reverse action produces infantilism, genital hypoplasia, amenorrhoea, and sterility. Overactivity of the posterior lobe may cause decreased sugar tolerance and glycosuria, and underactivity increased tolerance and obesity.

These principles may be broadly applied to the three children examined. The daughter grew rapidly at first, but the onset of menstruation was delayed and the monthly loss is now scanty. The inference in her case is that there was increased activity of the anterior lobe at first, followed later by underactivity. The absence of obesity, glycosuria, and a normal sugar tolerance suggests that the posterior lobe is functioning normally. In the two sons the main feature is the extreme obesity which is distributed in the pituitary fashion, mainly girdlewise. Sugar tolerance is only slightly increased. The skeletal and sex development differ, but both are abnormal in these respects. It appears probable, therefore, that there is a bilobar dysfunction in their cases. Except for headache, there were no symptoms of increased intracranial pressure or tumour. In all three the symptoms were such as might be expected from a single disorder of function alone. Similar cases have been described in a paper by Langmead and Calvert,⁶ and in another by Gardiner-Hill, Jones, and Forest-Smith.⁷ The latter authors noted that the obesity had existed since birth in about one-third of their cases, and that it had often followed an acute infectious fever in the remainder.

The family as a whole is of interest in showing a tendency to endocrine disorder. Rahlfs⁸ has reported a case of three brothers, two of whom were obese and under-developed. The tendency appeared to have been transmitted from the mother's side. Troisier and Monnerot-Dumaine⁹ described a family in which obesity had affected the females of three generations. In the instance described here there is tallness and obesity on the paternal side, and diabetes and obesity on the maternal. Though such tendencies are usually corrected by intermarriage, the union of the two families in the present case has apparently intensified some of the features which they had in common, as is seen in the three abnormal children. Their appearance suggests a disturbance of pituitary function, and it may well be that the less defined complaints of their forebears were caused by a similar underlying pituitary disorder.

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REFERENCES.

- ¹ Fröhlich, A.: *Wien. Klin. Rundschau*, 1900, v, 883.
- ² Paulsco, N. C.: *L'Hypophyse du Cerveau*, 1908.
- ³ Cushing, H.: *The Pituitary Body and its Disorders*, London, 1912; *Lancet*, 1925, ii, 899.
- ⁴ Dott, N. M.: *Quart. Journ. Exper. Physiol.*, 1923, xiii, 241.
- ⁵ Engelbach, W.: *Cecil's Textbook of Medicine*, 1927, 1112.
- ⁶ Langmead, F. S., and Calvert, E. G. B.: *Lancet*, 1924, ii, 1111.
- ⁷ Gardiner-Hill, H., Jones, I., and Forest-Smith, J.: *Quart. Journ. of Med.*, 1925, xviii, 309.
- ⁸ Rahlfs, S.: *Zeit. f. d. ges. Anat.*, 1926, Abt. 2, 758.
- ⁹ Troisier, J., and Monnerot-Dumaine: *Bull. et. Mém. Soc. Méd. des Hôp. de Paris*, 1929, liii, 546.

ULTRA-VIOLET LIGHT IN THE TREATMENT OF THE DULL AND BACKWARD CHILD.

BY

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WHEN I first used ultra-violet irradiation for the various physical disabilities of children, I was struck with the marked improvement in the mentality in many of the cases treated. I am sure that it must be quite a common experience for the actinotherapist to note the change in the clinical picture. The plying, querulous, irritable, anaemic, self-centred, sleepless child, who is often pot-bellied and emaciated, is transformed into a robust, well-nourished, and perfectly healthy little animal, full of life and gaiety; all this happens within a few weeks.

The following observations were made at one of the Home Office schools, which makes a specialty of training and educating dull and backward boys and borderline cases of mental deficiency. The school stands on an eleva-

tion in Norfolk, and is a perfect "sun trap." Due to the hygienic conditions under which the boys live, and the active sympathy and co-operation of the head master and his staff, the results are remarkably successful, in regard to both physical and mental development. The same standard of improvement could not be expected to obtain in every case, but with the exception of those boys who turn out to be definitely mentally deficient, it is very exceptional to find one who has not shown signs of both physical and mental development.

Such a case was brought to my notice a few months ago by the head master, who suggested that the boy might accompany a batch of boys who were coming to me for light treatment on account of their skin conditions. I append the reports of the school staff at the date of the boy's admission to the school and immediately before the treatment was commenced, the details and dates of the treatment, and an extract from the report on the boy's present condition from the same source.

On Admission.—A. B., in February, 1928, was a miserable, sickly child, nervous and ready to whine when addressed, lifeless, and with little interest in games or anything in particular. His work in the schoolroom was poor, and his power to concentrate was weak. He made a certain amount of progress, but much less than that of a normal boy.

Before Actinotherapy.—The only time he showed interest in anything was when he was in the swimming bath; he could swim and dive fairly well. An interview of any kind was a terrible ordeal for this lad; "Yes sir," and "No sir," was about all one could extract from him.

Treatment.—The mercury vapour lamp used for the treatment of this patient was that designed by Dr. Percy Hall. General exposures were given, both front and back, at a distance of 30 inches. The durations of the exposures were as follows: March 21st, 3½ minutes; March 25th, 5 minutes; March 28th and April 1st, 7½ minutes; while ten-minute exposures were given on April 4th, 8th, 11th, 15th, 17th, 22nd, 25th, and 29th.

Subsequent Report.—A. B. seems to have begun really to live and enjoy life like a normal boy, and he is making much more rapid progress educationally; he concentrates better on all his work, and especially woodwork. He now takes an interest in games, swims and dives with real energy, and has added a backward somersault to his attainments in the swimming bath. He is certainly much more cheerful; going on home leave among his friends never had this effect. We are now seriously considering entering samples of his woodwork into an open competition. In July, 1929, his weight was 68½ lb., and his height 4 ft. 8 in.; in October his weight was 69 lb., in December 70½ lb., in March, 1930, 70 lb., in June 73½ lb., and on August 12th 74½ lb. He has gained one inch in height.

If this was the only case so benefited I should not have ventured to plead for further trial by other workers in this field. I have had other results equally successful, but not so typical, and therefore not so sufficiently illustrative of the point I wish to make.

From some years of experience I know that splendid results may be achieved simply in the "lower class" dull and backward child by change of environment, plenty of wholesome, nourishing food which is temptingly prepared, fresh air, sunlight (including sun-bathing), and hygienic accommodation. When to these is added the assistance of a school staff specially trained in the work, very satisfactory results ensue almost without exception, but, as in the case here reported, some little extra treatment may be required to put the exceptional child in the way of becoming a useful citizen. In cases of unsatisfactory progress the mercury vapour lamp may prove to be of remarkable value in the therapeutic armamentarium.

I make no claim to having had a large experience of this class of case, but the results are so satisfying that I cannot urge too strongly that those who have to deal with this type of child institutionally should at any rate give the treatment a fair trial. Further, it is quite reasonable to assume that even the mentally retarded children of the better classes would benefit by this treatment in the same way as do others. At the moment there is no definite line of demarcation between the dull and backward and the mentally deficient type. Bearing in mind the present case, it is reasonable to assume that patients may be occasionally selected and their standard of mentality be considerably raised by actinotherapy.