Professor Nicola Parravana, of Rome, president of the Associazione Italiana di Chimica, to a request sent him through S. E. Professor Filippo Bottazzi, of Naples, by a meeting held at Casa Italiana, Columbia University, on January 26. The initial officers are: *President,* Jerome Alexander; *Vice-president,* William C. Mac Tavish; *Secretary and Treasurer,* Genio F. Reale; *Council,* Kenneth C. Blanchard, Frank Brescha, G. de Bethune, Alexander O. Gettler, Joseph Matiello, Vittorio Molinari Ernest Conti, Wallace T. Cohoe, Harold C. Urey and F. Quattrone.

THE Latin-American Congress of Physical Therapy, X-ray and Radium will hold its first annual congress in Mexico City, from August 29 to September 5, according to an announcement made by Dr. Cassius Lopez de Victoria, executive director of the society and director of the National University of Mexico. The gathering will include physicians and workers in the field of medicine, surgery and allied subjects. Five tours to the congress have been arranged by the American Express Travel Service, with a home-bound opportunity of attending the conference on physical therapy at Kansas City, to be held from September 9 to 12. On the ocean route the delegates will leave New York on August 22, on the steamship *Yucatan.* After visiting Havana, Mexico will be entered through Vera Cruz. Sightseeing excursions will cover Mexico City and its environs. Delegates going by rail will leave New York on August 27. They will cross the boundary at Nuevo Laredo, arriving at the capital on August 31. The two tours have been planned to allow stopovers at Kansas City with a combination privilege of the water route to Mexico and return by rail.

A GROUP of seventy German physicians sailed from Hamburg on June 26 to make a study of hospitals in the United States. The trip was organized by the German Association for Medical Study. They will be the guests of the American Medical Association and the American Academy of Medicine. After leaving New York, a visit is planned to the hospitals of Buffalo, Detroit, Chicago, Philadelphia and Washington.

THE London *Times* publishes the following wireless message from Dr. Noel Humphreys, leader of the Oxford University Expedition which is exploring Ellesmere Land, and especially Grant Land, after wintering at Etah in North Greenland: "Thule (N. Greenland), June 7.—All well. All members of the expedition have returned to Etah. Each party got into unexplored country and discovered new mountains. The short crossing of Ellesmere Land has been completed and valuable geological work done. Unexplored Grant Land has been penetrated and a new range estimated at 10,000 feet found north of United States Mountains. The expedition is making scientific collections locally until the ship arrives."

A REUTER'S dispatch, printed in *The New York Times,* reads: "A complete issue of the works of Sir Isaac Newton and a new international botanical dictionary compiled in eight languages are to be published in Soviet Russia. The botanical dictionary will be in Latin, English, French, German, Russian, Italian, Dutch and Armenian. It is being compiled by Professor A. L. Bedelyan, of the Armenian Agricultural Institute. When complete it will contain an alphabetical list of the names of every known plant. Printing of the Newton edition will be carried out by the History of Science and Technique of the Academy of Science of the U.S.S.R. in conjunction with the Scientific-Theoretical Publishing House."

THE Lassen Volcano Observatory, which was established by the U. S. Geological Survey in 1926 for the study of volcanic processes and recent volcanism in northwestern United States, was discontinued on June 30 as an economy measure.

ACCORDING to the United Press customs officials at Tientsin have forbidden the exportation of the archeological collections made by Sven Hedin, pending government advices. The Committee for Preservation of Ancient Articles has appealed to the government not to permit this collection to go abroad.

DISCUSSION

THE PROTECTION OF BIRDS MADE PROFITABLE

MANY scientists and agriculturists, familiar with the commercial importance and historic interest of Peruvian guano, may not realize that the production of guano is a continuing process of considerable economic significance. The production is many times greater now than it was in 1908, but even then, when the population of birds on the Peruvian Islands was at its lowest ebb, it was conservatively estimated that the current production was 20,000 metric tons or more of very high-grade guano (12 to 17 per cent. nitrogen), and that the annual requirement of national agriculture was about 40,000 tons.[1] The contrast of these two figures pointed to a serious national problem, since the old deposits of "mineral" guano were ex-

[1] R. E. Coker, *Proceedings of the U. S. National Museum,* 56: 449–511, Pls. 53–69, 1919.

hausted, except for scattered deposits of material of very low grade. The national problem was only aggravated by the fact that there were already mortgaged to the Peruvian Corporation Ltd. of London hundreds of thousands of tons which only the future could provide and which assuredly it could not provide without a radical change of policy by the government and the commercial interests concerned.

