

tricts in the entire west. The features of the system of farming which separate this from other sections are complete crop rotation and maintenance of soil fertility by means of live stock. Dairying and stock raising have a firm place in one of the most completely developed systems of cultivation in the Mississippi valley. In essential respects this section is comparable to the system of farming to be found at its best in eastern Pennsylvania, especially in the Susquehanna valley. Since 1895 prices of land have gone up throughout the central and northwestern states, to a level which no one could possibly have anticipated. Farm lands in Illinois (west central) sell from \$100 to \$150 per acre, along the route of the C. B. & Q. R. R. The tenant pays a rental of from \$5.00 to \$7.00 per acre and has made money at that. But he has in all probability not made money enough to induce him to invest it in farm lands there. The value of lands has reached a point at which he can earn more on his capital as a tenant than as an owner of high-priced lands. Consequently tenantry and landlordship are on the growth with the rise of the purchase price of agricultural lands.

One explanation of this rise in land values is the presence of surplus capital in the hands of farmers. A farmer who had his farm nearly or entirely paid for before the rise of farm prices since 1895 has been able, as a rule, to put money in the bank year by year. If he has not put it into securities which the financial centers of the country manufactured for consumption by the money-making public, he naturally may be expected to avail himself of opportunity to buy land as it comes into the market. This form of interest he knows something about, and he puts his savings in it regardless of the low rate of returns he knows he must get. But he knows it is sure. Take a corresponding case in land values in Pennsylvania. Farms are being sold in much of the most improved portion of that state at prices which represent little more than the value of the improvements. Farm land in a high state of cultivation is valued at less than has been the case for some years. Productivity has not declined and prices have

improved with the general rise of agricultural prices. Where then does the cause for the difference in values in western and eastern farming lands lie?

JOHN FRANKLIN CROWELL.

WASHINGTON, D. C.

THE NATIONAL ACADEMY OF SCIENCES.

THE autumn meeting of the National Academy of Sciences was held at Columbia University on November 15 and 16. No business of general interest was transacted at the scientific session. The papers presented were as follows:

W. H. DALL: 'Biographical Memoir of Charles Emerson Beecher.' (By title.)

W. K. BROOKS: 'On the Affinities of the Pelagiae Tunicates.' (Illustrated by lantern slides.)

W. K. BROOKS and S. RITTENHOUSE: 'The Life History of *Turritopsis*.' (Illustrated by lantern slides.)

W. K. BROOKS and R. P. COWLES: '*Phoronis architecta*, its anatomy, life history and branching habits.' (By title.)

JOHN TROWBRIDGE: 'On the Electrical Resistance of a Vacuum.' (Illustrated by lantern slides.)

FRANZ BOAS: 'Psychic Association in Primitive Culture.'

M. I. PUPIN: 'Time Electrical Impulses.' (Introduced by R. S. Woodward.)

C. BARUS: 'The occurrence of maxima and minima of atmospheric nucleation in approximate coincidence with the winter and summer solstices respectively.'

C. A. BAUER: 'The System of Magnetic Forces causing the Secular Variation of the Earth's Magnetism.' (Introduced by R. S. Woodward.)

RUSSELL H. CHITTENDEN: 'The Influence of Low Proteid Metabolism on the Formation and Excretion of Uric Acid in Man.' (Illustrated by lantern slides.)

EDWARD W. MORLEY: 'Note on the theory of experiments to detect the second power of the aberration of light.'

EDWARD W. MORLEY: 'Report of a repetition of the Michelson-Morley experiment on the drift of the earth through the luminiferous ether.'

C. S. PEIRCE: 'On Topical Geometry.'

N. YATSU: 'An Experimental Demonstration of the Formation of Centrosomes *de novo*.' (Presented by E. B. Wilson.)

T. H. MORGAN: 'An Analysis of the phenomena of Organic Polarity.' (Introduced by E. B. Wilson.)

E. B. WILSON: 'Experiments on Prelocalization in the Annelid Ovum.'

C. E. MENDENHALL: 'The absolute value of the Acceleration of Gravity determined by the Ring-Pendulum Method.' (Presented by R. S. Woodward.)

R. S. WOODWARD: 'The Double Suspension Pendulum for measuring the Acceleration of Gravity.'

EDGAR F. SMITH: 'Biographical Memoir of Robert Empie Rogers.' (By title.)

CHARLES F. HASTINGS: 'A Determination of the Dispersive Power of the Human eye.'

CHARLES F. CHANDLER: 'The Air in the New York Subway.'

SCIENTIFIC NOTES AND NEWS.

THE Hotel Walton, Locust and Broad Sts., Philadelphia, has been chosen as the headquarters of the American Association for the Advancement of Science and affiliated societies, for the meeting that opens at the University of Pennsylvania, on Wednesday, December 28.

THE seventeenth winter meeting of the Geological Society of America will be held at Philadelphia, beginning on December 29. The meeting will be called to order by President J. C. Branner, at 10 o'clock.

THE Royal Society has awarded its Rumford medal to Dr. Ernest Rutherford, professor of physics at McGill University, for his researches on radioactivity.

M. PERROT, professor of pharmacology, University of Paris; M. Henri Moissan, professor of chemistry, University of Paris; K. H. F. Rosenbusch, professor of mineralogy and geology, University of Heidelberg; Otto Bütschli, professor of zoology and paleontology, University of Heidelberg; Wilhelm Ostwald, professor of chemistry, University of Leipzig; Wilhelm Pfeffer, professor of botany, University of Leipzig, have been elected corresponding members of the Vienna Academy of Sciences.

THE Rev. Stephen D. Peet, editor of the *Antiquarian*, has been elected a corresponding

member of the Anthropological Institute of Great Britain and Ireland.

ON the evening of November 14, a dinner was given in Cambridge to Sir John Murray and Professor Albrecht Penck, of Vienna, a number of professors and students of Harvard University being present.

DR. J. K. SMALL, curator of the Museum of the New York Botanical Garden, is in Florida studying the flora of that region.

UNDER the auspices of the Corporation of Newbury, a public museum was formally opened in that borough, on October 26, by Mr. Jonathan Hutchinson, F.R.S.

SIR JOHN BURDON-SANDERSON, F.R.S., has been made a perpetual delegate of the University Museum, Oxford.

THE following is a list of fellows who have been recommended by the president and council of the Royal Society for election into the council for the year 1905, at the anniversary meeting to be held in November 30: *President*, Sir William Huggins, K.C.B.; *treasurer*, Mr. Alfred Bray Kempe; *secretaries*, Professor Joseph Larmor, Sir Archibald Geikie; *foreign secretary*, Mr. Francis Darwin; *other members of the council*, Dr. Shelford Bidwell, Mr. George Albert Boulenger, Colonel David Bruce, R.A.M.C., Mr. Frank Watson Dyson, Professor Percy Faraday Frankland, Professor Francis Gotch, Dr. Ernest William Hobson, Professor John Newport Langley, Mr. John Edward Marr, Sir William Davidson Niven, K.C.B., Professor William Henry Perkin, Jr., Professor John Perry, Mr. Adam Sedgwick, Dr. William Napier Shaw, Professor William Augustus Tilden, Rear-Admiral Sir William Wharton, K.C.B.

PROFESSOR E. SALKOWSKI, director of the chemical department of the Pathological Laboratory of the Charity Hospital at Berlin, well known for his work in physiological chemistry, celebrated his sixtieth birthday on October 11.

PROFESSOR THEOBALD SMITH, of Harvard University, will deliver an address upon 'The Place of Research in the University Medical School,' before the Harvard Medical Society of New York City, at the New York Academy of