lem in general and ultimately to human well-being. To speak of the well-being of Man at this time seems to be macabre humor. Why is it that skillful men from different nations can solve problems in fundamental biology but can not do so when the matter directly concerns themselves? The question remains unanswered.

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REPORTS

A DEPARTMENT OF GEOGRAPHY[1]

AT least a hundred college heads have inquired as to our plans for geography in the post-war years and have invited help in the selection of personnel. This is true no less of women's colleges than of men's colleges. It shows deep and, we hope, permanent interest in research as well as thorough-going instruction in geography. This has been one of the most neglected fields in higher education. War and its related problems of peace-time organization for equity and freedom have at last taught the American people that modern geography is not children's geography to be finished in the seventh grade. That "imaginative grasp of space" which science shares with poetry seemed somehow to have been impossible to attain until our Army, Navy and Air forces had taken their stations and begun their operations in almost every part of the world. For a full generation we seemed unable in our thinking to synchronize time and space in a spreading network of technologies, trade and international relations. "The Map and the Clock" is the significant title of a brilliant editorial published recently in the London *Times Literary Supplement*. We shall be dealing with what we once regarded as the "outer world" for a long time to come, with such speed and responsibility, and with such a practical need for wide comprehension, that we can not escape corresponding educational demands if we would.

Geographical science has a significant part to play in national policy. The conviction seems to grow that we can not safely limit our future responsibilities to narrow zones of power. No line can be established anywhere in the world that confines the interest of the United States because no line can prevent the remote from becoming the near danger. Nor can danger be wished or talked away. Positive intentions and acts based upon deep understanding of both good and evil forces are required. The Western Hemisphere conferences of the past ten years are but one of several major forms of political association. This geographical term no longer implies political separation from the rest of the world and a sheltered retreat. Interwoven with the fate of the United States are the fates of countries on the farther side of the world organized on political and social hypotheses and conditions quite different from those that prevail among ourselves.

For nearly one hundred and fifty years the philosophy of geography has included the thesis of Humboldt, that the diversified riches of the earth are a vast source of human enjoyment, and that man's highest development requires that we put the world's resources into a common world stream of understanding and use. We have become so accustomed to international trade that we are often insensible of the extent to which our comfort, our welfare and our safety depend upon the interchanges of products and ideas about them and the multiform agreements that implement their exchange.

More important still is the process of cultural interchange. If it were as free and full to-day as our exchange of products, the world, while retaining its picturesque and stimulating cultural differences, might have an agreed code of relationship and behavior with corresponding reduction of the risk of war. It will take further experience, long-continued persuasion and a determined will to bring such a code into being. Certainly ignorance and flippancy will not build a highway to this goal. We must gain experience and will power on a higher level of cultural interrelations than any we have yet known. This means knowing other peoples intimately, and gaining the ability to see their interests clearly as well as our own. Only in their natural settings can we fully understand the languages, literatures, codes, ideas, interests and moralities of peoples unlike ourselves. To give but one example, no policy of interrelated migration of people and of settlement of underdeveloped lands, no rational easement of so-called "population pressure," can be sound unless and until geographical and cultural studies are joined in the attainment of agreed purposes. Such great endeavors also require the union of the philosophical and the utilitarian, the theoretical and the practical. The result is of such profound consequence to a stable world order that it would be madness to exclude university participation. Only during the past two decades have some of our universities become aware of their long neglect of fields of inquiry and action that affect the peace or the ruin of the diverse peoples that share the planet. Once an honored part of the classical curriculum—Ptolemy, Strabo and Varenius having been almost as well and as generally known by educated men of an earlier generation as Virgil and Homer—geographical instruction declined in the nineteenth century and even at the time of World War I was limited to a relatively small number of universities.

For several years we have been giving instruction in geography at Hopkins on a modest scale. The Army Specialized Training Program has required the

[1] From the annual report of Dr. Isaiah Bowman, president of the Johns Hopkins University.

sudden expansion of instruction in this field at a time when it is extremely difficult to increase staff because of the prior demands of the armed services. It is gratifying to report that the faculty enthusiastically favors the development of a permanent department in the interest of both undergraduates and graduates. Willing cooperation in this enterprise is evidence of a healthy attitude toward post-war conditions which inevitably will have more of the planetary in them even if no less of the local and national.

To have depth and university quality such a department must have a staff of exceptionally well-trained scholars. To secure breadth there should be active association, in this new training program, among scholars in a number of related or parallel fields.

Four young men of excellent training form the core of the department. They are Dr. Karl J. Pelzer, who has already published extensively on settlement and labor conditions in the Far East; Dr. George Carter, whose work in both geography and anthropology provides a useful link between these two fields, and who will provide specific instruction in the latter field in this university for the first time; Dr. Andrew Clark, who has had two years' field experience in the Pacific area; and Dr. Jean Gottmann, formerly of the Institut de Géographie, University of Paris, who began his association with Hopkins in April, 1943, thanks to leave from the Institute for Advanced Study, and who will join our faculty on a full-time basis on July 1, 1944.

To assist the members of the Department of Geography and to provide the requisite breadth, the cooperation of a number of scholars in allied fields has been obtained. The archeological and cultural aspects of Mediterranean geography will be developed by Dr. W. F. Albright, whose distinguished work in Near Eastern archeology and history is well known. The historical and regional geography of the Basin will be developed by Dr. Gottmann. A course on the geography of disease will be worked out cooperatively with the School of Hygiene and Public Health. The Far Eastern field will continue to have the guidance of Mr. Owen Lattimore, director of the Page School of International Relations, and more recently political adviser to the Chinese Generalissimo. The wide experience of Dr. Abel Wolman, professor of sanitary engineering, will be available for advanced work in the vital field of conservation. Associated with the department is Mr. Lloyd Brown, librarian of the Peabody Institute, who will give instruction in historical geography, a field in which he has already made notable contributions. We will also continue to have the cooperation of Dr. Ernst Cloos and other members of the Department of Geology in the training of students in physiography and meteorology. I am pleased to note also the interest and friendliness of the History Department, the English Department and others.

These interconnections are not imposed upon any department. They register the general belief that the university should enrich its program of academic instruction, not only by the addition of a formal department of geography, but also by a certain grouping of established interests and training skills in different fields of research. We shall thus have better trained men in existing departments while providing a larger number of competently trained young geographers to help staff the many new departments of geography now in the making throughout the United States.

Finally, we have a great work of conservation and development before us as a nation. We can not expect high cultural attainments on a mean or low material basis. The world is rich but its wealth is finite not infinite. The most advanced countries have been most wasteful of their patrimony. Only a few have but recently adopted more sensible conservation policies, and they have still far to go. In the colonial field we have terrible examples before us of downright failure in applying our more intensive cultural methods to native enterprise and unfamiliar tropical environments under the stimulus of commercial agriculture. It would be folly to expect every people, and especially the small and poor, to discover and adopt sound conservation practices. The leading nations have great technical staffs and vast opportunities of experimentation through mass education that smaller nations do not possess. But colonial administrators and policy-makers, to secure adequate staffs for the enlarged tasks of the future, will need far more penetrating and advanced geographical instruction than anything we have known up to this time.

A large expansion of research and of technological training is implied by such a program. A considerable amount of it will invite the participation of women as well as men. Cartography alone has been stimulated enormously by the war, and it will continue to be a major concern of enterprising government departments after the war. Through it, and its many applications, national inventories of resources may be properly taken, land registers completed, and statistical results given that environmental framework that good public administration requires. Meteorological and climatological research as well as the environmental study of disease, greatly intensified, would benefit hundreds of millions of people in areas that hitherto have had altogether inadequate services. We now see that the welfare of others is our welfare also, for without mutual advantage there is, in the long run, no advantage at all for any one.

Geographical inquiry is deeply concerned with the

interplay of cultural and environmental forces. Environments are not properly appraised in terms of arithmetic only, such as statistics about soils of ascertained natural fertility, combined with statistics showing seasonal variations of rainfall and temperature. The natural aptitudes of peoples count greatly. Necessity and will also drive men to change their ways and to do the unexpected and even the uneconomic. Migrations still play their vital role. In one country of the Western Hemisphere a foreign element of 260,000 Asiatics, among a group of 6,000,000, now control certain economic activities so largely that their ejection would threaten economic ruin. The causes of such instances require identification. Post-war economic necessities will drive every country to inventory its resources and develop them more intensively, tighten economic administration, and see geographical relations more clearly than ever before. These are the indispensable preliminaries of sound national policies.

SPECIAL ARTICLES

SEROLOGICAL REACTIONS WITH AN INDIFFERENT STREPTOCOCCUS IN PRIMARY ATYPICAL PNEUMONIA[1,2,3]

AN indifferent streptococcus (No. 344) was isolated recently from the lung of a fatal case of primary atypical pneumonia. Convalescent sera from patients with this disease were found frequently to possess the capacity to agglutinate this bacterium, while, in most instances, agglutination did not occur with acute-phase sera from the same patients, with the sera of normal individuals or with the convalescent sera of patients with certain other acute infectious diseases. Moreover, convalescent sera from some patients with primary atypical pneumonia yielded precipitates when mixed with soluble substances extracted from this micro-organism, while control sera did not.

Streptococcus 344 was isolated by the inoculation of a suspension of tissue from a human lung into the yolk sacs of chick embryos. It was readily cultivated on blood agar or in beef infusion broth, and grew well under aerobic or anaerobic conditions. On blood agar, small, gray, coniform colonies with slightly serrated surfaces were produced. No hemolysis occurred during 48 hours' incubation on blood agar prepared from rabbit, sheep or human blood. Suspensions of this organism were not soluble in bile. Fermentation reactions, in preliminary tests, did not serve to differentiate this bacterium from other indifferent streptococci.

Bacterial suspensions for agglutination tests were prepared from 24-hour cultures in broth. The bacteria were sedimented, washed three times with saline solution, killed by heating at 56° C. for 30 minutes, and resuspended in saline solution so that the turbidity approximated No. 5 in the McFarland series. Twofold dilutions of unheated serum in saline solution were mixed with equal volumes of the suspension. The final dilutions of serum ranged from 1:10 to 1:160. Tests were not carried out with serum dilutions of less than 1:10, since it was found that the bacterial suspension often agglutinated in 1:2 and occasionally in 1:4 dilutions of normal serum. Following 2 hours at 37° C. and 18 hours at 4° C. the tubes were shaken and readings were made.

Agglutination tests were performed with sera from 101 patients with primary atypical pneumonia. Sera were obtained during the acute phase of the disease and at varying periods in convalescence. Similar tests were made with acute and convalescent sera from patients with acute respiratory infections without pneumonia, psittacosis, pneumococcus pneumonia, influenza A, scarlet fever and other severe streptococcus infections. The sera of 50 normal individuals were also tested.

The results of these tests are shown in Table 1. The convalescent sera of 55 patients with primary atypical pneumonia agglutinated streptococcus 344 at dilutions ranging from 1:10 to 1:160. On the other hand, the acute-phase sera from the same patients did not cause agglutination of this bacterium except in 3 instances, in which positive reactions occurred at 1:10 dilutions. The sera from patients with pneumococcus pneumonia were negative in this test, as were also the sera from patients with psittacosis, scarlet fever and influenza A. The convalescent sera of 2 patients with acute respiratory infections without pneumonia showed titers of 1:10. One patient with Group F minute beta hemolytic streptococcus empyema developed a serum titer of 1:40 and the serum of another patient with subacute bacterial endocarditis caused agglutination at a dilution of 1:80. All the sera from 50 normal individuals failed to produce agglutination under the conditions of this test.

In the majority of instances, positive agglutination

[1] From the U. S. Navy Research Unit at the Hospital of The Rockefeller Institute for Medical Research, New York, N. Y.

[2] The Bureau of Medicine and Surgery of the U. S. Navy does not necessarily undertake to endorse views and opinions which are expressed in this paper.

[3] The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and The Rockefeller Institute for Medical Research.