continued for months or years. If for any reason it is to be discontinued, this must be done gradually; abrupt discontinuance almost invariably induces a grave general disturbance, with numerous fits, and sometimes status epilepticus. If, however, under treatment the patient has for many months shown no epileptic manifestations even of the slightest sort, it may be possible to reduce the daily 20 cgrm. to 10 cgrm.

In early stages of treatment the drug often causes a skin-eruption—a transient erythema, never serious—and occasionally vomiting. This, or a dangerous fall of blood-pressure and pulse-rate, may necessitate the reduction or abandonment of the drug. In severe chronic cardio-vascular affections, in uncompensated heart disease, and in renal disease the drug is very decidedly contra-indicated. Several deaths have been reported which appeared to be due to it.

The author adds notes of seventy-five cases, observed personally or collected, and a bibliography of fifty-six items.

SYDNEY J. COLE.

Analysis of more than 200 *Cases of Epilepsy Treated with Luminal.* (*Amer. Journ. Ins., April*, 1921.) *Kirk, C. C.*

In 1914 Dr. Richard Eager directed the attention of Dr. Dercum to the value of luminal in epilepsy. Luminal is pheno-barbital, and the addition of the phenyl group is claimed to advantageously increase the hypnotic power. Luminal in the cat or dog affords quiet sleep, rarely preceded by excitement. It lessens the frequency of breathing, but increases its volume. It is eliminated by the kidneys, and injury to these organs has not been observed. There is considerable range between effective and lethal doses. It kills by respiratory paralysis. The dose is 3 to 5 gr., if need be increased to but not exceeding a maximum of 12 gr. Luminal-sodium has a dosage 10 *per cent.* greater. It may be used hypodermically in 20 *per cent.* solution in distilled water. The hypodermic dose may be from $1\frac{1}{2}$ to 5 gr.

In 1919, after lengthy trial, Dercum reported astonishing improvement even in old-standing epilepsies, and stated that luminal acted as a specific in idiopathic epilepsy, seizures being abolished for several years.

In December, 1919, Kirk adopted its use with reservation. The cases selected were those with frequent and profound seizures, some having been bed-ridden for months or years. Certain results were so amazing that within a month luminal was being administered to all cases of essential epilepsy, $1\frac{1}{2}$ gr. in tablet at bedtime. Luminal-sodium appeared equally effective. In only five cases was the treatment varied, $1\frac{1}{2}$ gr. night and morning, and in two instances the same dose three times a day. In all cases on improvement the doses were reduced to to one at bedtime. Continuous treatment was persisted in for four to five months, when the stock of the preparation was exhausted; this was May 1st, 1920. During the month after cessation the number and strength of seizures were appreciably increased; but there had been no retrogression to the position prior to treatment.

All stimulants, tea, coffee, tobacco, were prohibited. The diet was unaltered except for closer supervision as to quantity. The secretion

of food by patients in their clothes proved a troublesome factor. The usual adjuncts, bowel elimination, occupation and fresh air were maintained. Serial seizures and status epilepticus were as usual combated by elimination and restricted diet, with luminal gr. v every three hours to the exclusion of the ordinary drugs.

No deleterious effects were produced. The drug is not habit-producing as there is neither pleasurable nor disagreeable sensation. In some cases the drug is effective in 24 or 48 hours, in others only after a week or more. Among 211 cases, while under treatment, 61 had no convulsions, 106 had less than 5, and only 45 had a larger number. Only 3 deaths occurred during this period, 1 from lobar-pneumonia, 1 from mitral regurgitation, and 1 from status epilepticus. The results were most gratifying, but it is necessary that some thousands of cases be treated over a period of years for final determination of its value. JOHN GIFFORD.

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5. Pathology.

A Study of Nissl's Stäbchenzellen in the Cerebral Cortex in General Paresis, Senile Dementia, Epilepsy, Glioma, Tuberculous Meningitis, and Delirium Tremens. (*Jour. Nerv. and Ment. Dis., March,* 1921.) *Noda, U.*

When Nissl, in 1899, first called attention to these rod-cells, he believed them to be glial; but in 1904 both he and Alzheimer, in their celebrated works on the general paralytic cortex, rejected the notion of a glial origin for these cells and pronounced them mesoblastic, derived from the walls of the blood-vessels, an opinion in which these authors have been followed by Mott, Ranke, Dupré, Rosenthal, and Rondoni. A glial origin was first seriously maintained in 1905 by Cerletti, and afterwards by Sträussler, Agostini and Rossi, Ris, Perusini, Marchand, Torata Sano, Simchowicz, Fuller, and Uyematsu. Some observers—Achúcarro, Bonfiglio, Cerletti (1910), Martha Ulrich, Alzheimer (1912), Spielmeyer, and now Noda—have come to the conviction that rod-cells arise from both sources; that some are glia-cells but that others are derivatives of vessel-wall elements.

In this paper (56 pages, 10 illustrations), Noda reviews the literature, and reports his observations on rod-cells in 10 cases of general paralysis, 6 of senile dementia, 1 of epilepsy, 1 of delirium tremens, 1 of tuberculous meningitis, and 2 of glioma. He has been able to confirm almost all the grounds of argument in favour of a glial origin for rod-cells—the occurrence of various forms intermediate between glia-cells and rod-cells, the presence of rod-cells in the glial encapsulation of senile plaques and in glia-cell colonies, the occurrence of rod-shaped individuals among the glial satellites of the cortical nerve-cells, the parallelism between the number of rod-cells and that of proliferated glia-cells, and the discovery of glia fibres attached to rod-cells. To these considerations he would add the presence of many rod-shaped glia-cells in his cases of glioma; such cells were found not only in the tumour, but widely distributed over the cortex. On the other hand, he believes he finds evidence that some rod-cells are proliferated vessel-wall