RESTLESSNESS AND MORBID HUNGER IN MAN[1]

THIS study began with the observation in children who had epilepsy and other signs of lesions of the brain, of a symptom-complex consisting of marked restlessness, mental deficiency and, in some cases, morbid hunger. These cases presented similarities to experimental animals which, following removal of the prefrontal region of the brain, show excessive motor activity, morbid hunger and mental defects.[2] A study was then made of a series of 279 restless children to determine whether there was evidence in them to indicate a lesion of the prefrontal cortex.

The cases were divided into three groups: (1) markedly restless children; (2) mildly restless ones; (3) children who were restless at home but not on their visits to the clinic. An analysis of the intellectual performance on the Binet-Simon scale showed that the average intelligence quotient of the first group was 62; of the second, 86; and of the third, 95. A control group of 273 non-restless cases averaged 92 in intellectual status. Evidence of organic brain disease, including developmental defect, was present with much greater frequency in the markedly restless group (98 per cent.) than in the least restless group (43 per cent.). Morbid hunger occurred in 44 of the cases and was similarly associated with mental defect and with frequency of cerebral lesions. The close association with mental deficiency suggests that the brain defect involves predominantly the prefrontal region.[3]

Milder degrees of restlessness, particularly when readily controllable, are seen in otherwise normal children and do not indicate organic disease of the brain.

Marked restlessness, morbid hunger and mental deficiency thus constitute a syndrome in man, analogous to that observed in experimental animals. It appears to be due to a lesion of the prefrontal region of the brain. The syndrome occurs in a variety of disorders at all ages of life, but particularly in developmental anomalies and senile degenerations.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

DETERMINATION OF THE VISUAL POWER OF EACH EYE IN ANIMALS[1]

IN attempting to delineate the exact loss of visual power after unilateral occipital lobectomy in monkeys, it was desired to test the ability of the homolateral and contralateral eyes individually. Covering one eye with bandages was unsuccessful in monkeys, first, because they tore the bandage away, and second, because it interfered with attention in visual discrimination tests.

The idea then presented itself that an opaque plaque made to fit in the conjunctival sac might solve the problem. After trying a number of plastic substances success was attained with paraffin. Its translucence was overcome by suspending in it finely divided charcoal. The plaques are hand-made just before use, and inserted while the animal is under cyclopropane anesthesia.

Within one hour of insertion the animal exhibits no consciousness of the presence of the plaque, and will go through tests as well as normally. Over periods up to 48 hours no damage has resulted beyond a slight conjunctivitis, which rapidly subsides.

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[1] From the sub-department of neurology, The Johns Hopkins University.

[2] L. Bianchi, "The Mechanism of the Brain and the Function of the Frontal Lobes," Wm. Wood and Company, 1922; J. F. Fulton, C. F. Jacobsen and M. A. Kennard, *Brain*, 55: 524, 1932; C. P. Richter and M. Hines, paper read at the Second International Neurological Congress, 1935.

[3] A. F. Tredgold, "Mental Deficiency (Amentia)," Wm. Wood and Company, 1929.

PERMANENT PRESERVATION OF SMALL ZOOLOGICAL SPECIMENS

DR. E. O. ESSIG'S[1] recent account of reconditioning some small insects brings to notice the fate which befalls much valuable zoological material. The success of his efforts, resulting from astute deduction of obscure data, and the employment of a skilled technique can not always be duplicated, because of the nature of the material. In many instances, type specimens and valuable dissections are irretrievably lost, because of their original preservation in small vials. It seems impossible to devise any kind of removable stopper for these containers which will prevent the evaporation of the fluid preservative, sooner or later. Some workers enclose their vials in a larger container, and keep the latter filled with fluid, but this does not insure against carelessness of some future custodian.

For fifteen years soft parts of mollusca have been preserved at the California Academy of Sciences by hermetically sealing them in glass tubes. The method was devised because of the personal loss of a collection of dissections during a long absence from the country.

A person does not need to be an expert glass blower to make the seal. The usual laboratory blast lamp is the only equipment needed. Ordinary soft glass test-tubes make excellent containers. Since the work-

[1] From the Department of Physiology, University of Wisconsin.

[1] E. O. Essig, SCIENCE, n. s., 84: 2167, 47–48, July 10, 1936.

ing of these in the burner is not difficult when the size does not exceed about 25 mm in diameter, much valuable small material can thus be preserved. Larger specimens are not so apt to be allowed to dry up in jars.

