THE London correspondent of the *Journal* of the American Medical Association reports that the British Minister of Health has appointed an expert committee to review the present and future requirements of vegetable drugs in the light of empire consumption and trade and facilities for cultivation within the empire; to consider the steps which should be taken to secure organization of cultivation and collection, and to make recommendations. This committee has now presented an interim report which differentiates two groups of drugs—a long-term and a short-term group. It is held to be unlikely that any long-term policy will materially affect the supply of drugs during the present emergency, as the period preceding production would be too long. The committee considers that in the United Kingdom attention should be concentrated on the production of agar, dill, belladonna, Irish moss, colchicum, digitalis, ergot, male fern, liquorice root, hyoscyamus, peppermint, psyllium, sphagnum moss, stramonium, dandelion root and valerian. Arrangements have been made by the Ministry of Health to extend the areas of cultivation of certain extremely important drugs. The Royal Botanic Gardens have arranged with the National Federation of Women's Institutes to organize the collection of ten important herbs in each county, making a total of thirty herbs throughout the country.

IN the administration and instruction building of the Montreal Botanical Gardens there was opened on August 28 a new laboratory to be known as the John Dearness Laboratory for Plant Pathology. Dr. Dearness attended and delivered the opening address. He was presented by Dr. Marie-Victorin, head of the department of botany of the University of Montreal. This laboratory has been established under the auspices of the Faculty of Sciences and the Botanical Institute connected with the university. The event was included in the program of the closing afternoon of the summer meeting of the Mycological Society of America which this year was held in the Montreal district with headquarters in Macdonald College. Dr. Walter Snell, of Brown University, vice-president of the society, participated in the proceedings.

WE learn from *Nature* that in regard to the coordination of the universities and research institutions in India with the development and extension of industrial research, attempts are being made to obtain the cooperation of the universities in preparing the combined list of industrial researches completed, in progress and proposed to be undertaken in government laboratories, universities and research institutions in India. Publication of an annual combined list is contemplated. The report on the work of the Industrial Research Bureau also refers to the coordination of universities and research institutions. The number of laboratories in India capable of undertaking industrial research work is limited, and after considerable attention had been given to the matter it has been decided to provide funds to be allocated to selected institutions for the payment of grants to workers engaged in research falling within the programs to be arranged on the recommendations of the Board of Scientific and Industrial Research.

A WIRELESS to *The New York Times* states that a decree of discrimination against Jewish physicians and surgeons has been announced at Vichy. The proportion of Jews to non-Jews must not exceed two per cent., as is already fixed for the legal profession. Exemptions are provided for Jews who have rendered signal service to France. Before the exodus of Jews from Central and Southeastern Europe in the years immediately preceding the war, it was computed that Jews in France represented 2.4 per cent. of the total population. The law relates to Jews of French nationality. Alien Jewish physicians were barred from practicing several months ago. Thus laws affecting Jews are being made operative in the unoccupied zone of France. In the occupied zone, the Nuremberg "ghetto laws" are applied.

DISCUSSION

AN INTRODUCTORY COURSE IN BASIC PHYSICS

IN connection with Professor S. R. Williams's article in your issue of April 25th, entitled "Physicists Needed for National Defense Work," Professor Williams has suggested that I should call attention to the introductory course in basic physics which has been given for several years at Stevens Institute of Technology. This course was organized to present basic physics in a rigorous quantitative way. Calculus is used as soon as it is needed, which is almost from the start, and is currently taught in the mathematics department. Engineering naturally provides the best quantitative examples of basic physical laws.

On the theory that a man's intelligence practically reaches its ultimate growth by the age of eighteen, we are presenting to freshmen some topics previously taught to juniors and seniors—for example, the speed fluctuation of an engine and transients in electric circuits.

The course in the two freshman semesters includes mechanics and electricity. Since it has previously been described in some detail,[1] I shall merely com-

[1] Alan Hazeltine, *Journal of Engineering Education*, 30: 699, April, 1940.

ment on some salient features and on the results obtained.

