for the belief that the accessory olives and the frontal pole of the lower olive must be anatomically connected with the paleocerebellum, and the larger part of the lower olive with the neocerebellum; (4) the medio-ventral accessory olive is anatomically connected with the pars postrema cerebelli (pyramid, uvula, nodulus, flocculus, and paraflocculus); and (5) that the very large size of the medioventral accessory olives of aquatic mammals depends on the great development of the cortex of this pars postrema cerebelli, especially the paraflocculus. [Leonard J. Kidd, London, England.]

Schaffer, Karl. MORPHOLOGY OF THE RHOMBENCEPHALON. [Ztschr. f. d. ges. Neurol. u. Psychiat., 1919, Vol. XLVI, p. 95.]

Though Retzius has given very extensive descriptions of the morphology of the human brain, in the rhombencephalon and mesencephalon he has mainly devoted his attention to the dorsal surface. The author has examined 109 brains with special reference to the configuration of the ventral surface of the pons and oblongata. In about 80 per cent were found bundles, the boundaries of which could be easily traced in their longitudinal course. In some brains the olivary eminence was fused with the brain and the whole presented the appearance of a homogeneous construction, but generally the various divisions stood out in bold relief and the connection of these bundles with the pyramidal column was evident. As derivatives of the pyramidal region they could be divided into three groups, according as they were connected with the mesencephalon, the metencephalon, or the myelencephalon. The most clearly visible fasciculus was usually one which forked into two branches, one running in the direction of the spine and another running around the lower olivary pole, outward and upward (fasciculus arcuatus). Evidence that the fasciculi belonged to the pyramidal system was that they degenerated where there was ascending pyramidal degeneration. The tenia pontis was also found atrophied where the pyramid was affected, and on the side where the pyramid was not affected the tenia was intact. The presence of the pontobulbar fasciculi on the ventral surface in this region nearly approaches constancy, so that the author is of the opinion that they may be considered as belonging to the normal picture of the rhombencephalon. Beside the pontobulbar fasciculi, which were visible on the surface to the naked eye, there were others in the interior of the pons, some starting from the medial and some from the lateral border and running dorsally to the tegmental region, visible in the form of a more or less distinctly marked strand on the cross section. The fibers here divide and pursue two paths, the first taking a pontonuclear path, as shown by the examination of Hoche, Kosakas, Sanis, and others, and the second probably taking a pontocerebellar direction, as shown by the studies of the author and Reich. In conclusion, the author directs attention to the fact that the fasciculi branching from the pyramid partly emerge on the ventral lateral surface and are partly

visible within the cross section, therefore in the depth, and that they are therefore fasciculi superficiales and profundi. Both kinds of derivatives of the pyramid having two destinations (either they proceed to the motor nuclei of the pons or of the oblongata, or they tend to the cerebellum), the pyramidal path has, beside the corticobulbar or spinal division, also a corticocerebellar section, which indicates a direct influencing of the cerebellum by the motor spheres of the cerebrum. [J.]

v. Stauffenberg. THE EXTRA-PYRAMIDAL MOTOR SYSTEM AND REPORT OF A SO-CALLED "ATROPHIE OLIVO-PONTO-CEREBELLEUSE." [Zeitsch. f. d. ges. Neurol. u. Psychiat., Vol. XXXIX, p. 1.]

The case was that of a man sixty-two years of age who had always been healthy until the onset of the present disease, seven years before he came to the author's observation. Gradual disturbances of articulation were manifested, awkwardness and stiffness in movements, tremor in writing. Later the arms became stiff and at every innervation assumed distorted positions which could be corrected only with great difficulty. The discoördination of the separate sections of the body progressed rapidly; speech became unintelligible, spastic, explosive. Then followed disturbances of swallowing and chewing, rigidity of features, no palsies, no real spasms or contractions, depressive emotional state, restricted intelligence, reflexes normal, in recent years bladder disturbances. Death from bronchial pneumonia. Clinical diagnosis, degeneration of the lenticular nucleus region. Result of autopsy: noninflammatory atrophy of the cerebellum and the regions of the pons and olive dependent thereon; atrophy of the temporal brain, and further a degeneration of the lenticular nucleus (apparently of vascular nature, resembling arteriosclerosis), and general (secondary?) injury of the nerve cells of the motor system. The author assumes a primary degeneration of the medulla in the cerebellar hemisphere, perhaps also in the brachia of the pons. The case belongs to the olivo-ponto-cerebellar atrophy (Dejerine-Thomas). The cerebellum exercises a tonic or coördinating influence of a lower order, in part possibly directly over Deiter's nucleus and in part over the red nucleus. On this basis the coördination functions of higher order are built up the system including the red nucleus, thalamus and frontal brain, which stands as the last and highest formation above the other systems; from it proceed important dynamic influences, such, for example, as those insuring continuity of series of movements. Thus the cerebellum and temporal brain participate in the construction and conduction of complicated movements and of the impulses which permit static conditions. Of these two organs one may replace the other; the cerebellum, for instance, undertakes the smooth evolution of rapid and complicated series of innervations, especially in speech. Proper performance of these tasks presupposes that the innervation mechanism should be intact. Here the essential rôle belongs to the lenticular nucleus, and the case described is an example of a lesion in the three main organs, constituting the