in the careful presentation of the finished work. The list of her publications gives evidence of her wide interests—in such diverse special fields as microchemistry, germination, mineral nutrition, reduction of nitrates by plants, nitrate reducase, cell walls, endophytic fungi, starch grains. Possibly outstanding in their effect are "Microchemical studies of the progressive development of the wheat plant," "A physiological and chemical study of after-ripening," and her contributions on the structure of cellulose membranes and starch grains.

Never a "joiner," she nevertheless gave good support to Sigma Delta Epsilon in its youthful days. Her academic standing was evidenced by membership in Phi Beta Kappa and Sigma Xi, and the esteem in which her fellow-botanists held her resulted in election to the chairmanship of the Physiological Section of the Botanical Society of America, a rare position for a woman. Her name was in the starred list of outstanding scientists in *American Men of Science* in 1938. Quite outside of organizations, a host of former students and associates feel the loss of the quiet, reserved friend who spent her last years of retirement with her hobbies of reading, handwork, and a real garden in Pleasant Valley, Connecticut.

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News and Notes

Botanical Congress in Paris

An exceptionally cool summer provided an excellent atmosphere for the sessions of the 8th International Botanical Congress in Paris, 2–14 July. Almost 3000 participants were registered. Several special sessions preceded the general meetings. One was that of the Nomenclature Commission, which spent several days in stormy discussion of proposed amendments. A very controversial item was the always resurgent *nomina specifica conservanda*. The good humor of the chairman, Jacques Rousseau (Montreal), rescued the proceedings from pandemonium many times. Another initiative was a "colloque" (symposium) on the "ecological divisions of the world." This, like all such undertakings, was very uneven in content, coverage, and level. The French schools (Toulouse and Montpellier) gave a brilliant account of their methods and their achievements. An exhibition of maps was held concurrently, which showed the excellent work in the past 15 yr of Gaussen (Toulouse) and his collaborators. Other exhibits were by Hueck (São Paulo), Küchler (Kansas), Tüxen (Stolzenau), and Schmid (Zürich).

After the official opening of the congress on 2 July, the participants in the preliminary meetings joined one or another of the 37 sections in which symposiums and miscellaneous papers were being presented. The program was very full and all sections were well attended. As at all such meetings, much time was unavoidably wasted in walking from one section to another and much frustration was experienced because of time conflicts. It is unfortunate that the time restriction for each paper cannot be enforced, but perhaps this requires more fortitude than section chairmen are able to muster. It is, of course, quite impossible to give an account, section by section, of the proceedings and to cite even the most interesting features in each one. I have, however, obtained the collaboration of my colleagues, W. Randolph Taylor, Rogers McVaugh, Chester A. Arnold, and Volney H. Jones, who, respectively, provided notes on phycology, taxonomy, paleobotany, and ethnobotany, whereas I attended the ecology, phytosociology, and protection of nature sections myself. This coverage leaves much that is of equal importance unmentioned.

Phycology. The section of phycology held 17 of the scheduled 18 sessions. One joint session with geology was eliminated because of the death of F. E. Fritsch and the absence of the other chief phycological speaker. About 10 unscheduled papers were added to the program, so that the total of papers was about 120, but several were omitted because of absence of the authors. The attendance varied from 30 persons to 90 or 100 but averaged more than 50 at all times.

The subjects that attracted the most contributors dealt with phytogeography and marine ecology, the vegetation of Africa having been especially favored. A meeting on this last brought together several people long interested in African algae and resulted in an important contribution on the structure of cilia by I. Manton of Leeds. This paper, with the balance of the program, led to very active discussion. So did the program on life-cycles of algae, opened by K. M. Drew Baker, in which various opposing viewpoints were vigorously presented. Programs previously initiated at Stockholm dealing with electron-microscopic structure of diatom cell walls were extended at Paris to other diatoms and to Coccolithophondae, showing astonishing degrees of submicroscopic complexity. The section dealing with biochemistry of marine algae was opened by F. N. Woodward and was an exceedingly crowded one. Although the field was outside the competence of most of the members of the section, the attendance was large and the discussion, especially from visiting physiologists, was as active as the limited time permitted.

In the section dealing with cytology of algae the remarkable studies on chromosome number of *Spirogyra* by Godward were extended and, as indicated by a first communication by C. G. King, desmids have been added to the algal groups that are being inten-

sively investigated. The summary of the ecology of marine phytoplankton by T. Braarud attracted a good deal of discussion. Freshwater algae came in for their share of attention, but the offerings were not as varied as those on marine algae. The chief papers dealt with flagellate organisms and matters of structure and relationships; there were few floristic papers. Among the more considerable studies were those on stream algae by Symoens and on East African lakes by R. Ross. Given the attendance record and the varied program, the continuance of the section for the Montreal meeting seems highly advisable.

Taxonomy. The nomenclature section held its meetings from 28 June to 1 July. Principal business was the consideration of proposed changes in the International Code of Botanical Nomenclature. No major changes were approved; a summary of the actions taken by this section has appeared in *Taxon* 3, 184 (Sept. 1954).

Probably the most important action taken by the section of taxonomy, systematics, and phylogeny was the approval of a resolution to prepare in the near future an *Index nominum genericorum*—a general index of all published genera of plants—and the appointment of an international advisory committee headed by J. Lanjouw of Utrecht to further this project.

Paleobotany. Seventeen countries were represented on the paleobotanical program. For the first time two sections were organized, one for Paleozoic and the other for Mesozoic and Cenozoic paleobotany. Among the numerous subjects discussed were nomenclature, structure of ancient woods, evolution within various groups, early floras, and classification and affinities of fossil spores and pollen and their use in correlation. Some of the papers dealing with this last topic were given in conjunction with the newly organized section on palynology. More or less neglected subjects were coal ball plants and Tertiary leaf impressions, although some of the broader aspects of Cenozoic floras were treated in several papers. There were a few contributions on paleobotanical techniques. At the special session dealing with nomenclature held before the congress, 31 Dec. 1820 was agreed upon as the starting date for paleobotanical nomenclature. Also a list of generic names passed upon at Stockholm in 1950 was formally placed in the list of *Nomina Conservanda.* The International Committee on Paleobotanical Nomenclature was reorganized. Two steps were taken to increase international cooperation among paleobotanists: one was the setting up of a subsection on paleobotany under the botanical section of the International Union of Biological Sciences, and the other was the creation of a paleobotanical section within the International Society for Plant Taxonomy. Before the congress there was a 3-day excursion into the coalfields of northern France, using Lille as headquarters. Then a 6-day postcongress excursion was made into southern France, where Stephanian and Tertiary fossils were collected. Both trips were directed by Depape and Corsin, professors from Lille.

