progress in electrolytic refining, Chairman F. R. Pyne, United States Metals Refining Company, Carteret, New Jersey. An innovation at this meeting will consist of round table discussions on the following four subjects: "Electric furnace brass foundry practice," "Organic electrochemistry," "Chlorine," "Electroplating." Trips to local plants will be made.

DR. EDMUND OTIS HOVEY, curator of the department of geology and invertebrate paleontology in the American Museum of Natural History, will sail from Vancouver, B. C., on June 29, for Sydney, Australia, where he will attend the meetings of the second Pan-Pacific Scientific Conference as the representative of the museum. He will also represent the New York Academy of Sciences. The conference is to be held in Melbourne and Sydney from August 13 to September 3. Dr. Hovey will visit various places of geological interest in Australia and on his way back to America will make a tour of the most important geological localities in New Zealand. One purpose of the trip is to obtain information which will be of value in the construction of additional geological relief models at the museum. Another purpose is to establish exchange relations with the museums in New Zealand and to extend those now enjoyed with the museums of Australia.

THE aggregate receipts of the German-Austrian Fund (Graham Lusk, treasurer) amounted to $2660.26, subscribed to by eighty-eight American scientists in sums ranging from $5 to $450. The money was distributed among thirty-three German-Austrian medical laboratories which were designated by the donors in sums ranging between $25 to $300. The account has been closed and has been audited by Dr. Rufus Cole. The following letter is a typical response: "Please accept my most grateful thanks for your most generous gift. Almost daily I think with gratitude of the help which my department has received from America. I am fully aware of the fact that, but for this help, it would have been impossible to continue our classes and scientific investigations."

UNIVERSITY AND EDUCATIONAL NOTES

ANNOUNCEMENT has been made of the merger of the Moore School of Electrical Engineering, provided for in the will of the late Alfred Fitler Moore, and the School of Electrical Engineering of the University of Pennsylvania. The new school will be known as the Moore School of Electrical Engineering and will have the income from a fund of $1,500,000.

DR. WILLIAM D. CUTTER, for the past several years secretary of the New York State Board of Medical Examiners, has resigned to become dean of the New York Postgraduate Medical School and Hospital.

THE following promotions and appointments in the clinical staff of Stanford University School of Medicine, San Francisco, are announced: Dr. William P. R. Clark, professor of medicine in charge of tuberculosis work; Dr. Leo Eloesser, clinical professor of surgery; Dr. Philip K. Gilman, clinical professor; Dr. John A. Bacher, professor of surgery in diseases of the ear, nose and throat; Dr. Harry L. Langnecker, professor of orthopedic surgery and in charge of physiotherapy; Dr. James A. Cutting, clinical professor of medicine to conduct classes in psychiatry.

ASSISTANT PROFESSOR LLOYD L. SMAIL, of the University of Washington, has been appointed to an assistant professorship of mathematics in the University of Oregon.

DR. CARL A. MURCHISON, professor of psychology at Miami University, has been appointed full professor of psychology at Clark University. He will fill the vacancy caused by the resignation of Dr. Kimball Young.

PROFESSOR LEONARD BAIRSTOW has been appointed as from September first next to the Zaharoff chair of aviation tenable at the Imperial College of Science and Technology, London. He has been head of the aeronautical department of the National Physical Laboratory and since 1920 has been professor of aerodynamics at the Imperial College.

DISCUSSION AND CORRESPONDENCE

THE PENNSYLVANIAN OF NORTH CENTRAL TEXAS

WHEN I was at Lota, Chile, I found the federal gendarmerie guarding the property of the Chilean Coal Company—an entirely private

concern—with the zeal displayed by the guards at Potsdam before the all highest fled to Holland, and it was impossible to even look at the dumps without telegraphic permission from the directors in far distant Valparaiso. I suppose the so-called manager would have fainted if permission had been asked to go in the mines.

E. DeGolyer, in a recent number of *Economic Geology,* has made a plea for greater cooperation between economic and other geologists, which is both timely and well put. Companies employing economic geologists, which are to a large extent oil companies, have abundant means for securing the cooperation of most geologists, but the geologist, working upon some special problem, finds it well-nigh impossible to obtain needed information or paleontologic material from the companies, when such help would in no wise affect the company interests.

I could, of course, enumerate several notable exceptions to this generalization and recognize fully the commercial necessity for holding back certain types of information and material, but generally a company will hold data of no present or future value, or even destroy records if they decide to abandon some contemplated development, seemingly actuated by eighteenth century business secrecy, or by the motive that what cost them good money should not be permitted to benefit any one else.

Oil companies are not the only ones imbued with this notion and I know of no more notable example than the Cerro de Pasco Mining Company, which has maintained a corps of geologists for some years and has presumably carried out the only detailed studies of a considerable area in the whole Andes. Much of the information accumulated is of no special value to the company but would be of the greatest importance in stratigraphic and historic geology. For example the fossil plants associated with the company's coal development at Goyllarisquisca would be of the utmost importance in their bearing on plant migrations and the geographic relations between North and South America during the Cretaceous, and yet a letter addressed to their chief geologist on this subject several years ago has never even been acknowledged.

Since its appearance nearly two years ago I have looked in vain for a review or appreciation of Bulletin 2132 of the University of Texas entitled "Stratigraphy of the Pennsylvanian formations of North-central Texas" by Frederick B. Plummer and Raymond C. Moore, having seen but one very brief notice. This work owes its existence to the enlightened policy of the Roxana Petroleum Corporation and it seems to me that their policy can not be commended too highly. Although not qualified to pass an expert opinion on the subject matter, I would like to indicate its general character and the intrinsic evidence of meritorious work that it exhibits.

