

to the hospital. Students are encouraged to believe that they can get adequate clinical training only in large cities and that the most valuable internships are in the larger hospitals in these cities. Clinical teaching thus becomes to a large extent mass instruction. Intimate relations between individual students and individual teachers become difficult even during the interne year.

The old apprenticeship system in medical education had some marked advantages which present system of mass instruction lacks. Is it not possible to restore some of the advantages of the old apprenticeship system without loss of modern scientific training? Can we not utilize a large number of clinical centers for clinical teaching and a large number of progressive men as teachers instead of restricting clinical teaching to a few men connected with large hospitals adjacent to medical schools in large cities?

I believe this can be brought about by encouraging a greater number of practising physicians to qualify for the term doctor in its original sense of teacher. Why should not our medical students after two years of premedical college work and two or three years in the medical school be qualified to reside in hospitals, for the most part small hospitals, where they could earn board and room by helpful work about the place and at the same time study under the immediate supervision of members of the hospital staff. Such hospitals should provide diagnostic centers along the lines outlined above. If a few students thus acted as clinical clerks in a series of hospitals during the course of two or three years following the present second or third year in the medical school they could get a broad experience in direct contact with medicine as it is best practised at the present time. Variations in the types of hospitals would

secure training in the varied lines of medicine. Each student would come in intimate contact with a considerable number of active progressive men whom he would stimulate and some of whom would in turn inspire. Only hospitals of a certain grade would be recognized for this service and this in turn would serve to stimulate hospital development. The immediate clinical facilities of the medical school could be utilized for supplementing and strengthening the extra-mural hospital service and the clinical staff would have supervision of the clinical teaching in the hospitals and give the final examinations. The expenses of the medical course would be reduced and the public would profit from a more direct training of its practitioners. Furthermore, this system would help to overcome one of the greatest dangers of our present system of education, the destruction of originality through too many years of subordination of personality to mass domination by teachers. It would tend to produce independence in the students.

Such a plan may not, of course, be best for all schools but it may for some. As an association let us maintain the scientific ideal in medicine but let us not carry standardization too far. Let us encourage different methods of reaching the results at which we all should aim, the establishment in our students of habits of independent accurate observation, of judgment based on knowledge of fundamentals and of skilled execution based on practical experience, and then let us study the results as scientifically as possible and base our changes in methods so far as we can on observed facts.

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THE FOREST SERVICE

THE annual report of the forester of the Department of Agriculture made public on

December 21 comments on the government ownership of water-power sites and timber as exemplified by the national forest system. The financial burdens resting on private owners of uncut timber are held to have forced the manufacture of lumber without regard to market demands, and with consequent demoralization of the lumber industry and wasteful use of timber resources; while facts and figures regarding the water power situation are given to prove that more rapid development of water power in the west is mainly prevented by the lack of consumers, rather than by the absence of suitable legislation.

Water power permits taken out for National Forest projects, says the report, involve a total of 1,261,560 horsepower. Free permits cover 70,628 horsepower and the plants actually constructed or operating June 30 had an output capacity of 341,276 horsepower, the rentals paying \$89,000 during the year. The report comments on the water power situation as follows:

New legislation permitting the government to grant a more secure tenure for the lands used, through the issuance of fifty-year leases, would, without doubt, make the financing of power developments on the public lands both easier and cheaper, and is very desirable; but the main obstacle to more rapid development than that which is now taking place is not lack of a new law but lack of a broader market for power. It is at least doubtful if either an amended law or private ownership of the public power sites would result in any general or material increase in power development in the western states in the immediate future. With rare and minor exceptions, existing power developments in these states are far in excess of market demands. The Forest Service is being constantly importuned to extend periods of construction on power permits on the plea that there would be no market available for the power if the project were developed. The per capita use of water power in electrical development in the three Pacific and the eight Mountain states is far in excess of that in any other section of the United States, and more than five times the average for the United States, as a whole. The development of the Pacific States is about 180 horsepower, per thousand of population, and in the Mountain states 120 horsepower, with a balanced average of 160 horsepower. New England, which

is next in order, has less than 40 horsepower per thousand of population, and the whole United States about 30 horsepower.

The report goes on to say:

The drop of thirty per cent. in the demands for national forest stumpage, as indicated by the falling off in new sales, is a significant index of the unstable market for lumber and the serious conditions now obtaining in the forest-using industries.