The specimen with all necessary labels is placed in the bottom of the tube, and a pointed flame is applied sufficiently far above the paper that it will not scorch. As soon as the glass softens all around, it is slowly drawn down to a narrow neck (*b*, Fig. 1). After

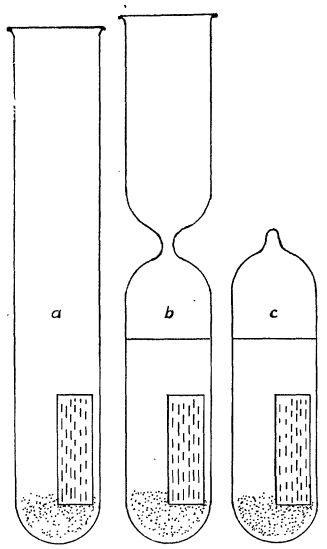

FIG. 1. Steps in the process of hermetically sealing zoological specimens: *a*. Specimens and label in tube. *b*. Tube reduced to a narrow neck and fluid added. *c*. The seal completed.

cooling for a few minutes, the preservative should be added. Just a touch of the flame will then seal off the constriction (*c*, Fig. 1).

There is no difficulty in flattening the bottom of the test-tube, if this be desired. Merely heat the bottom to the softening point, and press down on a piece of warm asbestos board.

There may be an objection that specimens so preserved are not accessible, but in practice it is found that the seals are so quickly and easily made, there is no hesitation in breaking a container when need arises.

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LABELING MUSEUM SPECIMENS AND LABORATORY EQUIPMENT

AN article by E. E. Jacobs and Mary Auten published under the above title in No. 2174 of SCIENCE inspires me to tell the readers of SCIENCE about another method of labeling museum specimens, one used successfully by me for a great many years. In my opinion our method is, in some respects, more convenient than that devised at Ashland College.

We label with enamel paints, using white enamel for the labels and black for the numbers. The surface, whether a fossil or a glass bottle, does not need any preparation. However, it is necessary to observe that the labeled surface be neither dusty nor greasy—precautions always observed in painting. With a small camel's hair brush we first make white labels in dimensions corresponding to the size of the labeled specimen. The enamel should be applied rather sparingly, just enough to cover and level the original surface and to give a uniform, shiny, smooth surface. The labels are dry enough in a few hours, but we prefer to let them stand over night, numbering them the next day. The numbering is done also with a camel's hair brush of the smallest available size, carefully selected as to its point. A skilful operator can write a legible and good-looking number of four figures on a label a quarter of an inch long. In the same way as numbered labels we put on specimens all other kinds of marks, for example, small round disks of green to mark the types. Varied color combinations combined with different shapes of labels permit the expression of a wide range of meanings. When, for any reason, it becomes necessary to remove the labels or to change a number, they may be scratched off with a knife from a smooth surface such as glass, or in other cases it can be done with paint remover and turpentine. The amount of enamel used for such work is very small and a half pint can will last for months, provided that the enamel be protected against drying out. We never use enamel directly from the can but pour a small amount of it, say a teaspoonful, into a small, wide-necked bottle with a ground glass cap. Another bottle of the same kind but a little larger is used for turpentine. Two bottles and a brush make the complete equipment for every color used in labeling, numbering and marking.

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BOOKS RECEIVED

APPEL, KENNETH E. and EDWARD A. STRECKER. *Practical Examination of Personality and Behavior Disorders—Adults and Children.* Pp. xiv + 219. Macmillan. $2.00.

DAVIS, HAROLD T. *The Theory of Linear Operators.* Pp. xiv + 628. 15 figures. Principia Press. $8.00.

HAHN, OTTO. *Applied Radiochemistry.* Pp. xi + 278. 69 figures. Cornell University Press. $2.50.

HOBBS, WILLIAM H. *Peary.* Pp. xv + 502. Illustrated. Macmillan. $5.00.

MACELWANE, J. B. and F. W. SOHON. *Introduction to Theoretical Seismology. Part I, Geodynamics.* Pp. x + 366. 67 figures. Wiley. $6.00.

PARKINS, A. E. and J. R. WHITAKER, Editors. *Our Natural Resources and Their Conservation.* Pp. xii + 650. Illustrated. Wiley. $5.00.

Smithsonian Institution. *Annual Report, 1935.* Pp. xiv + 580. Illustrated. U. S. Government Printing Office. $1.00.