at present testing other substances which might take the place of Canada balsam and do not have the disadvantage of the latter.

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ADENOSINETRIPHOSPHATASE

OUR experiments corroborate the results of *W. A. Engelhardt* and *M. N. Ljubimowa*[1] according to which Adenosinetriphosphatase is bound to myosine. The enzyme is activated by Ca; Ca can be substituted by other bivalent metals.

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December 15, 1940

ANOTHER AVIVOROUS ANGLER OR GOOSEFISH

WHILE collecting (November 3, 1940) with a group of graduate students at Jamestown Beach near the mouth of Narragansett Bay, we found an angler fish (*Lophius piscatorius*) about three feet in length stranded high up on the beach, dead but in perfectly fresh condition. The previous day had been stormy, with a strong southeast wind, and since this beach is at the head of a small narrowed inlet opening toward the southeast, it had doubtless been subjected to a heavy surf on the preceding day.

This remarkable fish—the striking characteristics of which are a very broad flattened head; a rapidly narrowed, almost triangular, scaleless body with pectoral fins borne upon stout fleshy peduncles and pelvic fins superficially resembling the legs of a short-legged amphibian rather than fins of a fish; and last but not least, an enormous mouth furnished with pointed teeth hinged to bend inward (but not outward) and with a lure at the end of one of the barbels on the front of the head—is obviously an inhabitant of the bottom. However, it makes excursions to the surface, as some of its food items attest, specimens having been previously found to contain wooden lobster pot floats and other objects, including, besides fish, gulls, ducks, etc., and even to attempt, at least, to engulf geese and loons.

The present specimen contained a solid lump which upon examination proved to be a herring gull, normal in appearance except for somewhat moistened feathers. There was no evidence of air contained in the stomach or any suggestion, other than a heavy surf, of the cause of this angler becoming stranded.

While several records of the angler feeding upon birds are known,[1] few of these are American records, and it seems of interest to record this finding.

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POOR DELIVERY OF SCIENTIFIC PAPERS

I MOST heartily concur in all that Frances H. Allen says, in SCIENCE for January 3, about the poor delivery of many papers at scientific meetings.

At the recent Philadelphia meetings I left one symposium after failing to hear the first three speakers; and an entire evening was spoiled because a very prominent scientist, who gave one of the public lectures, could not be followed by those seated back of the middle of a moderately large auditorium.

The local arrangements, at least for the American Society of Zoologists, left nothing to be desired, but I felt that a considerable part of my time had been wasted for the reason mentioned above.

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SOCIETIES AND MEETINGS

THE AMERICAN ASSOCIATION OF SCIENTIFIC WORKERS[1]

THE symposium on "The Scientist and American Democracy" was the first effort on the part of the American Associaion of Scientific Workers to present before a large nation-wide gathering of scientists an evaluation of some phases of the interrelations between science and our democratic society. The two, well-attended sessions were presided over by Professors R. W. Gerard and A. H. Compton, and a number of outstanding American scientists gave papers dealing with four main themes.

In the introductory papers of the sessions Professors A. J. Carlson and Kirtley F. Mather discussed the scientist's concept of and his citizenly duties toward our democracy. The body of the first session was an evaluation of the scientist's relation to the material base of our technological civilization. Professor A. C. Lane summarized the implications of the scientific utilization of raw materials, Dr. C. E. Kellogg, using examples from agricultural problems, discussed the rôle which the scientist plays in determining policy in a democratic state, and Professor Walter Rautenstrauch presented a fundamental and searching analysis of our industrial and productive organization.

The body of the second session dealt with two

[1] *Nature*, 144: 668, 1939.

[1] Report on the symposium "The Scientist and American Democracy," held on December 27 and 28, 1940.

