of the Lockheed Aircraft Corporation, Burbank, Calif., and "The Limiting Line in Mixed Subsonic and Supersonic Flows of Compressible Fluids," by Dr. Hsue-Shen Tsien, of the California Institute of Technology.

THE Special Libraries Association will meet as part of the second Wartime Conference at the Hotel Pennsylvania, New York, from June 22 to 24. The science-technology group of the association, representing engineering, chemical, rubber, utilities and aeronautical libraries, both institutional and belonging to various firms, will hold its annual meeting at that time.

THE Laboratory of Applied Physiology of Yale University, under the direction of Professor Howard W. Haggard, announces the establishment of a new research unit to be known as the School of Alcohol Studies. This unit will be devoted to social, statistical, educational and juridical studies relating to the problems of alcohol. Professor E. M. Jellinek is director of the school. He will conduct an annual summer session in alcohol education designed for the needs of those engaged in activities in which thorough knowledge of the facts about alcohol problems will be of particular usefulness. The first summer session will be held from July 8 to August 16. A number of fellowships are available. For particulars, address the School of Alcohol Studies, Yale University, New Haven, Conn.

DR. W. W. CHARTERS, of the War Manpower Commission, announces that short summer courses in sanitary engineering are to be given at Alabama Polytechnic Institute, George Washington University, the University of Michigan, the University of Texas, the Polytechnic Institute of Brooklyn, the University of Southern California and Oregon State College.

As reported in *The Times*, London, Sir Andrew Duncan, British Minister of Supply, stated in reply to Major Lyons (Leicester), that the object of the committee set up to report on penicillin was to insure that all available information regarding clinical and chemical trials and methods of production was collected and exchanged, and that everything possible was done to promote the most rapid development. The committee consisted of Arthur Mortimer, Deputy Director of Medical Supplies, Ministry of Supply (*chairman*); and Professor A. Fleming, St. Mary's Hospital; Professor H. W. Florey, School of Pathology, University of Oxford; Professor H. Raistrick, London School of Hygiene; Sir Robert Robinson, the Dyson Perrins Laboratory, University of Oxford; Dr. C. R. Harrington, Medical Research Council; Dr. A. N. Drury, Medical Research Council; Dr. V. D. Allison, Ministry of Health; Professor I. M. Heilbron, University of Cambridge, and Lieutenant-Colonel Sir Russell Wilkinson, military medical adviser, Ministry of Supply, together with representatives of firms engaged in production of penicillin.

DISCUSSION

THE FORMATION OF MOSS PEAT BENEATH TRANSLUCENT PEBBLES IN SEMI-ARID REGIONS OF THE GREAT PLAINS

ON a field trip with the late Dr. F. A. Hayes[1] and Mr. G. A. Avery[2] in the semi-arid Northern Great Plain, in western South Dakota in May, 1941, it was observed that a growth of moss and algae and an accumulation of moss peat, varying from a thin film to about one fourth inch in thickness occur beneath translucent quartz and chalcedony pebbles and small stones which are embedded in the surface of well-drained soils. Such an accumulation was not found beneath opaque pebbles and stones. The discovery provides further evidence that stone fragments on the surface of the soil help to conserve moisture by checking evaporation.

We made a general study of the area in the vicinity where the peat phenomenon was first observed in order to confirm my first impression that the peat occurs only beneath pebbles that freely transmit light. Samples of the moss and peat and of the pebbles under which they were found were collected for further study and for presentation to the Botany and the Conservation and Survey Divisions of the University of Nebraska. During the past year observations of the phenomenon have been extended, by the writer and others, to much of the Northern Great Plains.

The first requisite for the growth of moss and the formation of peat, as already indicated, is the presence of translucent pebbles. These must be in firm contact with, and slightly embedded in the soil and their surfaces must be exposed to sunlight. Short-grass cover or thin stands of grass in semi-arid regions apparently furnish the most favorable habitat for the growth of mosses and for the development of peat. The phenomena gradually becomes less noticeable, under natural conditions, in passing into arid regions on the one hand and into subhumid and humid regions on the other. In arid regions, because of the lack of sufficient moisture to support peat-producing plants,

[1] F. A. Hayes was senior soil scientist, Division of Soil Survey, Bureau of Plant Industry, U. S. Department of Agriculture and professor of soil science, Conservation and Survey Division, University of Nebraska.

[2] G. A. Avery is associate soil technologist, Soil Conservation Service, U. S. Department of Agriculture.

algae replaces mosses. Few observations have as yet been recorded for subhumid and humid regions; but because the more luxuriant vegetation excludes most of the sunlight from the pebbles, cryptogamous plants probably are less abundant.

Further study of the occurrence and the distribution of peat beneath pebbles and of the plants contributing to its formation is indicated. Specific names of the plants have not yet been determined.

The term "pebble peat" is suggested for the phenomenon described. As yet no mention of the phenomenon has been found in the literature.

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BIOLOGICAL SPECIFICITY OF FOLIC ACID

NIELSEN and Elvehjem[1] and Martin[2] have demonstrated the counteracting effect of folic acid concentrates on growth inhibition of rats due to succinylsulfathiazole and sulfaguanidine. These findings, indicating synthesis of folic acid by the intestinal bacteria, are in accord with the findings of Mitchell and Isbell[3] on synthesis of this substance by rat intestinal flora.

Recent investigation of folic acid concentrates in our laboratory has indicated that they can not be regarded as biologically pure, unless this fact has been demonstrated. Two significant impurities may be present, namely, xanthopterin and *p*-aminobenzoic acid. The amount of xanthopterin present may be several per cent., even in the most potent preparation yet tested on animals.[1] This preparation, which was furnished by our laboratory to Nielsen and Elvehjem (designated 15,000 times as potent as solublized liver), has since been found to contain also 1 per cent. of *p*-aminobenzoic acid.

Since Totter and Day[4] have found that xanthopterin is able to counteract the effect of succinylsulfathiazole on rats, its presence in folic acid concentrates can not safely be neglected. The amount of *p*-aminobenzoic acid present in the potent preparation referred to above is probably not enough to seriously affect the results, but the absence of significant amounts of *p*-aminobenzoic in many folic acid concentrates can not be assumed.

We wish to make clear that the biological identity of folic acid is not questioned by these findings, since in the microbiological test for folic acid using Strept. lactis R both xanthopterin and *p*-aminobenzoic acid are inactive.

HERSCHEL K. MITCHELL

1 E. Nielsen and C. A. Elvehjem, *Jour. Biol. Chem.*, 145: 713, 1942.
2 G. J. Martin, *Proc. Soc. Exp. Biol. and Med.*, 51: 353, 1942.
3 H. K. Mitchell and E. R. Isbell, Univ. of Texas Publication No. 4237, 125, 1942.
4 J. R. Totter and P. L. Day, *Jour. Biol. Chem.*, 147: 257, 1943.

THE KILGORE SENATE BILL

IN the April 23rd issue of SCIENCE, Elliott and Grundfest, the latter national secretary of the American Association of Scientific Workers, highly endorsed the Kilgore Senate Bill 702. They believe with the proponents of this bill that research, development and technology in the United States have no unity of purpose or coordination, and are in a highly disorganized state.

As a matter of fact, the very opposite is true, for never in the history of the country have science and technology been so well organized and coordinated as they are to-day. Striking results have been accomplished by the coordination of governmental agencies, universities, privately endowed institutions, and industrial research laboratories. One may state that the scientific, technological and production men of the United States are doing the greatest job ever undertaken in the history of mankind, namely, converting a great country in less than two years from peacetime pursuits to an all-out war effort. It is safe to say that over 95 per cent. of our scientific and technical manpower and facilities are now highly organized and coordinated to the single end of advancing the war effort, despite the many difficulties involved.

Coordination extends not only to efficient use of materials but to effective mobilization of the human element in research. Our scientists are not only carrying on fundamental and exploratory research at a higher tempo than ever before, but also by applied research providing the materials necessary for the successful prosecution of the war.

In the *Journal of Industrial and Engineering Chemistry* (35: 385, 1943) there is a statement on "Scientific Regimentation" as implied by the Kilgore bill, by Walter J. Murphy.

"The very wording of the 'Declaration of Policy' constitutes a direct insult to the scientific minds of this country and is contrary to the actual facts, as any unbiased study will clearly show.

"We do not have 'an unassembled and uncoordinated state of information concerning existing scientific and technical resources'; we do know that there is no lack of 'an adequate appraisal'; the war effort is not suffering because of 'unplanned and improvident training, development, and use of scientific and technical personnel, resources, and facilities in relation to the national need,' with the exception of the policy of drafting badly needed technically trained manpower into the armed forces."

From time to time our attention is directed toward the super-coordination of science, technology and in-