Ethnobotany. These meetings marked the first time that ethnobotany has been recognized at an international congress of botany by the inclusion of a section under that name. The fledgling section was not large, but it was most energetic and enthusiastic. Active participants were from such countries as France, England, the Netherlands, Yugoslavia, West Germany, Saar, U.S.S.R., Philippines, Belgium, Canada, Iraq, and the United States.

R. Portères and A. Haudricourt (France) deserve considerable credit as organizers of the section, and Jacques Rousseau (Canada) as president of the section carried out this function with his usual vigor and good nature. Baranov (U.S.S.R.) and Jones (U.S.A.), who are vice presidents, took over the chair for a portion of the program. Five independent half-day sessions were held as well as joint sessions with the history of botany section. Papers concerned with a variety of the aspects of the interaction of man and plants were well received, and discussion was quite animated. The subjects covered included edible plants, origin and history of cultivated plants, plant names, plant lore, sacred plants, narcotic plants, and so forth.

The initial session was given entirely to an open discussion of the question "What is ethnobotany?" This session was particularly valuable in that it permitted the presentation of opinions concerning the proper materials and limits for this rather widespread field. There seemed to be general agreement that ethnobotany should encompass all of the various interrelationships between folk cultures and their plant environments. Involved in this interaction are not only the practical economic aspects of plant utilization and technology but also the philosophic aspects of plants in legends, mythology, religion, and in botanical knowledge and concepts of primitive peoples. In addition, it was felt that the effects and influences of man on plants and vegetation should be noted. There was no attempt to arrive at a formal definition of ethnobotany, for it was decided that there is some benefit in a fluidity of the conception of this rather young field.

There was a general feeling that the exchange of data and ideas and the comparison of methods made possible by this section meeting were exceedingly valuable and stimulating to the participants. This was reflected in the unanimous passing of a resolution, favoring the investigation of means for bringing about more effective communication, more frequent colloquiums, and the establishment of ethnobotanical laboratories for the study of materials from various continents.

Ecology and phytosociology. A good deal of attention was given to the question of vegetation mapping on various scales. The precongress colloquium and exhibition were continued, and further contributions were offered by several participants, especially Gaussen and Rey (Toulouse), Emberger and Trochain (Montpellier), Schmid (Zürich), Ozenda (Alger), Hueck (São Paulo), Van Steenis (Leyden), Gams (Innsbrück), and Küchler (Kansas).

Many descriptive inventories of little known areas were also presented. One of the most remarkable was

an evening lecture by Osvald (Uppsala) on the bogs of New Zealand. Lavrenko, Tikhomirov, and Stankof (U.S.S.R.) also presented most interesting materials. The Soviet delegation very generously distributed a number of copies of a handsomely bound and illustrated book containing the Russian and French texts of the papers given by its members. The ecological maps were of special interest.

Papers concerning vegetation dynamics were also quite numerous. The differences in background, training, and philosophy of the proponents led to the usual discrepancies in interpretation. However a good deal of common ground was uncovered.

Taxonomy and chorology. The findings and interpretations of experimental taxonomy were reviewed in a brilliant symposium in which American and British contributions were outstanding. Gilmour (Cambridge) and Heslop-Harrison (London) even proposed a revised nomenclature of the "units of microevolutionary change" that caused a minor tempest and stimulated much useful discussion.

Gams (Innsbrück) gave a spirited criticism of Croizat's recently published theories of plant distribution; Faegri (Oslo) presented a new atlas of the Norwegian flora; Raymond (Montreal) read a new chapter in his phytogeographic studies of *Carex*, which have given us new insights on the migrations of boreal floras; Humbert (Paris) and Cuatrecasas (Chicago) offered new contributions to the *Senecio* and *Espeletia* problems of Madagascar and Colombia.

Protection of nature. Six sessions were devoted to the study of particular areas where nature needs to be protected. Parts of Africa and Madagascar were described and assessed by Troupin (Brussels), Jaeger (Strasbourg), Schnell (Caen), Humbert (Paris), Robyns (Brussels). The main report on the Pacific was given by Fosberg (Washington) who gave special emphasis to a large bog area in Japan that is about to be flooded. Stehlè (Guadeloupe), Hueck (São Paulo), Lasser (Caracas), and Velez (Puerto Rico) reported on tropical America. The presence at most of these meetings of Harroy and Robyns (Brussels), Heim (Paris), Gille (UNESCO), and several others who are connected with the International Union for the Protection of Nature permitted frequent cross-references to the work already done by that organization. The section discussed conservation policies and passed several resolutions in support of national and international organizations that have already made specific recommendations.

In many other sections of the congress important work was done, new facts revealed and new interpretations proposed, that cannot be reported here. A number of activities involving the congress at large took place—among them a visit to Versailles, a reception at the City Hall, excursions to the forest and castle at Fontainebleau, and a visit to the arboretum at Les Barres. Most noteworthy perhaps was a beautiful exhibition of botanical illustrations from the collections of the Museum National d'Histoire Naturelle. The best work of the European illustrators of the 18th and 19th centuries was displayed to great advantage. Another highlight of the congress was the celebration of the 100th anniversary of the Société Botanique de France, whose president, Roger de Vilmorin, made a most elegant speech in four languages. This was followed by a presentation of the botanical landscape of France in a series of colored lantern slides that had been gathered from various collections by Chouard (secretary-general of the congress); they were commented on by him and by several other French botanists, each one covering a different region. On this occasion also, the compliments of some 100 botanical societies from different parts of the world were presented to the Société Botanique de France by foreign delegates. Harriet Creighton (Wellesley College) delivered a most gracious address on behalf of the Botanical Society of America.

The congress was preceded and followed by many excursions of botanical interest. Most of them were concentrated on French territory, but some extended to North Africa and even to other parts of the French Union in tropical Africa. It was my good fortune to join the Ivory Coast expedition, which was led by Mangenot (Paris). This consisted of a month of travel through the tropical rain forest. All arrangements had been made to accommodate 16 people comfortably, to feed them, to give the medical care, and to provide guides and material help, not to mention the scientific information constantly provided by the experienced French botanists. The cost of this trip to the participants was nominal.

The generosity of the French Government and of French scientific institutions is worth putting on record. There is no doubt that the 8th International Botanical Congress was a success, not only because of careful planning and coordination, but also because of strong public support, material and otherwise. Without these special considerations, many foreign delegates could not possibly have afforded the expense, either of attending the congress or of taking part in the excursions. It is to be hoped that such an investment in international exchange will seem worth while to the other countries that will follow France in the organization of botanical congresses. In fact, the next one will take place in Canada in 1959.

