously used. Likewise, such a tool is certainly good insurance against loss of valuable sections and data.

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