[1] Gudger, 1929, *Natural History*, Vol. 29, p. 155.

themes, the relation of the scientist to some public problems of domestic importance, and the preservation of science during the world crisis of the present war. In the first group were discussed three of the most pressing questions of the moment, Thomas F. McSweeney reporting on "Housing," Professor John P. Peters on "The Public Health," and Mr. Donald E. Montgomery on "Consumer Protection." It is significant that very great interest was evidenced by the audience and by the press in these closely reasoned papers. This attention indicated not only the urgency of the problems under discussion but also that scientists have a double interest in them, firstly as members of the democratic community and, secondly, as a group which looks forward to the solution of these problems on the basis of rational, scientific principles.

The last two papers, devoted to the question of the preservation of science, consisted of a report by President Leonard Carmichael of the methods and aims of The National Roster of Scientific and Specialized Personnel and of an examination by Dr. K. A. C. Elliott of the effects of the war on the science and scientists of the belligerent countries. Dr. Elliott's paper described activities by the A. A. S. W. on behalf of the preservation of data of European scientists and presented specific recommendations to American scientists for actions on their part to help preserve both the science and the scientists of the belligerent countries. These proposals have received wide national attention, in particular the suggestion for the safeguarding in America of European scientific data, and the suggestion that the council of the American Association for the Advancement of Science appoint a standing committee to study and initiate measures to preserve science in the belligerent countries and to aid the scientists of these countries as well as the refugee scientists who have been uprooted from their work and scattered over the world.

At the close of the meeting, a resolution was proposed by Professor Gerard and carried by the audience urging the council to take such steps. The National Committee of the American Association of Scientific Workers concurred in this resolution and transmitted it to the council.

At the first session, the president of the Association, Professor A. J. Carlson, described the scientist's concept of a democratic society as ". . . that social, economic, and political order which favors or permits the maximum of freedom and opportunity for the efforts and achievements of the individual, consistent with the common welfare, and gives the individual full or equal share in establishing, balancing, and sustaining that freedom and opportunity." Some phases of our social organism were then checked against this "blueprint," disclosing considerable divergence between the existing and the desired conditions but at the same time showing recent trends which have led to improvements. "The principle and practice of war as a national policy" was condemned by Professor Carlson as "an almost insurmountable obstacle in the path of the democratic way of life." He also emphasized that the attempt on the part of this country and of other countries to ". . . dictate, directly or under cover, the form of government for other nations . . . is worse than undemocratic, it is futile, in the long run." Since "democracy in its international relations . . . means honest and fair cooperation" Dr. Carlson challenged both the excuse of "self-defense" given by Hitler for his attacks upon his neighbors and the profession by Great Britain that it is fighting for democracy, ". . . remembering that British big business has also fought for pure democracy in far-off India and Africa for quite a spell."

At the second session, which dealt with important current problems facing society, Professor Kirtley F. Mather outlined the responsibilities of the scientist as a citizen in a democracy. Scientists "share with all other citizens in a democracy the responsibilities of rendering useful service to the community of which they are a part and of participating in the legal process of 'government by the people.' There are, however, certain responsibilities of citizenship that rest more heavily upon the scientist than upon other members of society or may even be his unique obligation. It is his mental habits that distinguish the scientist-citizen from the non-scientist-citizen. . . ." But ". . . the scientific organization of society in a democracy can be achieved only when the majority of its citizens have the scientific attitude toward social problems and act in accordance with that attitude of mind." Accordingly, "the totalitarian dictator . . . will use every weapon in his arsenal to prevent the spread of scientific habits of mind throughout the rank and file of his obedient serfs. The truly democratic leader, however, will do all he can to stimulate among his fellow citizens the desire to know all the facts and the ability to think intelligently. . . ." The scientist therefore has one task as a teacher and popularizer of science and of the scientific methods of thought. "Equally important is the responsibility that rests upon the scientist in a democracy to continue . . . unfalteringly his search for new and better ways of increasing the efficiency and comfort of mankind. Here he is beginning to find himself under a new obligation arising from the new conditions involved in twentieth century civilization.