It comprises a rather full discussion of the stratigraphy of the Pennsylvanian rocks of North Central Texas, an area of approximately 7,000 square miles. These rocks include the formations of the Bend, Strawn, Canyon and Cisco groups with a total thickness of over a mile and the report includes a full account of previous work, local sections, finely executed plates of characteristic fossils and is accompanied by a geologic map of the whole region on a scale of 1/187,500, or approximately three miles to the inch, representing the combined results of all of the Roxana geologists who have worked in the area. There is a chapter on the structure of the Pennsylvania rocks, a summary of the physical history of Pennsylvania time in the region and a summary chapter on correlation, which is discussed at length in connection with the description of the stratigraphic units throughout the body of the work. The report closes with a table showing the distribution of the fauna and a detailed list of fossil localities. The former lists 1 Protozoan, 3 Porifera, 17 Coelenterata, 3 Vermes, 18 Echinoderma, 39 Bryozoa, 94 Brachiopoda, 57 Pelecypoda, 69 Gastropoda, 43 Cephalopoda, 7 Trilobita and 3 Pisces. This enumeration will vouch for the extensive nature of the paleontologic evidence upon which the author's conclusions are based.

The authors dissent from the conclusions of Girty and others that any part of the Bend series is of Mississippian age and correlate it with the Caney and Wapanucka of Oklahoma and the Morrow of Arkansas. Admitting the late Mississippian character of some of the Barnett shale brachiopods and goniatites, the presence of *Fusulina, Leda bellistriata* and the goniatite genera *Glyphioceras* and *Gastrioceras,*

as well as the general stratigraphic and paleogeographic relations, make out a good case for the Pennsylvanian age of these beds.

The work is illustrated by many halftones, sketch maps and diagrams and fully measures up to the highest standards. The authors are to be commended on the excellence of their work which, with the liberal policy of their company already referred to, sets a standard that other companies might well imitate to the lasting advantage of geologic science.

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THE JOHNS HOPKINS UNIVERSITY

THE STATUS OF TEREDO BEACHI AND TEREDO NAVALIS

I HAVE so far refrained from commenting on the efforts of Professor Kofoid and his students to discredit the validity of my *Teredo beachi*. A review in the *Nautilus* for April, 1923, on page 140 of Robert Cunningham Miller's paper on the "Variations in the shell of Teredo navalis in San Francisco Bay," University of California Publication in Zoology, Vol. 22, No. 2, pp. 293-328, bears the following statement which is a slightly abbreviated rendition of Miller's statement on page 25 (317) "The local varieties, including *T. beachi* Bartsch, have not been found sufficiently differentiated to warrant their being classed as subspecies, much less as species."

This, I feel, makes it necessary for me to protest lest my silence be construed as concurrence in the opinion of my West Coast critics.

The paper in question is a beautiful intensive study of *Teredo beachi* Bartsch and, barring the summary, in which the systematic status of this species is discussed, a splendid piece of work. It is unfortunate that the author in question, as well as Professor Kofoid himself, has not made an equally intensive study of the European *Teredo navalis,* which I have been unable to find in American waters, before publishing this summary, for I am certain that had they so done, they themselves would have become acquainted with the characters that differentiate the *navalis* group from the *Teredo morsei* group, to which *Teredo beachi* belongs.

In *Teredo navalis,* the denticles on the anterior median area have but a single cusp. In the *Teredo morsei* group they are multicuspid. That at once differentiates the two groups and there are hosts of other characters that separate the members of these groups into specific or subspecific elements.

The only member of the *navalis* group that I have found so far in American waters is the New England shipworm, *Teredo novangliae* Bartsch. All the other true *Teredos* seen belong to the *morsei* group, both on the east and the west coast of America.

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NICOTINE AS A POULTRY VERMIFUGE

FOLLOWING the work of Herms and Beach in 1916, the University of California Agricultural Experiment Station has been more or less continuously interested in the use of tobacco and tobacco products as a vermifuge for the intestinal worms of poultry, *Ascaridia galli* Schrank 1788 (= *A. perspicillum*). Work carried on during the past year and a half with hundreds of hens has shown that commercial tobacco dust containing from 1½ to 2 per cent. nicotine if fed in the mash in quantities equalling 2 per cent. by weight of the latter over a period of one month would remove from 98 to 100 per cent. of these worms. The results have also demonstrated that from 80 to 85 per cent. of the cecum worms, *Heterakis gallinæ* Gmelin (=*H. papillosa,* = *H. vesicularis*) are removed by this treatment. The tobacco dust must be mixed with the mash at intervals not exceeding one week on account of the volatility of the nicotine in the presence of air.

Diluted nicotine sulfate administered to the birds directly in quantities sufficient to remove the worms is decidedly toxic. Mixed with the mash or drinking water it renders them so distasteful that the birds will not eat or drink properly. However, by mixing the nicotine sulfate with Lloyd's Alkaloidal Reagent, a selected fuller's earth, perfect elimination of the intestinal worms has been secured, although the cecum worms remained unaffected. The method employed was that of mixing the nicotine sulfate (40 per cent. nicotine) at the rate of 6.6 cc. to 16 grams of the reagent. This mixture was then placed in gelatine capsules (No. 2), one of which when filled weighed