These conditions which are now the subject of a special study conducted by the Department of Agriculture in cooperation with the Federal Trade Commission and the Bureau of Foreign and Domestic Commerce

are related primarily to the carrying of enormous quantities of raw material, exploitable only during a long period of time, in private ownership. This load of uncut timber, with its far-reaching financial burdens, hampers or prevents the private operator from adapting his business to the changed conditions of his market and to the competitive factors of more or less recent development. Hence a tendency toward a lumber output governed not by the requirements of the country, but by the financial necessities of the owners of stumpage, with its resultant market demoralization and wasteful use of timber resources. Had the national forests never been created, the conditions of trade depression and wasteful exploitation, detrimental alike to the interests of the lumber industry and the public, would have been markedly accentuated. The value of public ownership of a considerable part of the timber resources of the nation has never been demonstrated more strikingly than by the results of private ownership now manifest.

Although large commercial sales fell off, due to the depressed condition of the lumber market, says the report, the number of sales to settlers, farmers and small dealers at cost rates nearly doubled in number, while more than 40,000 free timber permits were issued, an increase of 549. The steady increase of this use, the forester adds, indicates the importance of the national forests to the communities in which they lie and the stability of the local demand for their products.

The report discusses in detail the work of the Forest Service during the fiscal year ended June 30 last, showing a general increase

in all forest activities except commercial timber sales. It predicts, however, a large revenue from all sources for the fiscal year 1916, the general improvement in business conditions throughout the country having been already felt in the national forests, as shown by an increase during the first three months of about \$119,000 over the earnings of the same period last year. During the fiscal year, the total revenues were \$2,481,469.35, an increase of \$43,759.14 over 1914. Of the \$5,662,094.13 provided by the regular appropriation for the Forest Service, says the report, \$5,281,000 was expended for protection, utilization and improvements, the cost of protection being increased by an extraordinarily severe fire season which necessitated emergency expenditures that were partly provided for by a deficiency appropriation of \$349,243. An additional sum of about \$196,000 was spent under the law which permits 10 per cent. of the forest receipts to be employed in road development for the public benefit.

The expenditures include, says the report, the protection of resources which as yet can not be made to bring in cash returns, such as inaccessible timber, as well as those, such as watershed covering and recreational advantages, which yield great general benefits not, however, measurable in money values. In this connection, the report mentions that timber given free to settlers and others was worth more than \$206,000, while that sold under the law at cost was worth \$33,000 more than the government got for it. The revenue also foregone by allowing free use of certain grazing lands, adds the report, is estimated to exceed \$120,000, while a moderate charge for privileges that are free would bring in at least \$100,000 more. All this, says the forester, has never been entered on the credit side of the Forest Service ledger.

SOIL SCIENCE

Soil Science is the title of a new monthly journal which is published under the auspices of Rutgers College. The journal, which is international in its scope, is devoted exclusively to problems in soils, including soil

physics, soil chemistry and soil biology. Dr. Jacob G. Lipman, of the New Jersey Agricultural Experiment Station, is editor-in-chief, and has associated with him a consulting international board of soil investigators. This group consists of twelve of the leading authorities on soils in the United States and eleven from foreign countries.

It is believed that the journal will fill a distinct need in the field of modern science. Soil investigators have long felt the necessity for a specific medium for the publication of their research work. Heretofore, they have found it necessary to resort to journals not specifically devoted to soil problems. Consequently, they have been put to much inconvenience in keeping before them all the more important papers in soil research. Moreover, they have found it increasingly difficult to secure the prompt publication of their own papers in journals whose contributions cover a wide range of scientific activity. In planning for the publication of *Soil Science*, the editor was guided by the wish to facilitate the bringing to light of the results of soil research. He felt encouraged to believe that the new journal would help to conserve the time and the energies of his fellow students of soils, that it would provide for a more direct contact among men interested in the same problems, and that it would lead to a broader outlook on the entire field of soil fertility.

THE ECOLOGICAL SOCIETY OF AMERICA

A MEETING of ecologists was held at Columbus in convocation week to take action upon the proposal made at the Philadelphia meeting for the formation of a society of ecologists. Over fifty persons were present and the organization committee held letters from about fifty others who expressed interest in the project. In view of these facts it was unanimously voted to organize under the name The Ecological Society of America. It was decided to enroll as charter members not only those present at the organization, but also those who had by letter expressed a desire to be included in the membership, as well as those joining prior