

COMPARATIVE TABLE OF CARBONIFEROUS FORMATIONS.

AGE.		MISSISSIPPI PROVINCE.	SOUTHWESTERN PROVINCE.	URAL PROVINCE.
CARBONIFEROUS	Late	Cimarronian Wanting?	Cimarronian Guadalupan	Tataran (Upper P.) L. and M. Permian
	Mid	Oklahoman Missourian Des Moines Arkansan	Maderan Manzanan Wanting Ladronesian	Artinsk Upper Carboniferous } Middle Carboniferous
	Early	Mississippian	Socorran	Lower Carboniferous

thorities on the Russian Permian formation, and who has visited the Kansas localities, places the Marion beds, which are immediately beneath the Red Beds, on a level with the Russian Artinsk terrane. Personal observations in both fields point strongly to the correctness of this correlation. The Artinsk formation is older than any terrane of the original Permian sequence. Girty, who quite recently has also rather critically examined the Guadalupan section in Trans-Pecos Texas, concludes that if this fauna is Permian then certainly that of Kansas is not.

It would seem then that our conceptions of the American Permian formations must undergo very radical changes. Our scheme of comparison with the original Permian section of Russia would then be about as in the table given above.

CHARLES R. KEYES.

NEW MEXICO STATE SCHOOL OF MINES.

QUOTATIONS.

PROFESSOR M'KENDRICK AND THE PROGRESS OF PHYSIOLOGY.

THE valedictory address delivered by Professor J. G. M'Kendrick, at the close of the summer session of the University of Glasgow, on the occasion of his resignation of the professorship of physiology, provides a striking account of the progress of physiological science during the past thirty years. In 1861, when Professor M'Kendrick attended a course of lectures at Aberdeen, there was no attempt at demonstration except by diagrams and a few microscopes on a side-table. There were no experiments, and the only instrument displayed was a sphygmograph. But a little later Goodsir, of Edinburgh, brought from continental schools of physiology to the Univer-

sity of Edinburgh such instruments as myographs, kymographs, electrical appliances and other apparatus, and the teaching of practical physiology was soon firmly established under Argyll Robertson. Professor M'Kendrick himself installed similar teaching in the University of Glasgow in 1876, the date of his appointment to the chair of physiology. The requirements of modern physiological teaching are shown by a statement in the address that while Professor M'Kendrick has worked and taught for thirty years in five rooms, twenty-five are apportioned to physiological work in the new buildings. Reviewing the progress of physiology, Professor M'Kendrick detailed the advances made in histology and expressed the doubt whether much more progress can be expected. Graphic methods have been elaborated during the same period, and the action of electrical stimuli on muscle and nerve elaborately worked out. The study of the functions of living isolated organs, modern vivisectional methods, our knowledge of the nerve paths in the central nervous system, and the subject of internal secretions, are all among the triumphs of physiological science during the past thirty years, and were each passed in review. In conclusion, Professor M'Kendrick indicated physiological chemistry as the direction in which progress will be made during the next few decades.—*Nature*.

ASTRONOMICAL NOTES.

THE SYSTEM OF CASTOR.

CASTOR was one of the first close double stars known and one of those which led Sir William Herschel to the belief that such stars form real binary systems.