PIERRE DANSEREAU

University of Michigan

Zoological Nomenclature

On 22 Apr. 1955, the International Commission on Zoological Nomenclature will start to vote on the following cases involving the possible use of the plenary powers for the purpose specified against each entry. Full particulars of these cases were published on 22 Oct. 1954, in pt. 9, vol. 9 of the *Bulletin of Zoological Nomenclature.*

1) Renier [1804] *Prospetto,* question of validation of four generic names (*Discoides, Cerebratulus, Polycitor,* and *Scolixedon*), published in.

2) Renier [1807] *Tavola,* question of validation of six

generic names (*Aglaja, Alcyonaria, Cystia, Rodens, Tuba,* and *Tubulanus*), published in.

3) Names (generic and specific) given to aptychi of ammonites, suppression of.

4) *Notropis* Rafinesque, 1818 (class Osteichthyes), determination of gender as masculine.

5) *Cheloniceras* Hyatt, 1903 (class Cephalopoda, order Ammonoidea), designation of type species for.

6) *Argus* Bohadsch, 1761 (class Gastropoda), retention of status for purposes of the law of homonymy to preserve *Lysandra* Hemming, 1933, from falling as a synonym of *Argus* Boisduval, 1832.

7) *minimus* Miller (J.S.), 1826 (*Belemnites*) (class Cephalopoda, order Dibranchia), validation of.

A proposal for a "declaration" banning the names based on aptychi of ammonites is also included.

Comments on these cases should be sent as soon as possible to Francis Hemming, Secretary to the Commission, 28, Park Village East, Regent's Park, London, N.W.1.

FRANCIS HEMMING
International Trust for Zoological Nomenclature

Science News

In a statement to the press on 29 Oct., Pierre Auger, French physicist who for 3 yr was the French delegate to the United Nations Atomic Energy Comission and who now heads the natural science section of UNESCO, said that the U.S. plan for **peaceful uses of atomic energy,** first announced by the President last December, requires much clarification and elaboration. He mentioned that a six-paragraph U.S. memorandum, which will be the basis for the next debate on the subject, leaves many major questions unanswered.

The U.S. has called for creation of a new international agency to start work early next year. Auger pointed out that it is not known who will be its members, how the agency will be organized, how it will be financed, or what authorities will run it. The plan calls also for an international scientific parley to be summoned early next year under United Nations auspices. "The conference—like the agency—is not very clear in the minds of many persons," Dr. Auger said.

The following statement was released by the **Atomic Energy Commission** on 26 Oct.:

> The Chairman of the Atomic Energy Commission stated that there had been a series of detonations of nuclear explosives in Soviet territory. This series began in mid-September and has continued at intervals to the present. Further announcement concerning this series will be made if some unusual development would appear to warrant it.
>
> As is generally the case with nuclear detonations, these tests have resulted in some widespread fall-out of radioactive material, but insignificantly in the United States.

Small amounts of **crystalline DL-α-lipoic acid** are available for the use of interested investigators. For details see the communication by L. J. Reed elsewhere in this issue.

A 2-yr research program involving the infection of 154 human volunteers with a **new type of antityphus vaccine** has proved that the vaccine provides a more effective and longer lasting immunity to epidemic typhus than the vaccines in current use. This conclusion was reported at the annual meeting of the American Public Health Association by John P. Fox, professor of epidemiology at Tulane University who was in charge of the research. He stated that the new vaccine resisted the disease 2 yr after initial inoculation, and that a comparison with a commercial antityphus vaccine had demonstrated the superiority of the new material. The agent used by Fox and his associates is strain E of rickettsia Prowazeki, which contains minute doses of living nontoxic typhus germs.

The experimental immunization program was conducted among inmates of Mississippi State Prison. It followed an original project conducted in 1951 among 29 inmates to determine the safety of strain E for human beings. Both projects were preceded by intensive tests on animals by Fox, and limited tests on man by Fox and F. Perez Gallardo of Madrid, Spain, who was the first to isolate this strain of typhus germ.

Fox reported also that 8000 persons in Peru have been inoculated with strain E to determine its effectiveness in a mass immunization. This field test, begun in the summer of 1953 and still continuing, has shown that strain E is effective in producing a good antibody response. It was 92 percent effective in a large group given small amounts of the vaccine and was 97 percent effective in the groups receiving larger amounts. The field research revealed that the most satisfactory method of administering the antityphus agent is in the muscle, and that the dose required is very small.

On 24 Oct. word came from Katmandu, Nepal, that a three-man Austrian expedition had conquered **Mount Cho Oyu,** the world's seventh highest peak. The group consisted of Herbert Tichy, geologist, Josef Joechler, construction engineer, and Helmut Heuberger, geography professor. A report stated that Tichy and Joechler, accompanied by a Sherpa guide named Pasang, reached the crest, where they planted the flags of Austria, Nepal, and India and buried offerings to a goddess supposed to rule the height. The team was said to have made the ascent without the use of oxygen; Cho Oyu is 26,867 ft in altitude. A British expedition, led by Eric Shipton, made an unsuccessful attempt to climb the mountain in 1952.

Two maps, one having the **first known cartographic mention of America** and the other indicating that Portuguese sailors were in the West Indies before Columbus, have been acquired by the University of Minnesota's James Ford Bell Collection. The Waldseemuller globe map, a 9½ by 15 in. wood engraving, was first published in 1507 in St. Die, France, by Martin Waldseemuller, a geographer who was an admirer of Amerigo Vespucci. It was published for use in conjunction with Waldseemuller's book, *Cosmographia Introductio,* that appeared the same year. It was designed to be pasted on a ball and is believed

to be the first published globular map of the Western Hemisphere. The Minnesota copy is thought to be the only one now in existence. Waldseemuller also published a second map, for a flat surface, and on both appeared the name "America."

The second map, a 1424 nautical chart, cartographer unknown, is the first known document in which the name "Antilia" appears. The term is placed near the largest of the Atlantic islands shown on the chart, and Armando Corteseo of Portugal's University of Coimbra declares that the designation of these islands is the first cartographic representation of the "forefront of eastern America." The name "Antilia" is definitely Portuguese in origin and Corteseo has advanced the theory that Portuguese sailors, carried by ocean currents from their home coast, reached the New World before Columbus did.

The **Swedish Geological Survey** has announced that ore bodies with high copper content have been found in the Adak district in the Skellefteå field, North Sweden.