Fortunately, there was a change, the cardinal features of the new policy[2] being the unification of responsibility for extraction of guano and protection of the birds and the rotation of working and protected areas in periods of years. Under the new plan, which superseded the old arrangement of having closed seasons of months, the birds would enjoy homes that were entirely undisturbed during *all the year* and for *as many years in succession* as was consistent with the utilization of the deposits of guano.

There has recently appeared a very comprehensive and detailed quarticentennial report of the guano administration entitled "25ª Memoria del Directorio de la Compañia Administradora del Guano, correspondiente al 25º año económico de lº de Abril de 1933 a 31 de Marzo de 1934."[3] The most significant facts presented in this report are, first, that the extraction of *guano rico,* which is now *new* guano, had risen in the fiscal year 1933–1934 to the significant amount of 157,634 toneladas; and second, that, of this amount, 115,402 toneladas were used in national agriculture. The figures quoted do not include *guano pobre,* insignificant in amount and value. In short, for the last year of report the farmers of Peru had obtained nearly three times as much rich guano as was needed, but not obtainable in 1908, while nearly 50,000 tons were still available for export.

The extraction from year to year must vary considerably, not so much because of fluctuations in avian population as because of the policy of rotation of areas of operation with corresponding rotation of areas of absolute non-molestation of the birds; but if the total period covered by the report be divided into five periods of five years each and the average annual yield for the successive five-year periods be arranged in chronological order, the following instructive series is obtained:

1909–1914	50,916	toneladas (metric tons)
1914–1919	63,866	"
1919–1924	75,280	toneladas (metric tons)
1924–1929	113,749	"
1929–1934	121,131	"

Even from such a rough statistical analysis, it is apparent that the good results of the protective measures have been generally progressive up to the present time (with over 157,000 toneladas in the last year).[4] It is also indicated that the results of the protective measures may not yet have come to full fruition. It takes time for nature to restore a balance that man has blunderingly upset. Perhaps this story has a general biological interest.

Another story, more directly in the line of natural history, is pertinent to the one just told, but the facts of the second story must not be assumed to explain in great measure the practical results that have been cited. That careful student of natural history, Dr. J. J. von Tschudi, who spent four years in Peru *just before* the modern commercial extraction of guano began, said[5] that the variegated gannet, *Sula variegata* Tschudi, was the chief guano-producing bird, that it nested only on the barren islands and not on the mainland and that it made nests in the sand, implying that it had extensive rookeries on the level parts of the islands. Not one of these statements was applicable in 1907 and 1908. The gannets of this species nested almost exclusively on the faces of steep cliffs, its nesting areas only rarely overflowing to a very slight extent onto ground on which a man could find a fair foothold. The geographer, Raimondi, in 1856,[6] *a few years after* guano extraction had begun, confirmed Tschudi by stating that the Sulas "keep themselves in the interior of the islands" (translation). Some years later[7] he uses a more qualified expression—they cover *at times* a part of the islands ("cubren a veces la parte de las islas"). Could von Tschudi and Raimondi have been mistaken, or had this bird changed its nesting habit with the development of the guano industry during the latter half of the nineteenth century?

Now it happened that *about ten years after the new plan* of conservation had come into effect, Dr. Murphy visited some of the same islands on which my observations were made and took photographs showing

[2] R. E. Coker, SCIENCE, n. s., 28: 56–64, 1908. At a later time a further report was made to the Peruvian Government by H. O. Forbes. Although this report seems not to have been published, it is understood to have been in general conformity with the original plan but more detailed and of very great practical value to the government.

[3] *Boletin de la Compañia Administradora de Guano,* Vol. 10, No. 7, Lima, Peru, 1934.

[4] See also: Robert Cushman Murphy, *Brooklyn Museum Quarterly,* October, 1920; R. E. Coker, SCIENCE, n. s., 53: 293–298, 1921.

[5] J. J. von Tschudi, "Travels in Peru during the Years 1838–1842." Translation by Thomasina Ross, pp. xi + 354, New York, 1852 (p. 168); "Untersuchungen über die Fauna Peruana," Vol. 2 (First Part), "Ornithologie," 316 pp., 36 Pls. St. Gallen, 1844–46 (p. 313).

