on medicine, magic and religion, on November 14 and 16.

ANOTHER course of Chadwick public lectures has been arranged. Professor Stirling gave the first of three lectures on fatigue and its effects on industry and efficiency, at the Royal Society of Arts, Adelphi, on October 27. Dr. Charles Porter began a course of three lectures on the health of the future citizen, at the Norwich Museum on November 2; Dr. J. C. Nash, county medical officer and chief school officer, Norfolk, will give a lecture on baby saving for the nation, at the Hampstead Central Library on November 20; and Mr. Paul Waterhouse will give the first of three lectures on architecture in relation to health and welfare, at the Surveyors' Institute, Westminster, on November 30.

THE birthplace of Weierstrass in Osterfelde in Westphalia has recently been marked by a memorial tablet.

THE death is announced of Arthur G. Smith, head of the department of mathematics and astronomy in the University of Iowa.

A. B. ALEXANDER, assistant in charge of the Bureau of Statistics of the United States Fisheries Commission at Washington, has died.

DR. JULIUS H. EICHBERG, professor of materia medica in the college of medicine, University of Cincinnati, died on October 31, 1916.

THE death is announced of Dr. Jean-Joseph Picot, formerly professor of clinical medicine at the Bordeaux School of Medicine, at the age of seventy-seven years, and of G. Salomon, professor of physiological chemistry at the University of Berlin, aged sixty-seven years.

MAURYCY RUDZKI, since 1902 director of the Cracow Observatory, has died at the age of fifty-four years.

AT the invitation of Dr. E. C. Pickering, the fourth annual meeting of the American Association of Variable Star Observers will be held at the Harvard College Observatory, on November 18, 1916.

IT is announced from Sweden, that no Nobel prizes for science or medicine will be awarded for this year, but that the money will be reserved for 1917. The money for the prizes for 1915 has also been reserved and will be added to the special fund.

WE learn from *Nature* that Professor A. S. Donner, director of the observatory at Helsingfors, has presented to the university, of which he was formerly rector, the sum of £8,000, to ensure the continuance, and indeed the completion, of the "Catalogue photographique du Ciel, Zone de Helsingfors," begun under his direction in 1890. Hitherto the work has been paid for, partly by the university, partly by Professor Donner out of his private means. The sum now allotted by him is intended to cover all expenses for twelve years, when, at its present rate of progress, the task should be finished.

UNIVERSITY AND EDUCATIONAL NEWS

AMHERST COLLEGE has received a gift of $100,000 from Mrs. Rufus Pratt Lincoln, of Plainfield, N. J., to establish a chair of science. Professor John M. Tyler, professor of biology in the college since 1879, has been elected the first Rufus Tyler Lincoln professor. Amherst College has also received a bequest of $5,000, to be known as the Edward Tuckerman Fund, for work in botany.

PROFESSOR WILLIAM ESSON, late Savillian professor of geometry at Oxford, by his will gives ultimately to Merton College and the University of Oxford his estate, the value of which is about $55,000.

DR. JOHN SHARSHALL GRASTY, formerly associate professor of geology at the University of Virginia, has resigned to take charge of the new department of mining geology recently established at Washington and Lee University. Dr. Albert William Giles has been appointed adjunct professor of geology in the University of Virginia.

THE *Bulletin* of the American Mathematical Society announces appointments of instructors in mathematics as follows: C. H. Clevenger in the school of mines of the University of Minnesota; C. N. Reynolds in Wesleyan University; P. R. Rider in Washington University;

J. J. Tanzola, of Columbia University, in the U. S. Naval Academy, and Dr. C. H. Forsyth, of the University of Michigan, in Dartmouth College.

DR. CHAS. H. OTIS has resigned his position as instructor in botany and assistant botanist at New Hampshire College and Experiment Station, to accept a position in the biological laboratory at Western Reserve University. Dr. Otis will have charge of the instruction in botany in Adelbert College and the College for Women, taking the place of Dr. Wm. H. Weston, who recently resigned.

MR. PAUL C. GRAFF has been appointed instructor in botany at the University of Montana.

DISCUSSION AND CORRESPONDENCE

FURTHER EVIDENCE BEARING ON THE AGE OF THE RED BEDS IN THE RIO GRANDE VALLEY, NEW MEXICO

THE almost total lack of invertebrate fossils in the Red Beds exposed on the eastern side of the Rio Grande Valley has made it very difficult to determine their exact position in the geologic column. In some localities definite determinations have been made, largely upon stratigraphic evidence, showing that the red sandstones and shales occur at horizons ranging from the Upper Pennsylvanian to the Cretaceous. The work upon this region has been reviewed by Lee and Girty.[1]

During the last summer, while engaged in a survey of the Permo-Carboniferous boundary line for the Carnegie Institution, the writer was able to spend a short time in the Red Beds near Socorro, New Mexico. The examination was made possible by suggestions and maps furnished through the kindness of Dr. N. H. Darton, of the U. S. Geological Survey.

Two or three miles north of Carthage, New Mexico, the prominent ridge of Dakota sandstone is underlain by a series of shales and sandstone varying in color from bright green to brilliant red with a few patches of conglomerate and impure limestone of limited horizontal extent. The arid valley between the ridge and the hills to the north capped by the San Andreas limestone affords an excellent exposure of the beds.

Lee and Girty reported a few doubtful invertebrate fossils from the San Andreas at this place and speak of 200 feet of red beds overlying the limestone at the old lime kiln near Carthage.

No fossils were found in these upper beds and their age is a matter of conjecture.

They also report the Abo and Yeso formations as present, but the exact locality of their section is not given. The red beds above the San Andreas limestone are faulted down against it just at the old lime kiln and can be traced up the valley for several miles. Close to the lime kiln and about half way up to the base of the Cretaceous the writer found a small bed of conglomerate containing an abundance of lamellibranchs in a very small patch. These have not yet been identified.

A few fragments of bone were found in the same bed and further up the valley, but at a lower level, other fragments were found. The following list shows them, and the containing beds, to be clearly Triassic.

1. A small section, about four inches, of the snout of a slender-jawed Phytosaur, suggesting *Angistorhinus* or *Mystriosuchus,* with teeth diverging at an angle of 15 to 20°. This was found in a concretion in a dark brown, impure limestone occurring as a lens in the red shale.

2. Three vertebræ, found at different localities, apparently Phytosaurian.

3. The proximal and distal ends of a large limb bone, badly worn and unidentified, but certainly not related to any of the known forms of Permo-Carboniferous vertebrates.

4. Two small dorsal plates. One with a median dorsal ridge and the other, regularly hexagonal and with a ventral rugosity evidently for attachment to the dorsal spine of a vertebra.

5. Several imperfect ends of large limb bones; two suggesting the ends of a tibia and a radius respectively.

6. Two fragments of thoracic plates. One

[1] Lee, W. T., and Girty, Geo. H., "The Manzano Group of the Rio Grande Valley, New Mexico," Bulletin 389, U. S. Geological Survey, 1909.