Is **exogamous artificial insemination** a benefit to humanity or should it be considered a crime? Its future hangs on legislation. This important problem is discussed by Wendy Stewart in an article titled "What should the doctor know about exogamous artificial insemination?" appearing in the November *Journal of the American Medical Women's Association.* Some people think artificial insemination so beneficial that it should be encouraged; that the child living in a home where he was so much desired and whose characteristics have been selected, has an unusually good chance of sound development. Others consider the practice a criminal offense, and that the donor must be so depraved that he could contribute only poor hereditary characteristics.

> There are serious aspects of social, moral, and legal welfare to be considered . . . as things stand at present there is much risk of an outcome detrimental to the hoped-for child. At best . . . there is doubt as to his legal status; at worst . . . he is regarded as an illegitimate child.

Instead of forcing legislation prematurely, it would be better, Dr. Stewart feels, eventually to translate existing custom into law. This can come if the practice is demonstrably widespread, with safeguards protecting all concerned. At present most of the problems can now be resolved if the child is adopted legally by the married couple. "While the ultimate goal should be legislation . . . the immediate one should be adoption."

Inspired by the **earthworm breeding farms** he saw in California, as well as by Darwin's estimate that approximately 400 lb of humus a year are ploughed up by the earthworms normally inhabiting an acre of land, a German farmer during the past year has built up a career on these most humble of creatures. He has established Germany's first earthworm farm; he sells a box of 100 worms for DM.1.5 (approximately 36 ct). They are cheaper by the thousand and cheapest of all as spawn. He has not yet, however, reached the production capacity of some California earthworm farms, which are able to send out 500,000 worms a day and which, after the Netherlands flood catastrophe, delivered to that country several million earthworms whose activity contributed towards making the flooded areas arable again.

During a recent interview in New York, Rajkumari Amrit Kaur, Minister of Health for India, reported that in the last 5 yr **life expectancy** in her country has risen from an average of 27 yr to 32 yr. She also referred to progress in the antimalaria campaign as "one of the triumphs of international cooperation."

The 1954–55 **exploration program of the New York Botanical Garden** began with the departure in October of three different parties to northern South America. For the first 3 wk of October John Wurdack, with Nicholas Guppy as his assistant, made a survey of the timber potential of a tract of land in the rainforest south of the Orinoco River in central Venezuela. In December Wurdack will go to the Gran Sabana area of southeastern Venezuela. He will be accompanied by Julian Steyermark of the Chicago Natural History Museum, and together they will explore the tabular sandstone mountains in the Chimanta-tepui region.

Bassett Maguire and Richard S. Cowan went to Amapa, the northeasternmost state of Brazil, in continuance of the Garden's interest in obtaining data on the flora of Venezuela, the Guianas, and adjacent Amazonia. After a week Maguire flew to the upper Branco River in northern Brazil, just south of the British Guiana border, where he is visiting the mountain called Tepequem for several weeks. Cowan will remain in Amapa for a 6- to 8-wk stay before making brief excursions into the forests of French Guiana, Surinam, and British Guiana. These parties are expected to return to New York by the first of March or shortly thereafter.

From the recent annual meeting of the National Association for Mental Health have come these facts about the extent of **mental illness** and the lack of facilities and trained personnel for the care and treatment of the mentally ill. (i) This year about 250,000 persons will be admitted to mental hospitals for the first time. (ii) At the present rate, one of every 12 children born each year will need to go to a mental hospital sometime in his life. (iii) More than one-half of all of our hospital beds are occupied by mental patients. (iv) Mental illness costs us over 1 billion dollars a year in tax funds.

Members of the house of delegates of the Medical Society of Virginia have voted to **admit Negro doctors** to membership in their State medical society. The District Medical Society (D.C.) and the Maryland State Medical Society have taken similar action in past years.

Scientists in the News

Linus Pauling, winner of the 1954 Nobel Prize in chemistry [*Science* **120**, 796 (12 Nov.)] has made many contributions to science, but his most important was his discovery of the fundamental principles determining the nature of the chemical bond and the structure of molecules. This has led him to his discoveries concerning the essential atomic structure of proteins, including such physiologically important materials as hemoglobin, blood serum, enzymes, hair, skin, and muscle.

Pauling and his associates began working on the molecular structure of proteins, the major component of all living cells, in the mid-thirties. Proteins are so complicated that their structure could not until recent years be determined. Unlike most other chemicals, which consist of only a score or two of individual atoms, protein molecules are made up of thousands, even millions, of atoms; therefore instead of trying to study protein molecules directly, Pauling first investigated their component parts, such as the amino acids. Analyzing these by x-ray diffraction, he ultimately obtained enough information to permit a precise prediction of the configuration of the oxygen-hydrogen-nitrogen-carbon chains that form the backbone of protein molecules.

It is hoped that knowledge of the atomic structure of proteins will be a valuable tool in medical research. Pauling and his colleagues have already found that sickle-cell anemia is associated with an abnormality in hemoglobin molecules. During the past 2 yr Pauling has been working on the structure of collagen, the protein that occurs in tendons, bones, and skin. It is probably the most important protein in the human body, for it gives strength and toughness to tissues. There is evidence now that many diseases, such as arthritis, seem to involve some abnormality in the manufacture or structure of this protein.

For many years Pauling has also been interested in the structure of metals and alloys and the relation of structure to properties of these substances. Between 1938 and the present he has been working on the development of a theory of the electronic structure of metals and alloys that differs considerably from the quantum mechanics theory that is generally accepted. A principal difference is that Pauling assumes that a larger number of electrons are involved in bonding the atoms together than has previously been thought. Some 2 yr ago he applied his general ideas about metals in the statement of a new theory of the ferromagnetism of iron and other magnetic substances.

Recently Pauling, Robert B. Corey, and Richard E. Marsh have completed a detailed investigation of the molecular structure of silk. Silk fibers are very strong —stronger than the strongest steel wires with the same cross-sectional area—and Pauling and his associates explain this strength; the structure of silk involves extremely long molecules of silk protein, extending in the direction of the fibers. These molecules are attached to one another by hydrogen bonds, which connect each molecule with two others, one on each side. These molecules form what the investigators term "pleated sheets" and silk fiber consists of many of these sheets arranged side by side. The great strength of the fiber results from the fact that, in order to break it, it is necessary to break the molecules themselves—that is, to break chemical bonds between atoms of carbon and nitrogen.

