ANOTHER HOLDER FOR CHRONICALLY IMPLANTED ELECTRODES¹

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A number of devices for holding chronically implanted electrodes in brains of small animals have been developed (Sheer, 1961, p. 49-54). The one described here is most satisfactory in terms of economy and adaptability, and ease of preparation and use. It has been used successfully for both stimulation and recording with hamsters, rats, and gophers.

The basic unit is cut from a DB25S Cannon connector (Fig. 1). The electrode wires (Driver-Harris, 32 guage enameled nichrome) are twisted, soldered to the gold-plated metal sockets, and cut to length. Twisting obviates the need for other fastening and increases electrode resilience. Electrical integrity is checked before and after cutting.

To implant a single bipolar pair, the entire assembly is placed stereotaxically as in Fig. 2. For multiple monopolar placements, each unit (metal socket and electrode) is lowered separately and fixed with dental acrylic. The exposed portions are then bent to conform to the holes in the plastic holder (Fig. 3), which is then slipped over the metal sockets and cemented in place. Six monopolar electrodes can be placed on a rat by this method.

As adhesion of dental acrylic to the skull is unreliable, one or two stainless steel jeweler's

Fig. 2. A single bipolar electrode with pedestal and connector.

screws are placed near the connector assembly before the acrylic is applied.

The male portion of the connector is cut from a Cannon DB25P unit to match the sockets on the animal.

The average cost of the bipolar unit is 25 cents. A practiced person can make the assembly and implant it in about 1½ hr. Once the technique is mastered, the connector is easily modified to suit varied research purposes.

Fig. 1. DB25S Cannon plug cut to hold chronically implanted electrodes.

Fig. 3. Multiple leads fitted using the same materials as in Fig. 2. The darker shading indicates acrylic laid down first.

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REFERENCES

- Sheer, D. E. (Ed.) *Electrical stimulation of the brain*. Austin, Texas: University Texas Press, 1961.