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Telephone conversation with Dr. William B. Scoville, Hartford, Conn., regarding his experience with temporal removals.

He has reported 17 cases. These will be included in the forthcoming volume of the A.R.N.M.D. These patients were all deteriorated schizophrenics in rather bad condition, but he was able to operate upon between 50% and 75% of them as conscious patients, the others under general anaesthesia. In one-third of the cases he carried out simple subpial uncotomy, removing an area of cortex as large as a twenty-five cent piece.

For all of his cases he makes the following approach: trephine holes,  $1\frac{1}{2}$  inches in diameter, are made in the lateral frontal region. The posterior edge of the trephine comes just across the temporal fan. The patient has his head facing upward. When he opens the dura, he sees the anterior tip of the temporal lobe, tears the pia away, allows the final fluid to escape until the temporal lobe falls laterally. He then makes his removal on the lateral surface of the temporal lobe by suction.

In about one-third of the cases, he removed the mesial temporal lobe as follows: the area of excision was 5 cm. from the midpoint of the tip of the temporal lobe backward. This carried him to the cerebral peduncle. The limit of the extent of the excision was to the posterior cerebral artery or the superior cerebellar artery. These are about together, he states. This, he calls the level of the lateral edge of the peduncle. His removal was 3 cm. in vertical diameter and  $2\frac{1}{2}$  cm. in horizontal diameter. He always opens the mesial wall of the ventricle and removes it.

This resulted in an excision of what he considered to be a third of the hippocampus, all of the uncus and all of the amygdaloid nucleus. The anterior tip of the temporal horn was about half way from the anterior to the posterior extent of his removal.

The result of stimulation of patients was as follows: He carried out the stimulations with intact brain before any removal. Stimulation of the uncus produced breath-holding, but he found that if the patient was jarred, or shaken or spoken to the ~~patient~~ breath-holding might stop. These patients, however, lost consciousness. The third phenomenon as the result of stimulation of the uncus was epileptic seizures which became generalized following what he called larval electrographic epilepsy. The electrographic observations were made by Dr. Henry at the Retreat. He considers the uncus area very sensitive for stimulation, as stimulations in the frontal regions that he could reach gave him nothing. These stimulations were carried out with low voltage. He never got sense of smell, but he admits that the patients were stupid.

His psychiatric results were meager. He carried out bilateral resections in 12 cases, 6 of them with removal of the orbital areas as well as the mesial temporal and 6 without. He finds no specific alteration of the psychosis, no improvement in any simple uncus case. The combined orbital and entire mesial surface removal of the temporal



lobe gave the best result that he has had with any lobotomy type of operation.

He says he fails to substantiate Freeman's recent publication with some neurosurgeon, not Watt, on the abolition of hallucinations. Scoville cases still hear voices.

In his series there were two patients who had epileptic seizures. He did bilateral temporals on them and both were much improved. They had had what he calls grand mal seizures. Their psychological state was not apparently improved.

He has been informed that Earle Walker has made mesial temporal excisions on monkeys and also for cases of psychosis. He has removed the amygdaloid nucleus on both sides without improvement in the psychosis. Walker, he says, was working through a temporal approach so he had to remove lateral temporal structures as well.

Scoville had had no interference with visual tracts, hearing, smell or taste. Emotionally the patients were apathetic and listless for several weeks, not "slap happy" as in the lobotomies. There was, he thinks, some childishness. After a month they did not notice much difference; no increase in sexuality. The patients are a little less inhibited.

His own philosophical conclusion from all of this work is that there are no specific cortical effects; the effect on psychoses of cortical removal is quantitative. He feels that the essential process in psychosis is going on in a subcortical area.

He points out that the best results which he has had have all been in cases of surgical accident! In all of these three there was central injury either in peduncle or in hypothalamus. All of them have gone home as dramatic cures. In one case he injured the peduncle with his sucker; in another there was a haemorrhage which took place underneath the two anterior horns of the ventricles, pushing them back in the region of the third ventricle. This haematoma was evacuated; the patient had a remarkable vasomotor change. He seemed to have lost all vasomotor control; there was oedema of the lower extremities when he stood up and oedema of the head when he lay down. He lost blood pressure control. There was no persistent hyperpnoea. He developed a massive bedsore and was healed very rapidly. This patient went home a dramatic cure.