All basic physical concepts and laws are derived from certain general observations, which are the axioms of physics. To express these observations, certain fundamental quantities (the mathematicians' undefined elements) are constructed, namely, distance, time, energy and electric quantity. And to formulate the consequences of these observations, many derived quantities are introduced, such as velocity, force, voltage, magnetic flux. In their quantitative aspect, these derived quantities usually enter as proportionality factors in special cases, and receive their general definitions as derivatives: velocity as the time derivative of distance, force as the distance derivative of energy, voltage as the derivative of energy with respect to electric quantity. A few derived quantities appear as integrals: momentum as the time integral of force and magnetic flux as the time integral of induced voltage. The student is taught to think first of a derivative as the slope of a graph and of an integral as the area under a graph; only in special cases are they directions to perform analytical operations.

The unconventional arrangement of giving electricity immediately after mechanics in the same course was chosen on account of the very close analogies: electrostatics is electrical elasticity and electromagnetism is electrical kinetics. This analogy is emphasized to increase the comprehension of both subjects.

The mechanics, especially elasticity and kinetics, forms the basis of the sophomore work in mechanical waves and sound; and the electricity forms the basis of the sophomore work in electrical fields and electric waves. Light then is introduced as an electric wave; and the laws of reflection and refraction are derived from those of dielectric and magnetic fluxes. (The sophomore work also includes heat, based on the Carnot cycle, and kinetic theory, electronics and an introduction to some of the more recent physical concepts.)

Our present physics course is more difficult for the student, is longer and results in lower average grades, than the course of a few years ago. Nevertheless, the response of the students is gratifying. Physics here is not an unpopular subject. There seems to be a trend in some places toward more superficial physics teaching, with the hope of making the physics course easier and hence more popular. As Professor Williams indicated, this is in the wrong direction: physics should be made more popular by being made more worth while. The late President Humphreys of Stevens often used to say: "Superficiality is the curse of American education."

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COLLECTION AND FILING OF ABSORPTION SPECTRA DATA

THE literature of absorption spectra is so widely scattered that frequently when a long search reveals that measurements have been made for a compound, the data are inconvenient to obtain. Too often no data at all can be located for compounds which have been known for a long time and which most certainly have been studied. The preparation of a new and complete but traditional atlas would offer no solution because it would be expensive to produce and, hence, limited in distribution, and because it would be rendered obsolete quickly by the publication of new data.

It is the purpose of this communication to suggest that a master card file of existing data be established at some central depository. Here the data and references for each substance or group of substances would be assembled in standard form, each upon a separate card. Once established such an index would be perpetually up to date if authors could be induced to supply their new data automatically and promptly. Photoprints or microfilm of the available data for any compound could then be furnished quickly at a small fee, and at moderate expense, institutions would be able to obtain more or less complete duplicate files. In this way it would be possible to avoid the expense of duplicating uninteresting and unnecessary information, thereby reducing the cost of the data actually wanted.

Compilation of the Absorption Spectra Card Atlas proposed above would facilitate and stimulate research and should deserve the support of some fund for scientific advancement. Once prepared the fees for supplying information should support the atlas.

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THE OCCURRENCE OF FRESHWATER SPONGES IN THE HAWAIIAN ISLANDS

THE occurrence and distribution of freshwater sponges in Polynesia is still little known, due, perhaps, either to the lack of interest in or recognition of these interesting animals on the part of most collectors who are out for "bigger game."

Up to the present time the Fijian Islands seem to be the easternmost locality from which freshwater sponges have been recorded in Polynesia; for *Spongilla gilsoni* Topsent[1] has been collected and described from these islands.

Mumford[2] and Adamson,[3] in very interesting articles dealing with the distribution of the terrestrial

[1] Emile Topsent, 5: 187–191, 1912.
[2] E. P. Mumford, *Ecology*, 17: 1, 143–157, 1936.
[3] A. M. Adamson, *B. P. Bishop Museum Bulletin* No. 159, pp. 1–93.