Pauling's experimental research includes the determination, by x-ray diffraction, of the structure of about 50 crystals, and, by electron diffraction, of about 60 gas molecules. In the general field of molecular structure, his discoveries of fundamental principles include: the hybridization of bond orbitals and the theory of directed valence (1928); the relation of hybrid bond orbitals to magnetic properties of substances (1931); the partial ionic character of single bonds and its relation to heats of formation of substances (1932); the resonance of molecules among two or more electronic structures and the determination of the configuration of molecules through resonance, such as the planarity of conjugated systems (1932); and the correlation of interatomic distances and other structural features with electronic structure (1932). In the elucidation of protein structure, Pauling's contributions include the discovery of the extraordinary magnetic properties of hemoglobin and their interpretation in terms of molecular structure (1936, with C. D. Coryell); the development of a general structural theory of native, denatured, and coagulated proteins (1936, with A. E. Mirsky); the formulation of a theory of molecular structure of antibodies and the nature of serologic reactions (1940); the discovery that an abnormality in molecular structure of hemoglobin is responsible for sickle-cell anemia (1949, with H. A. Itano, S. J. Singer, and I. C. Wells); and the discovery of the configuration of polypeptide chains in some fibrous and globular proteins (1950, with R. B. Corey).

Benjamin Miller, senior associate physician at Peter Bent Brigham Hospital, Boston, and lecturer on medicine at Harvard Medical School, has been appointed director of the Jewish Hospital Association's May Institute for Medical Research in Cincinnati. He has conducted research for 20 yr in the field of kidney diseases and allied conditions such as high blood pressure. He plans to continue studies on kidney transplantation and in the broad field of kidney diseases and related conditions of cardiovascular diseases. He will also participate in the teaching program of the association.

Two members of the Soviet Academy of Sciences, **Andrei Levovich Kursanov,** a physiologist, and **Boris A. Rybakov,** a professor of social sciences, attended the closing ceremonies of Columbia University's bicentennial. The Russian scientists' visit to the United States, the first of its kind in several years, resulted from the Soviet Academy's acceptance, only a few days before the event, of an invitation sent more than 4 yr ago.

The Upjohn Co. has announced the transfer of **Harold R. Reames** from the medical division to the research division where he will head the department of infectious disease. Reames has been with the company since 1951 in the department of clinical investigation of new drugs.

Louisiana State University School of Medicine has established a new annual lectureship in honor of **Peter Graffagnino** of New Orleans, the first professor in the university's department of obstetrics and gynecology. The initial Graffagnino lecture was given on 27 Oct. by **Edward A. Schumann,** professor of obstetrics and gynecology at the University of Pennsylvania Medical School.

Lord Rothschild, director of research in the department of zoology at Cambridge University, England, is visiting the California Institute of Technology to continue his research in the field of embryology. Appointed research associate in biology, he is working with Albert Tyler on some problems of the early phases of both plant and animal reproduction.

The Institute of Radio Engineers has named **Harald T. Friis,** director of radio research at Bell Telephone Laboratories, Red Bank, N.J., the recipient of the IRE medal of honor, the highest technical award in the radio engineering profession. The award, which was given "for his outstanding technical contributions in the expansion of the useful spectrum of radio frequencies, and for the inspiration and leadership he has given to young engineers," will be presented during the IRE national convention in New York next March.

The Morris Liebmann memorial prize, awarded annually to an IRE member who has made a recent important contribution to radio engineering, was given to **Arthur V. Loughren,** director of research at the Hazeltine Corp., "for his leadership and technical contributions in the formulation of the signal specification for compatible color television."

Bernard Salzberg of the Naval Research Laboratory, Washington, D.C., received the Harry Diamond memorial award, which is given to persons in government service for outstanding work in radio and electronics. The award was presented "for his contributions in the fields of electron tubes, circuits, and military electronics."

The Vladimir K. Zworykin television prize award went to **Harold B. Law,** RCA Laboratories Division, Princeton, N.J., for his contributions to the development of the shadow-mask tricolor television picture tube.

Milton Helpern, chief medical examiner of the City of New York, has been appointed professor and chairman of the department of forensic medicine in the New York University–Bellevue Medical Center Post-Graduate Medical School. Halpern joined the faculty of the N.Y.U. College of Medicine in 1934 as a lecturer in forensic medicine and became an associate professor in the Post-Graduate Medical School of the Medical Center in 1949. He is also assistant professor of clinical medicine and lecturer in pathology and legal medicine at Cornell University Medical College, lecturer in criminologic medicine at the New York Police Academy, and honorary lecturer in forensic medicine at the University of Southern California Medical School.

The annual John McReynolds lecture in ophthalmology for 1954 was given at the University of Texas Medical Branch, Galveston, on 15 Oct. by **A. Francescotti,** director of the ophthalmology clinic of the University of Geneva in Switzerland. He spoke on "Cataract in relation to hereditary skin disorders." The lectureship was established in honor of the late J. O. McReynolds of Dallas, pioneer ophthalmologist of the Southwest.

Other recent distinguished visitors at the Galveston Medical Branch have been **Francis E. Camps,** professor of forensic medicine at the University of London, and **Neville F. Stanley,** director of epidemiology in the Public Health Service of New South Wales, Australia.

William B. House, formerly associated with the National Alfalfa Dehydrating and Milling Co. of Lamar, Colo., has been appointed a research chemist at the Midwest Research Institute, Kansas City.

H. J. Beattie, Jr., and **F. L. VerSnyder** of the General Electric Co., West Lynn, Mass., have been jointly awarded the 1954 Henry Marion Howe medal for their paper "Microconstituents in high temperature alloys," published in the *Transactions* of the American Society for Metals.

Among the Independence Day decorations that were awarded by the President of India, the following honors were given to scientists and educationalists. The Bharat Ratna was received by the Vice President, philosopher and educationalist Servepalli Radhakrishnan, and by the physicist **C. V. Raman.** The Padma Vibhushan Pahala Varg (1st class) was awarded to physicist **Satyendranath Bose,** and educationalist **Zakir Husain.** The Padma Vibhushan Dusra Varg (2nd class) was awarded to 19 people, including scientists **H. J. Bhabha, S. S. Bhatnagar,** and **K. S. Krishnan.**

Callaway Brown, senior chemist at Armour Research Foundation of Illinois Institute of Technology, Chicago, has been presented the award of scientific merit by the foundation's chemistry and chemical engineering research department for research on the manometric determination of the density of liquid ozone. The work was sponsored by the Government.

Joel Warren, formerly chief of the department of bacteriology, Army Medical Service Graduate School, Washington, D.C., is now serving as science attaché for Scandinavia and is stationed at the American Embassy in Stockholm, Sweden.

Yehia Aziz Habib, who is on leave of absence from the faculty of medicine of the University of Alexandria, Egypt, has been appointed visiting associate professor of clinical physiology at the University of Tennessee College of Medicine. His research work has been primarily in the kidney physiology of mammals.