"The great service rendered by science to society during the past four hundred and fifty years resulted largely from success in thinking on the level of invention. For the most part the relationships between the

objects and institutions thus invented were determined by the unguided operation of the principle of cause and effect or were regulated by conflict, competition, and the selection they brought in their train. Gradually however, and with increasing intensity in the last few years, man has become aware of the necessity for intelligent, purposeful regulation of these relationships. The interdependence of men in a world neighborhood makes necessary a new pattern of thought. The Age of Invention is even now giving way to the Age of Planning. . . . It is the responsibility of the scientist to make the machinery of planning consistent with the structure of the democratic society. A democratic form of coordinated control must be developed in the transition from the political state to the social service state. . . ."

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REPORTS

INDUSTRIAL RESEARCH IN THE UNITED STATES IN 1940[1]

THE total expenditure for basic production research in the United States in 1940 was probably $220,000,000. A nation-wide study was started by the Air Hygiene Foundation in attempting to reduce the estimated $900,000,000 a year lost to the industries by workers absent because of illness. The speed-up of production increases the hazards which result in many types of accidents and maladies. In a non-explosive coal-mining process a tube placed in a hole drilled in a vein expands when oil under high pressure is pumped into it. The Bureau of Mines reported on the hydrogenation of low-rank coals from the West. A satisfactory substitute for mica is needed and "Alsifilm" is being tried in lieu of mica splittings. A procedure of exploring for metal-bearing ores is based on the observation that plants growing over an ore body contain more of the metal in their tissues than plants from other places. American clays have displaced imported clays for many uses. "Duraglass" is a stronger bottle glass produced by automatic control; figured wire glass is made with chromium-plated wire. Valuable increases were reported in the light transmission of optical systems produced by suitable chemical treatment, such as with 1 per cent. nitric acid solution, to form low refractive index surface films; by following this process with a baking operation the glass surface is made much more durable. "Vycor" laboratory ware, which is 96 per cent. silica glass, is practically shockproof thermally; "Pyrex" highway reflecting markers have been pronounced successful by New York State engineers. Several new laboratories for powdered metals research were established. "Plast-Iron," a pure iron powder, was announced. The National Bureau of Standards studied the corrosion of metals used in aircraft. The casting of rods and tubes from molten metal is now performed continuously; wire is made by a process of slitting sheets instead of drawing metal through dies. The reduction of iron ores under pressure by carbon monoxide and the desulfurization of pig iron with calcium carbide were investigated. The output of information on all aspects of welding has continued. Uranium-nickel steels appear to be quite corrosion-resistant; silver-bearing 18/8 stainless steel is much more resistant to chloride solutions than the original alloy. The use of polonium in standard electrode alloys was found to improve the starting performance of spark plugs. Tellurium is employed in a new electric lamp. By an electrolytic process both plating with indium and its production in commercial quantities are possible. It is expected electrorefining of tin will attract more attention in the future. By the middle of 1942 the production of aluminum ingots will have expanded to 250 per cent. of the 1939 level. Advances were made in the knowledge of beryllium-aluminum and beryllium-magnesium alloys. Magnesium production was 13 million pounds in 1940 and will be doubled by the spring of 1942.

New processes were introduced for the stabilization of iodine in iodized carriers. A molten mixture of salts consisting of sodium nitrite and sodium and potassium nitrates is a heating and cooling liquid for industrial processes requiring high temperatures but where direct heating with an open flame is either dangerous or impracticable. The net cost of research in the field of synthetic organic chemicals was about 3½ per cent. of sales. Nitromethane, nitroethane, 1-nitropropane and 2-nitropropane are being manufactured commercially, and later on nitroparaffins with longer carbon chains will be available. Over 80 recently commercialized esters of polyhydric alcohols and their ethers were reported. Normal octanol and normal decanol are now available in quantity; the manufacture of adipic acid was started. The production of guanidine salts was markedly improved. Levulinic acid was made commercially. New non-volatile, water-soluble compounds, offered under the designation "Carbowax," are recommended for the paper and textile industries and as metal-working

[1] Abstract of a paper prepared for the *News Edition* of the American Chemical Society, published in the issue of January 10.