[6] Antonio Raimondi, "Le huano des isles de Chincha," 1856.

[7] Antonio Raimondi, "El Perú." Estudios Geológicos, Parte Quarta, Trabajos Sueltos. La Sociedad Geográfica de Lima, 1902 (p. 494). The section about guano and the birds was apparently written about 1860 or earlier.

great rookeries of this species on the level or gently sloping ground—just the condition that von Tschudi and Raimondi had encountered on the islands. Such a photograph as Murphy shows opposite page 304[8] could not possibly have been taken in 1908. The statement is not lightly made. I saw hundreds of rookeries of this species on islands and mainland over some 700 miles of the coastal region during a period of a year and a half and made many inquiries with the particular aim of checking the statements of von Tschudi and Raimondi. The conclusion seems inescapable that *Sula variegata* did originally nest extensively on level ground (and doubtless also on the cliffs), that some time during the period of unregulated extraction of guano, it gave up practically entirely the level areas, and, seemingly, found previously unfrequented cliffs on the mainland, and that it subsequently reclaimed the level areas when conditions made it feasible to do so. It is still believed, however, that von Tschudi was incorrect in ascribing chief importance to the gannet, locally known as "piquero" or "camanay." The fact that the name "guanay" or "huanay" was applied by the indigenous Peruvians to the white-breasted cormorant, taken together with the knowledge of its habits and the ascertained facts regarding the amount and quality of the guano it produces, points to the primacy of this species as a producer of the fertilizer that was valued by the Incas, and doubtless by their predecessors.

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AN ABSTRACTING SERVICE FOR TECHNIQUE IN BIOLOGICAL MICROSCOPY

THE journal *Stain Technology,* the official publication of the Commission on Standardization of Biological Stains, is now in its tenth year and plans are being made for enlarging its scope with the beginning of 1936.

This journal has, almost since the beginning, consisted of two parts—one composed of original articles; the other of reviews of articles dealing with microtechnique that have appeared in other journals. The original articles at first dealt wholly with stains and staining procedures, but as it became known a few years ago that the editors were willing to receive more general contributions along other lines of microtechnique, their scope has gradually been widening and for about three years the journal has carried on its cover page as a sub-title the name "A Journal for Microtechnique." Recent numbers, in fact, have included an unusually large number of papers dealing with other subjects beside stains and staining.

The abstract section of the journal, which has been entitled "Laboratory Hints from the Literature," has always included microscopic methods in general, although the greater number of the articles reviewed have had to do with staining procedures, methods of fixation, etc. The abstracts have always been of distinctly unusual style in that the plan has constantly been followed of giving enough of the author's technique in the abstract so that it could be followed without consulting the original article. Up to the present time, however, the articles reviewed have been only those appearing in a limited number of journals available at Geneva, N. Y., where the commission laboratory is located. For this reason, the field has never been covered as completely as might be desired.

Beginning with January, 1936, however, it is hoped to cover in this abstracting service a much larger list of journals. A list of nearly 100 periodicals has been drawn up in which articles on microtechnique often occur and it is desired to cover in the future as many as possible of the journals on this list. It is obvious that not all this can be done in the future at the Commission offices as it has been in the past. Assistance must be obtained from biologists elsewhere in reporting on the methods published in many of these journals. The editors have already secured about 15 collaborators who have promised to assist in the necessary abstracting work, but additional abstracters would be desirable. If any of the readers of this article, therefore, are sufficiently interested in this undertaking to be willing to abstract a few articles each quarter, it will be appreciated very much if they would get in touch with the writer of this note and indicate their willingness.

The object in this proposed development is to convert *Stain Technology* into a journal which presents in a clear, concise and usable form not only the latest news concerning the biological uses of dyes, but also the most recent methods in general biological microscopy. No other periodical does this at the present time, the usual abstracting journal in the biological field laying its stress on results rather than on methods. It is hoped that the proposed plan will make *Stain Technology* a more useful factor in the field of microtechnique than it has been in the past.

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THE ANTIVIVISECTION FIGHT IN ILLINOIS

THE methods employed by the Illinois Society for the Protection of Medical Research in combatting antivivisection activities in Chicago during the winter of 1934–35 may be of some interest to biologists in

[8] Robert Cushman Murphy, "Bird Islands of Peru," pp. xx + 362. New York and London, 1925, Putnam's. Illustrated with photographs taken in 1919 or 1920.