Paul A. Miller, professor of sociology at Michigan State College since 1947, has been named deputy director of the Michigan Cooperative Extension Service.

Two engineering appointments at AC Spark Plug Division of General Motors have been announced. **Karl Schwartzwalder,** chief ceramic engineer, has been named director of research, and **Wilfred A. Bychinsky,** chief ignition engineer, has been promoted to assistant chief engineer in charge of spark plug work. Formerly spark plug engineering and research were under the direction of Taine G. McDougal, who retired recently.

Wendell M. Latimer, University of California chemistry professor who has made important contributions to national defense in the fields of atomic energy and chemical warfare, has been awarded the 1955 William H. Nichols medal of the American Chemical Society's New York Section. A pioneer in low temperature research in the United States, Latimer was active during World War II in National Defense Research Committee studies of oxygen production, toxic gases, and plutonium. From 1943 to 1947 he was director of a Manhattan Engineering District project on the chemistry of plutonium, which was carried out by the University of California Department of Chemistry. Since then he has been associate director of the university's Radiation Laboratory. He also supervised wartime research on the effect of weather conditions upon the behavior of toxic gases.

James Hillier, who has been director of the research department of Melpar, Inc., a subsidiary of the Westinghouse Air Brake Co., has joined the research and engineering staff of the Radio Corporation of America as an administrative engineer. Hillier was associated with RCA Laboratories from 1940 to 1953, first as a research physicist and later as supervisor of fundamental electron microscope research.

The following appointments to assistant professor have been announced. Philadelphia College of Pharmacy and Science: **Robert E. Abrams,** pharmacy. Florida State University: **Conway W. Snyder,** physics. Tulane University: **Leo F. Kock,** botany.

Henry A. Imus, formerly head of the physiological psychology branch at the Office of Naval Research, has been appointed assistant to the director of the National Institute of Neurological Diseases and Blindness of the National Institutes of Health. His new duties involve program analyses and program development in the fields of neurological diseases and sensory disorders.

In the department of chemistry at the University of Southern California, **Robert D. Vold** has returned from his sabbatical year in the Netherlands to resume his duties as professor of colloid chemistry, and **Arthur W. Adamson** and **Karol J. Mysels** are on sabbatical leave this fall. Adamson left on 27 Oct. for Copenhagen where he will work in Bjerrum's laboratory.

Harriet C. Jameson has been appointed chief of the history of medicine division of the Armed Forces Medical Library, Washington, D.C. She joined the division as head of the catalog section in 1950.

Christina C. Hilbrandt of the index-catalogue division retired on 30 Sept. after more than 36 yr of continuous employment in the preparation of the *Index-Catalogue*. In recognition of long and faithful devotion to duty, a certificate of merit signed by the Surgeon General of the Army and the director of the Armed Forces Medical Library was presented to Miss Hilbrandt. She established a record of 26 yr of continuous service without the loss of a day charged to sick leave.

Necrology

Carl E. Arvidson, 56, electrical engineer and vice president of the Consumers Power Co., Jackson, Mich., 20 Oct.; **Robert A. Budington,** 82, professor emeritus of zoology at Oberlin College, Oberlin, Ohio, 23 Oct.; **Austin H. Clark,** 73, investigator in oceanography, ornithology, entomology, and marine biology, authority on butterflies, author, and retired curator of echinoderms at the Smithsonian Institution, Washington, D.C., 28 Oct.; **Bernard A. Etcheverry,** 73, author and professor emeritus of irrigation engineering at the University of California, Berkeley, Calif., 26 Oct.; **James T. Jardine,** 72, agricultural scientist, investigator in the use of forest land for grazing, former director of the Oregon Agricultural Experiment Station, and retired director of research for the Dept. of Agriculture, Washington, D.C., 24 Oct.; **Thomas F. Larkin, Jr.,** 42, civil engineer with the Consolidated Edison Co., New York, 21 Oct.

Paul E. Miller, 65, agronomist and former director of the University of Minnesota Agricultural Extension Service, Minneapolis, Minn., 21 Oct.; **Bryan Hugh O'Neil,** 49, archeologist and inspector of ancient monuments, London, 24 Oct.; **Harry Spaulding,** 69, authority in the field of traumatic surgery and first president of the American Academy of Compensation Medicine, New York, 20 Oct.; **Swain J. Swainson,** 53, former supervisor of operations at the Atomic Energy Commission's research laboratories in Winchester, Mass., and head of the mineral processing laboratories of the American Cyanamid Co., Stamford, Conn., 22 Oct.; **Francis Witmer, Sr.,** 81, former head of the civil engineering department at the University of Pennsylvania, Philadelphia, Pa., 27 Oct.

Meetings

The relationships among living units, from cells to human beings, were deliberated in a 5-day **Josiah Macy, Jr., Foundation Conference on Group Process** that took place 26–30 Sept. at Cornell University. This was the first of five annual conferences on the general subject of "group process." The participating scientists from this country and abroad represented anthropology, biology, ethology, medicine, psychology, psychiatry, and zoology. The conference began with an open house at the Cornell University Behavior Farm Laboratory. Howard S. Liddell, A. U. Moore, and Helen Blauvelt of Cornell gave demonstrations of conditioning under stress in goats.

The conference's purpose was stated by Frank Fremont-Smith, medical director of the Macy Foundation, who also explained that the conference was devoted to informal discussions and free interchange of data, ideas, and concepts rather than to formal presentations. Liddell, director of the Cornell Laboratory, was conference chairman. Among the nine "members" who attended all five conferences, were Margaret Mead of the American Museum of Natural History in New York and Erik Erikson of the Astin Riggs Foundation in Stockbridge, Mass., anthropologists; Jerome Bruner of Harvard University, Harris B. Peck of New York, and Liddell, psychologists; Frieda Fromm-Reichmann of the Chestnut Hill Sanitorium in Rockville, Md., and John Spiegel of the Psychological Clinic in Cambridge, Mass., psychiatrists; Jerome Frank of the Johns Hopkins University School of Medicine, group psychotherapist; and Eckhardt Hess of the University of Chicago, ethnologist.

Four day-long discussion sessions were held: "General principles of development," led by Frank A. Beach of Yale University; "Psychology and ethology as supplementary parts of a science of behavior," Niko Tinbergen of Oxford University; "Dynamics of the mother-newborn relationship in goats," H. Blauvelt of Cornell; and "Innate motor and receptor patterns," Konrad Z. Lorenz of the Max Planck Institute for Ethology in Germany.

On 6–9 Dec. the **Entomological Society of America** will hold its second annual meeting since the reorganization of 1 Jan. 1953. About 600 to 800 members and guests are expected to gather for the program that includes more than 160 scientific papers arranged under the supervision of W. R. Horsfall of the University of Illinois, program chairman. Meeting headquarters will be in the Rice Hotel, Houston, Tex.

The general sessions of the meeting will be presided over by H. H. Ross of the Illinois Natural History Survey, president of the E.S.A. A special feature will be recognition of the centennial of professional entomology by two invited speakers: Roger C. Smith (Manhattan, Kan.) will speak on "Entomology and its accomplishments," and P. J. Chapman (Geneva, N.Y.) has "Entomology and its future" as his topic. Among the other invited addresses to be given are "Arthropod transmitted virus diseases in Trinidad, B.W.I., with special reference to yellow fever" by Dr. Wilbur D. Downs, Rockefeller Foundation; "The interrelations of biological control and taxonomy" by Curtis W. Sabrosky, U.S. Department of Agriculture; "The ecological approach to management of insect populations" by J. H. Pepper, Montana State College.

Partially because of the meeting's proximity to Kerrville, Tex., where the U.S. Department of Agriculture conducts important research on insects attacking domestic animals, the sessions devoted to medical and veterinary entomology will be particularly active. An innovation at the meeting will be the conduct of three concurrent sessions on the morning of 8 Dec. that are so closely scheduled that the exact time of each speaker's presentation will be known to all.

The **AAAS Committee on Social Physics** has organized two sessions in Section K—Social and Economic Sciences that are to take place on 27 Dec. during the association's annual meetings in Berkeley, Calif. This program is under the chairmanship of S. C. Dodd of the Public Opinion Laboratory, University of Washington, Seattle, and is built around the topic *Diffusion Theory—Contributions Towards Interdisciplinary Unifying of Mathematical and Semantic, Physical and Biological, Psychological and Sociological Models and Experiments.* Papers formally synthesizing diverse points of view are being prepared, exchanged, and revised in view of the other papers. Contributors are Anatol Rapoport, Nicholas Rashevsky, H. D. Landahl, Henry Winthrop, Richard J. Hill, Stuart C. Dodd.

Available Fellowships and Awards

Under a program devised jointly by **McGill University** and the **Arctic Institute of North America** and supported financially by the **Carnegie Corp.** of New York, certain scholarships are offered to students possessing a bachelor's or master's degree or the equivalent. These scholarships are tenable at McGill University, Montreal, and are normally offered to students proceeding to a doctoral degree in a subject calling for active field research in arctic or subarctic North America. Candidates who do not intend to proceed to a degree are not necessarily disqualified.

Such subjects as anthropology, bacteriology, botany, geography (including glaciology and meteorology), geology, genetics, parasitology, psychiatry, psychology, sociology and zoology will be considered, and successful candidates will be enrolled in one of these departments. In arriving at decisions the committee will bear in mind the general furtherance of northern research and also the physical as well as academic suitability of candidates.

The scholarships are normally for 1 yr and average $1250 for the academic session and $1000 for the expenses of a summer's field expedition. Applications should be submitted to the secretary of the Carnegie Arctic Program, Arctic Institute of North America,

3485 University St., Montreal, P.Q., and should include a confidential recommendation of the candidate's qualification in his or her selected field and a clear statement of the intended arctic or subarctic research project. *Applications for the 1955–56 session should reach Montreal by 1 Apr. 1955.* If field work in the summer of 1955 is anticipated, applications must be in *by 1 Jan. 1955.*

Under another McGill–Arctic Institute–Carnegie program an annual fellowship is offered. This $4000 fellowship, tenable at McGill, is for a senior candidate who has engaged in suitable arctic or subarctic field projects and who requires a year's residence at a center that specializes in arctic learning in order to prepare a monograph or a book or to continue study in a field connected with arctic or subarctic problems. It is intended primarily for senior candidates who have already completed their academic training. Applications for this fellowship should also be submitted to the secretary of the Carnegie Arctic Program. *The deadline for 1955–56 is 1 Jan. 1955.*

The American Academy of Arts and Sciences is offering the **Francis Amory septennial prize** for outstanding work addressed to the alleviation or cure of diseases affecting the human reproductive organs, in particular those of men. No formal applications and no essays or treatises from candidates are desired; but nominations, supported by statements of qualifications in respect to work consummated between 10 Nov. 1947 and 10 Nov. 1954, will be *accepted until 1 Dec.* These should be sent to 28 Newbury St., Boston 16, Mass.

The **Atomic Energy Commission** has recently established a marine biological laboratory at Eniwetok in the Marshall Islands. The laboratory has a twofold purpose: to serve the AEC in connection with biological studies related to atomic test activities; and to make facilities available to university biologists who are interested in conducting fundamental studies. The location of the laboratory provides unusual conditions for biological studies of marine and land animals and plants of the Central Pacific area.

Eniwetok Atoll lies 2500 mi southeast of Hawaii and is made up of a circle of small coral islands approximately 20 mi in diameter. Most of the islands are covered with tropical vegetation, but a few have been extensively cleared to facilitate operations during test periods. Islands and coral reefs suitable for field studies can be reached by boat and aircraft.

The laboratory, which will accommodate up to 10 investigators at a time depending upon operational requirements, is well equipped for biochemical and general laboratory procedures. Facilities for maintaining organisms in running sea water are provided. Collecting gear is available for offshore studies.

For projects that will be beneficial to the national welfare or the scientific interests of the United States, the AEC will consider limited sponsorship of investigations. That is, for investigators with approved projects, the AEC will provide laboratory space, the usual laboratory supplies, and transportation to the laboratory. Lodging and food are available at a nominal cost. Inasmuch as Eniwetok is a restricted area, AEC security clearance is required of all investigators. Inquiries should be directed to the Biology Branch, Division of Biology and Medicine, Atomic Energy Commission, Washington 25, D.C.

