NEW MEXICO GEOLOGY.

IN SCIENCE for June 15, Dr. C. R. Keyes, formerly president of the New Mexico School of Mines at Socorro, gives a general section of the formations of New Mexico. This is a sequel to a series of papers in other scientific journals, particularly the *Journal of Geology*, the *American Geologist* and the *American Journal of Science*, in which he has discussed various aspects of the geology of the territory. These articles treat of phases of the subject of great interest to geologists as bearing on the geology of a field as yet little known, but the author can not well be congratulated on the extent of the contribution he has made to our knowledge of the geology of this region. There are many inaccuracies and the papers are manifestly designed to anticipate the results of investigations rather than as a record of actual observations. Heretofore, Dr. Keyes has maintained there was no evidence that Lower Paleozoic formations were present in New Mexico. He places them in the column now published, however, with thicknesses and lithological characteristics but fails to advise us as to any circumstances concerning their discovery.[1] He gives the Devonian as made up of limestones, whereas, so far as known, they consist entirely of shales.[2] Limestones and shales are said to constitute the Carboniferous thus neglecting entirely the great body of sandstones contained in the upper division. The distribution of formations shown in the map (plate 7) Water Supply Paper No. 123, U. S. Geological Survey, is considerably at variance with the facts, as is likewise the discussion given there and elsewhere of the faults and unconformities. But discrepancies of this kind are doubtless inevitable in observations made from car windows and through a field glass. A large number of formation names are proposed, but we look in vain for detailed sections or descriptions showing their character and distribution. In this respect the author does not seem to be in accord with leading geologists generally, who maintain that no formation name should be proposed without adequate definition. The correlation of formations in regions widely separated, where detailed maps and careful paleontological studies are wanting, is usually regarded as a hazardous undertaking, but Dr. Keyes does not appear to find it so. If Dr. Keyes has at hand the data upon which these conclusions are based it is to be regretted he has not published them. We are told that this 'correlated scheme of rock succession' is based on information obtained through the work of the "Geological and Mineral Survey of New Mexico under the direction of the School of Mines at Socorro." Unfortunately we have no knowledge of such an organization aside from the mention made of it in this connection. Geologists generally would be interested to know something of an organization carrying on so important a work. It appears to be wholly unknown even in New Mexico.

These exceptions are possibly of no consequence and if his attention were called to them the author would doubtless reply, as in a former instance when the writer of this note reminded him that a fossil he had figured was wrongly named, that it was a 'matter of no importance.'

As a whole the papers on New Mexico geology which issue from the above named writer's pen in such rapid succession abound in inaccuracies, while the absence of detailed description or evidence of careful field work deprives them of any value they might otherwise possess.

C. H. GORDON

U. S. GEOLOGICAL SURVEY,
August 25, 1906

[1] The announcement of the discovery of these formations in New Mexico was first made by L. C. Graton and the writer in SCIENCE for April 13, 1906, p. 590.

[2] *American Journal Science*, 4th Ser., Vol. 21, p. 394, 1906.

GEOLOGICAL WORK IN ARKANSAS BY PROFESSOR PURDUE

TO THE EDITOR OF SCIENCE: A paragraph in my letter to Doctor Branner, published in the issue of SCIENCE of December 7, is possibly open to misconstruction and may do injustice to Professor Purdue, of the University of Arkansas. The paragraph is as follows: