effects of such a change of concept for membrane properties and permeability. The obvious effect on anatomical thinking is to abolish the concept of the cuticle being a chitinous sheet with a fundamentally different layer on the outside (epicuticle). This concept is replaced by that of a continuous protein layer, usually modified by the addition of waxes on the outer surface and chitin and, less often, other substances in the inner region.

Quite likely, an extended polemic about a single "basic" component would be futile. The arthropod cuticle is obviously a highly complex organization. All that can safely be said at present is that the known manifestations are consistent with the view that arthropod cuticles are variously modified protein membranes and are not consistent with the view that they are basically chitinous.

NEWS *and Notes*

Two bills providing for a National Science Foundation were introduced into the Senate on Friday, February 7. The first bill, now numbered S. 525, was introduced by Senator Elbert D. Thomas of Utah and is identical with S. 1850, which passed the Senate in the 79th Congress, but which died in a House Committee.

The new bill introduced by Senator H. Alexander Smith of New Jersey is a compromise measure, which Mr. Smith believes avoids the controversial features of the Kilgore-Magnuson bill (S.1850) of the last session and S.525 of this. Senator Smith, who is a Republican, said that he was directed by Robert A. Taft of Ohio, majority leader of the Senate, to prepare a bipartisan bill in an effort to get a National Science Foundation established in this session. Accordingly, Senators Warren G. Magnuson and J. W. Fulbright, who are Democrats, and Republicans Guy Cordon, Chapman Revercomb, and Leverett Saltonstall joined with Senator Smith in introducing the new bill.

Both bills were referred immediately to the Senate Committee on Labor and Public Welfare, of which Senator Taft is the chairman.

The new Smith Bill provides for the creation of a National Science Foundation composed of 48 "outstanding men and women who are recognized leaders in the fields of the fundamental sciences, medical science, engineering, education, or public affairs" to be appointed by the President. This body is authorized to develop and encourage scientific research in the interest of national welfare and defense, including the award of scholarships and fellowships and global interchange of scientific information.

The 48 members of the National Science Foundation would delegate broad powers to an executive committee of 9 members, who would select the director and deputy director of the Foundation. These positions would be full-time jobs at $15,000 and $12,000 annually.

The bill provides for the immediate establishment of 5 divisions: medical research, physical sciences, biological sciences, national defense, and scientific personnel and education. The inclusion of the social sciences is left to the judgment of the Foundation.

The new bill does not estimate the annual cost of the program, but authorizes such sums as may be necessary to carry out the provisions.

On Friday, February 7, Senator Smith said that the number of persons suggested in the bill, 48, bears no relation to the number of states and may prove to be unwieldy. Presumably, a smaller number, perhaps 24, might ultimately be decided upon. Senator Smith also said that in his opinion the Foundation would have jurisdiction over atomic research of a nonmilitary nature. The new bill does provide for the distribution of funds by states. This was one of the controversial features of the earlier bills introduced into the last session, and, according to Senator Smith, any attempt to introduce this feature into S. 526 will not be acceptable to the sponsors of the measure. He said: "The sponsors of this legislation are aware of the fact that they are pioneering in a new field. They are convinced that, if this experiment is to be a success, the greatest possible latitude must be given to the scientific experts throughout the United States to determine what research in basic science is entitled to and is in need of Federal support, and who are the most promising younger members of the profession who are entitled to scholarships or graduate fellowships to complete their education." He went on to say ". . . that the development of the Foundation should be by the trial-and-error method with amendments to the basic act from time to time as the experiment proves necessary."

As has previously been announced in *Science*, the AAAS is planning an Inter-Society conference on the National Science Foundation on February 23, at which time it is expected that the new bills will be compared and analyzed.

Leaders in the Congress who have been concerned with a National Science Foundation have been invited to spend Sunday evening with more than a hundred delegates to the Inter-Society conference. In next week's issue of *Science* the complete text of the new S. 526 will be published.

Maj. Gen. H. S. Aurand, director of Research and Development, War Department, spoke before 1,500 physicists at the joint annual meeting of the American Physical Society and American Association of Physics Teachers at Columbia University on January 30.

During World War II, he said:

. . . The military man's respect for the scientist was greatly increased. Those of us who had the opportunity to work with scientists during World War II were amazed at your vision, your intense devotion to your work, and your calm assurance of purpose. Time after time, when the chips were down, the scientists came through with the answers.

Here at home, in your laboratories, you

quietly and without fanfare provided us with the marvelous defensive and offensive weapons which spelled the difference between success and defeat. That the War Department could fail to recognize the necessity for a greatly increased Research and Development Program after World War II is unthinkable.

The absolute necessity for the closest association between the scientist and the military was made obvious; yet at the very time that this occurred, the agencies with which the military had been dealing —the Office of Scientific Research and Development and the National Defense Research Committee—were winding up their work.

During the past 7 months, since I became Director of Research and Development, neither of these agencies has taken on any new problems. On the contrary, many of the things which they had in progress were taken over by the War Department, in order that these promising projects would not die.

The War Department fully realizes that if it is to stay ahead of its competitors, it must maintain close association with scientists. As I have already stated, the basic knowledge necessary to stay ahead of our competitors must come from science. We are greatly in need of an official agency of science with which to maintain this contact. You can readily see that the War Department is highly desirous of having this Congress establish a National Science Foundation of some sort at as early a date as possible.

The performance of this task of collaboration between science and the military is not the only reason why the War Department wants the National Science Foundation. There should be a clearing house for Federal research contracts, in order that the War Department, which is just one of many Federal agencies with a Research and Development Program, may know whether work is already being undertaken elsewhere in a field which it desires to explore. It needs to know the best place to go for its pure research work, as well as the best qualified people to do the job it has in mind. And finally, there has to be some sort of mobilization plan for science, not only in the event of an emergency, but to carry on the necessary research work in peacetime. The War Department is not the agency to prepare such a plan; yet in the absence of such agencies, the Research and Development Division has felt compelled to go ahead with planning in this field in cooperation with the National Research Council and other civilian agencies that are concerned with the plans of scientific manpower. A National Science Foundation could do all of these things with propriety. . . .

About People

Lloyd W. Law has recently been appointed director of scientific administration, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine.

F. H. McCutcheon, formerly, professor of zoology, North Carolina State College, is now professor and head, Department of Physiology and Pharmacology, School of Veterinary Medicine, University of Pennsylvania, Philadelphia.

H. S. Armstrong, assistant professor of geology, McMaster University, Hamilton, Canada, was named assistant dean of arts and sciences September 1, 1946.

R. H. Peckham, Cdr., H(S), USNR, has returned as associate professor of physiological optics in the Medical School, Temple University.

Rupert Wildt, Yale University, has been appointed visiting professor of astronomy at the University of Basle for the academic semester, March–July 1947. In February he will give a series of lectures at the Institut d'Astrophysique, Paris.

L. Kermit Herndon has been promoted from associate professor to professor of chemical engineering at Ohio State University. Frederick J. Salter, at the same time, was made associate professor of agronomy.

Fellowships

The University of Michigan, in cooperation with the city of Flint, will grant six $1,000 fellowships to graduate students in the social sciences in 1947–48. Grants will be made as part of a long-range Social Science Research Project on social, economic, and political problems of the Flint metropolitan area.

Two operating units have been organized to promote the project. On the University campus focus is the Metropolitan Community Seminar, attended by faculty representatives of participating departments, fellowship recipients, and resident director of the project in Flint. Participating departments are economics, geography, political science, public administration, sociology, and architecture and design. Faculty members of the Seminar are Edgar M. Hoover, Robert B. Hall, Arthur W. Bromage, John A. Perkins, Amos H. Hawley, chairman, and John W. Hyde, respectively. The seminar enables interchange of ideas, techniques, and knowledge among the various fields of training.

The office in Flint is comprised of a full-time resident director, Victor Roterus; clerical and stenographic assistance; and the Flint Advisory Board, whose members represent a wide range of local interests. Functions of the Flint unit include guidance of local public relations, consultation on research, facilitation of field research, and advice on local publication and distribution of research reports.

Financing of the project is equally divided between the University and groups in Flint.

Administration of the project is in the University's Institute for Human Adjustments, under direction of Clark Tibbitts.

Inquiries and applications for fellowships for 1947–48 should be sent to Ralph A. Sawyer, dean, Horace A. Rackham School of Graduate Studies, University of Michigan, Ann Arbor, Michigan.

Colleges and Universities

The California Institute of Technology, Pasadena, California, has appointed Max Delbrück, associate professor of physics, Vanderbilt University, as professor of biology to begin July 1, 1947. N. H. Horowitz, senior fellow in research, California Institute of Technology, has been promoted to associate professor of biology.

The Ohio State University has been awarded $25,000 by Swift & Company, Chicago, to finance a five-year research project on poultry breeding under R. George Jaap, professor of poultry husbandry. Dr. Jaap, editor of *Poultry Science*, and former Oklahoma A. & M. College staff member, joined Ohio State this year.

Industrial Laboratories

Esso Laboratories, Standard Oil Company, New Jersey, have developed a new-type synthetic resin from petroleum which can be applied successfully to iron, brass, bronze, aluminum, and highly

polished metal, in addition to wood and steel. It also promises good results as a base for textiles, footwear, and rubber adhesive.

The substance, called A-resin, was developed in cooperation with technicians of the paint and varnish industry, the current issue of *The Lamp*, Standard Oil publication, reports. When the work was started three years ago, no satisfactory process had been developed to make quality synthetic resins from crude oil.

As a baked priming coat on automobiles it is hard, durable, light-fast, and chemically resistant. Coating for a can only 2/10,000 inch thick remains unbroken when metal sheets are stamped and punched, withstands pasteurization treatment of 20 minutes, and is unaffected by high acidity. It is a short-oil-length resin, which means economy of drying oil, *The Lamp* said.

Heat from atomic energy piles may be used as heat in chemical or metallurgical industries where primary heat is required, C. G. Suits, vice-president and director of the research laboratory, General Electric Company, stated in a science forum at Schenectady recently. The atomic power plant will manufacture important new by-products such as fissionable material and a variety of radioactive chemical compounds which, he pointed out, will make the plant more analogous to a chemical manufacturing plant than an electric generating station.

General Electric now has under construction at Schenectady a new $8,000,000 General Electric research laboratory, and a $20,000,000 nuclear research laboratory, to be named Knolls Atomic Power Laboratory, fourth in the network of national laboratories for the Manhattan Project. The Company also recently took over the Hanford Engineer Works, Richland, Washington.

Meetings

The American Geophysical Union will hold its 28th annual meeting in Washington, D. C., April 28–30. Headquarters will be in the National Museum.

"Federal Control of Drugs and Cosmetics" will be the subject of the February 25 meeting of the Symposium on Medicolegal Problems, Chicago Bar Association, Chicago. Anton J. Carlson, professor emeritus of physiology, University of Chicago, and former president of AAAS, will preside. The medical presentation will be made by Morris Fishbein, editor, *Journal of the American Medical Association*, and the legal presentation by Alvin M. Loverud, counsel, Food and Drug Division, Federal Security Agency, Washington, D. C.

The symposium, under cosponsorship of the Institute of Medicine of Chicago, Chicago Medical Society, and Chicago Bar Association, runs from February 4 through March 4.

The American Association of Anatomists will hold its annual meeting in Montreal, Canada, April 3–5, at the invitation of McGill University. Headquarters will be the Mount Royal Hotel.

The American Association of Cereal Chemists will hold its 32nd annual meeting at the Hotel President, Kansas City, Missouri, May 19–23.

William A. Haley and A. J. King, Fisher Flouring Mills Company, are program chairman and editor, respectively. Sessions and their leaders are: sanitation and contamination control, Gaston Dalby, Ward Baking Company; human and animal nutrition, Frank Gunderson, Pillsbury Mills, Inc.; enzymes, Eric Kneen, Kurth Malting Company; baking chemistry and technology, C. J. Patterson, president, C. J. Patterson Company; agronomy and milling technology, John A. Shellenberger, Kansas State College; and general session, Hugh K. Parker, Wallace and Tiernan Company.

Papers for presentation at the convention with abstracts of 200 words should be sent to the Program Committee. Exhibitors wanting display space should communicate with Fay Buck, Kansas Flour Mills Corporation, North Kansas City 16, Missouri.

The Optical Society of America will hold its winter meeting at the Hotel Pennsylvania, New York City, February20–22. A total of 55 papers will be presented. The American Institute of Physics will conduct a placement register in connection with the meeting, registration forms for which may be obtained from the Institute Office, 57 East 55th Street, New York 22, New York.

The American Mathematical Society will hold its 423rd meeting at Columbia University on February 22. There will be 26 papers, and at the afternoon session N. H. McCoy, Smith College, will deliver an address entitled "Subdirect Sums of Rings," at the invitation of the Society.

Elections

The Eastern Pennsylvania chapter of the Society of American Bacteriologists elected Harry E. Morton, University of Pennsylvania, president, and Amedeo Bondi, Jr., Temple University, secretary-treasurer, for 1947.

The Nebraska section of the American Chemical Society has elected the following officers for 1947: Carl E. Georgi, University of Nebraska, president; D. E. Fox, Kearney, Nebraska, State Teachers College, vice-president; Raymond Borchers, Nebraska Agricultural Experiment Station, secretary-treasurer; and Walter Militzer, University of Nebraska, councilor.

The Society for the Study of Evolution, at its first annual meeting in Boston January 28–31, elected the following officers: J. T. Patterson, president; L. R. Dice, G. L. Stebbins, and A. S. Romer, vice-presidents; S. A. Cain, Cranbrook Institute of Science, Bloomfield Hills, Michigan, secretary; K. P. Schmidt, Chicago Natural History Museum, treasurer; and E. Mayr, American Museum of Natural History, New York, editor of the quarterly research journal, *Evolution*, which will appear for the first time in May. Orders for subscriptions to the journal may be sent to the treasurer.

The American Ethnological Society has elected for 1947, E. Adamson Hoebel, president; Sherwood Washburn and Margaret Mead, vice-presidents; Esther S. Goldfrank, secretary-treasurer; Rene d'Harnoncourt, Julian H. Steward, and Carl Withers, directors; and Marian W. Smith, editor.

The John and Mary R. Markle Foundation has announced election of Dorothy Rowden, former member of the Columbia Broadcasting System Education Division, as secretary of the Foundation beginning February 1. Miss Rowden was assistant to the director of the American Association for Adult Education and research associate of the Institute of Adult Education, Teachers College, Columbia University. For two years she was editor of the *American Library Association Bulletin* and in charge of public relations for the Association. She succeeds Florence E. Quick, who retires as secretary but will

continue as part-time administrative assistant.

The Markle Foundation is engaged in support of medical research and has expended over $4,000,000 for this purpose through medical colleges and other medical institutions since 1936.

The first *Catalog of auxiliary publications in microfilms and photoprints*, listing about 2,000 documents, has been published by the American Documentation Institute and may be obtained free by writing the Institute, 1719 N Street, N. W., Washington 6, D. C.

The catalog lists documents deposited with the Institute under its auxiliary publication program, established in 1937 to enable scientists and scholars to publish important papers too long for technical journals. Any of the documents listed may be obtained on 35–mm. microfilm or in photoprints 6 x 8 inches at rates listed in the catalog. Many translations of foreign-language papers are included. Also available in microfilm are sets of scientific journals for use of libraries unable to get runs of the issues missed. Back volumes of *Science* are available in this manner.

Officers of the American Documentation Institute are Watson Davis, president; Keyes D. Metcalf, vice-president; Steuart H. Britt, treasurer; and Helen M. Davis, secretary.

A list of 864 standards approved for national use of industry by the American Standards Association was published recently by P. G. Agnew, vice-president of the Association. The revised list, which includes many of those developed under war procedure and now approved for peacetime use, will be available to interested trade, technical, and governmental bodies and individuals without charge.

The standards listed include definitions of technical terms, specifications for metals and other materials, methods of work, and methods of test for finished products. They also include standards dealing with public and industrial safety, industrial medicine, and a wide variety of consumer goods.

These standards represent agreement on the part of maker, seller, user and regulatory groups as to the best possible practice at the time of approval and are revised periodically to keep up with mechanical invention, developments of power, and new uses for materials.

The list represents the cumulative efforts of about 3,000 men, representing 660 organizations working on the development of standards.

The New York Zoological Society recently received a legacy of approximately $2,500,000, largest single gift in its history, Fairfield Osborn, president, announced at the 51st annual meeting in New York January 21. He also announced other gifts totaling $282,000.

The legacy is a share in a trust fund established by the will of Mrs. Frederick Ferris Thompson, of which former New York superintendent of banks, Clark Williams, was life beneficiary.

Future needs of the Zoological Society total $5,000,000, Mr. Osborn said. Of this, $1,500,000 will be devoted to conservation, education, and research; $2,250,000 will be used for the new aquarium which the Society and New York City are planning; and $1,250,000 will go toward an extensive modernization program of the Zoological Park.

In his report to members Mr. Osborn said the Society had completed its fifth successive year with a balanced budget, all expenses being met by income from capital funds and members' dues. Total membership has more than doubled since a membership campaign was undertaken in the spring of 1945.

Robert M. Hutchins, chancellor, University of Chicago, addressed the meeting on "What Man Has Made of His World."

Recent Deaths

William A. Moody, 86, Wing professor emeritus of mathematics, Bowdoin College, Brunswick, Maine, died in Brunswick, February 2. He had served on the faculty from 1884 until 1926.

Francis William Maclennan, 70, vice-president and consulting engineer of the Miami, Arizona, Copper Company, died in Los Angeles, January 28.

George W. Mixter, 70, consulting engineer, chief of the production division of American aviation in World War I, died in New York January 29. He was author of *Primer of navigation*, basis for teaching navigation to more than 100,000 men in the recent war.

Paul Langevin, 74, director of the École de Physique et Chimie Industrielle, Paris, died December 30.

H. St. J. L. Winterbotham, 68, recent general secretary of the International Geodetic and Geophysical Union, died in England December 10.

F. M. Rowe, 55, professor of color chemistry and dyeing, University of Leeds, England, died December 8.

Samuel O. Mast, 75, emeritus professor of zoology, The Johns Hopkins University, died February 3 in Baltimore.

Morgan Hebard, 59, research fellow and former curator of insects, Academy of Natural Sciences of Philadelphia, died December 28. In 1945 Mr. Hebard presented his collection of Orthoptera, containing some 250,000 specimens, to the Academy, with which he had been affiliated for over four decades.

Charles Francis Doney, 39, assistant horticulturist, Brooklyn Botanic Garden, died in Buffalo, New York, January 6. He had been with the Botanic Garden since 1931.

NRC News

A Committee on Classification of Scientific Personnel, with responsibility of advising the Civil Service Commission on basic standards of classification of scientific employees, has been established with the following members: Elmer Higgins, chief, Division of Fishery Biology, Department of Interior, chairman; Edward U. Condon, director, National Bureau of Standards; and H. C. McPhee, assistant chief, Bureau of Animal Industry, Department of Agriculture.

The Committee is an outgrowth of the Advisory Committee on Scientific Personnel, established by the Civil Service Commission under chairmanship of M. H. Trytten, director of the Office of Scientific Personnel (*Science*, April 12, 1946). To assist in its work in special fields the new Committee has set up a panel of experts in each of a number of areas: A. V. Carlin, Weather Bureau, meteorology; G. C. Clemence, Naval Observatory, astronomy; Francis M. Defandorf, Bureau of Standards, physics; Kenneth E. Lohman, Geological Survey, geology; Charles E. Kellogg, Bureau of Plant Industry, soil science; Edgar R. Smith, Bureau of Standards, chemistry; and Charles Whitten, Coast and Geodetic Survey, mathematics.

The Civil Service Commission recognizes that classification of scientific employees is a problem presenting fundamental differences from classification of