In the Laboratories

The Ercona Corp., New York, exclusive American agent for VEB Carl Zeiss Jena, instrument manufacturing firm in the Eastern Zone of Germany, has included the following statements in a recent letter to the editors about **Zeiss in Germany.**

> We were quite disturbed to note . . . the report [*Science* **120**, 23 (2 July 1954)] concerning the status of Zeiss in Germany, as submitted by Carl Zeiss, Inc., New York, the *former* exclusive representatives of the great optical firm of Carl Zeiss Jena. . . . The injustice suffered by the VEB Carl Zeiss Jena and the Ercona Corporation . . . and our desire to clarify the controversy occasion this letter.
>
> By virtue of its unique organization and of its former plants in Jena operating under its charter, the Carl Zeiss Foundation in Jena acquired a world-wide reputation for opto-fine mechanical productions of superb quality. On the strength of the spirit and letter of the original charter of Professor Dr. Ernst Abbe, its founder, the city of Jena has been specifically and for all times stipulated as the domicile of the Carl-Zeiss-Stiftung. . . .
>
> Following World War II, the Carl-Zeiss-Stiftung Jena organized in Western Germany the firm Zeiss-Opton, G.m.b.H., with Heidenheim as the domicile. The former executives of Carl Zeiss Jena resigned their posts and functions in 1945 and submitted to the administration of the Carl-Zeiss-Stiftung proposals for the appointment of new executives, which were then accordingly appointed. One of these executives was Dr. H. Schrade, who is now directing the affairs of VEB Carl Zeiss Jena. The new executives then entrusted the resigned executives with the administration of the Zeiss-Opton, G.m.b.H., then established in Western Germany.
>
> Some time after 1949, the former executives, who had resigned their posts in 1945, tried to obtain hold of the entire administration of the foundation although having . . . expressly declared in their letter of January 28th, 1946, that they no longer held any functions in the Carl Zeiss Foundation in Jena. Despite the plainly formulated clauses of the charter, the former executives created a firm by the name of "Carl Zeiss, Oberkochen" which, incidentally, has nothing whatsoever to do with the Jena works. The Oberkochen firm is not legally entitled to the use of the name "Zeiss." The Carl Zeiss Foundation, Jena, has started procedings before the Provincial Court of Stuttgart opposing the adoption of the aforesaid title.
>
> What cannot be resolved, however, in any court is the undisputed fact that the Zeiss works continue to operate in Jena as a national corporation which employs today well over 18,000 skilled workers. . . . It has been our happy privilege to provide for the last five years many . . . instruments to satisfy the demands of science and industry. The acceptance

thereof on the part of a demanding clientele is sufficient . . . proof of the quality inherent in those products.

The subsequently organized firm of "Zeiss-Opton, G.m.b.H.," which, we repeat, forms part of the Carl-Zeiss-Stiftung Jena and employs about 2800 workers, has been incorporated in the firm Carl Zeiss Heidenheim by the manipulations of a small group of persons in Western Germany. It is the adoption of the name "Zeiss" which is now being vigorously opposed by the Carl Zeiss Foundation, Jena, before the Stuttgart court.

The products of VEB Carl Zeiss Jena are now as before available. . . . .

Plans have been completed for the construction by **American Potash and Chemical Corp.** of a plant for the manufacture of lithium chemicals near San Antonio, Tex. This facility will be owned by a newly formed company, **American Lithium Chemicals, Inc.,** 50.1 percent of whose stock is held by American Potash and the balance by Bikita Minerals (Private) Ltd. Lithium ores for the plant will be supplied by the latter company from its large deposit of lithium ores in Southern Rhodesia. Initial production at San Antonio will be lithium hydroxide.

A major construction program involving the expansion of the **Atomic Energy Commission's** feed materials production and processing plants at three sites has been announced. The total cost of the program is estimated at approximately $67,000,000. It involves construction of a new facility in the St. Louis, Mo., area and expansion of existing facilities at the Feed Materials Production Center at Fernald, Ohio, the feed materials facilities at St. Louis, and the feed plant at the gaseous diffusion plant at Paducah, Ky. The three installations are operated for the AEC by, respectively, the Mallinckrodt Chemical Works, The National Lead Co. of Ohio, and the Union Carbide and Carbon Corp.

The function of the St. Louis and Fernald feed materials plants is to convert high-grade uranium ore and concentrates into highly purified uranium compounds or metal. The Paducah facilities will contribute to the commission's capacity to convert uranium into forms useful to its program. The expansion will substantially increase the nation's production of materials for use in atomic energy programs.

Miscellaneous

The U.S. Fish and Wildlife Service hopes that hunters will return metal **leg bands recovered from wild game** or other migratory birds, along with information about where and when the birds were shot. It has been estimated that 500,000 birds are banded each year and that a total of 7 million birds have been tagged to date.

The bands often reveal much about the bird's traveling habits. A young pintail, for example, was banded in Labrador on 7 Sept. 1951, and was caught in England 2 wk later on 25 Sept. 1951. Other pintails have illustrated this bird's amazing range of travel. A pintail banded in Alaska in the summer of 1950 was caught in Delaware in the fall in 1951. Still other pintails have been banded in North Dakota and recovered in Colombia, South America; banded in California and found in New Zealand; and banded in Hawaii and caught in Alberta, Canada.

This method of keeping a record of migratory birds also gives the researcher some indication of the bird's age. For instance, a mallard banded in California in 1932 was recovered 20 yr later. The oldest record of longevity, however, was a Caspian tern that was banded in Michigan in the summer of 1925 and taken as a scientific specimen in Ohio in 1951, 26 yr later.

Each person who returns a band to the U.S. Fish and Wildlife Service, Washington 25, D.C., receives a letter telling of the bird's banding and any additional biography that may have been collected from other leg band reports.

The Department of Commerce and the Small Business Administration have jointly issued a paper-bound book entitled ***Chemical Products and Processes.*** It contains 1350 abstracts or brief descriptions of Government-owned inventions in the chemical field. The purpose of the book is to let the public, and particularly the small business man, know what Government-owned chemical inventions can be exploited. The inventions are ordinarily available on royalty-free license. The new book can be obtained for $3 from the Office of Technical Services, U.S. Dept. of Commerce, Washington 25, D.C. Similar books on patents in other industries are also available.

Appearing in the December issue of ***The Scientific Monthly*** are five papers on *Perspective and Horizons in Microbiology,* by L. W. Jones, S. A. Waksman, A. J. Kluyver, J. Trefouel, and H. Von Euler-Chelpin, these being based on papers presented at the recent dedication of the Institute of Microbiology, Rutgers University. Other featured articles are "Storm of Balaklava and the daily weather forecast" by H. Landsberg; "Photosynthetic reclamation of organic wastes" by H. B. Gotaas, W. J. Oswald, and H. F. Ludwig; "Role of aircraft in forest-pest control" by E. W. Johnson; "The preacher talks to the man of science" by H. R. Rasmusson; "Ehrlich, biologist of deep and inspired vision" by Iago Galdston. Other contents of the issue include "Science on the march," four letters to the editors, and 25 book reviews.

Research **laboratories serving industry** are being listed anew by the National Academy of Sciences and the National Research Council, Washington. Officials of these organizations are on the search for new laboratories or others that might have been overlooked in previous directories.

The ***Gulf of Mexico—Its Origin, Waters, and Marine Life,*** designated as Fishery Bulletin 89, may be purchased for $3.25 per copy from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.