

# THE BATTLE FOR THE WEEKS BILL

ANOTHER milestone was passed in the long march toward a truly national forest policy on Wednesday, February 23, when a hearing was given before the House Committee on Agriculture on the bill for the creation of national forests, known as the Weeks Bill, and popularly as the Appalachian Forest Bill. No attempt was made, as in former years, to secure a large attendance at this hearing, or to make a popular demonstration. For three years this had been done, and the convictions of the people and the organizations of the country are well established, and equally well known. This hearing was devoted principally to the examination of three expert witnesses, and it is no reflection upon earlier hearings to say that the case has never had a stronger presentation. The sessions opened in the morning and were continued in the afternoon, and there was a good attendance of the committee at both sessions. Since the opinion of the Judiciary Committee of the House of Representatives two years ago has made it necessary to consider this question with reference to its bearing upon the navigability of streams, the testimony was concentrated mainly upon that point, and peculiar interest was given to the discussion coming from distinguished scientists who have thoroughly studied the question with which they were dealing, in view of the fact that these men unanimously controverted the conclusions of the re-

port recently made and widely circulated by Willis L. Moore, chief of the Weather Bureau. The three experts who appeared were George F. Swain, professor of civil engineering, Harvard University; L. C. Glenn, professor of geology, Vanderbilt University, and Prof. Filibert Roth, the head of the Forest School of the University of Michigan. Thus, with an engineer, a geologist, and a forester, all of whom stand in the first rank of their professions, the case had a broad and able consideration. Mr. Moore's contention that "forests should be preserved for themselves alone, or not at all," and again that "the run-off of our rivers is not materially affected by any other factor than the precipitation," was declared by the three gentlemen named to be not substantiated, and some of his conclusions were said to be ridiculous.

Charles F. Scott, of Kansas, chairman of the committee, presided, and the case was opened for those who appeared in behalf of the bill by Frank D. Currier, representative from New Hampshire. Mr. Currier introduced Andrew J. Peters, representative from the eleventh Massachusetts district, one of the Boston districts. Mr. Peters voiced the intense public interest of New England in this matter, naming a long list of business and other organizations which have endorsed and are urging the passage of the bill. He declared that New England has paid her



Hon. John W. Weeks, Representative from the Twelfth Massachusetts District

share cheerfully for the forest reserves of the West, affecting watersheds which produce only three per cent of the developed water-power of the United States, while those of New England affect thirty-seven per cent. He urged the commercial importance of the White Mountain forests, and closed with an urgent appeal in behalf of the people of New England for this generally demanded legislation.

Mr. Currier said that New England was deeply interested in all conservation matters, and her people were willing to pay their share, but feel that they are not being treated fairly when

their needs are overlooked and all of the money is spent in the West.

The first of the experts to speak was Professor Swain, who represented the Boston Chamber of Commerce, the Massachusetts Forestry Association, the Society for the Protection of New Hampshire Forests, the Appalachian Mountain Club, and other organizations. Professor Swain is one of the best-known engineers in the country, of recognized authority and wide experience. He has given much study for years to the effect of forests upon stream-flow, the question to which he turned his special attention. Referring



After Logging. White Mountains, New Hampshire

to the much-discussed papers of Professor Chittenden and Mr. Moore, he said that they did not affect this case. We do not favor forests on lands better suited for cultivation, but on land that is not suited for cultivation. The first part of Mr. Moore's report dealing with the effect of forests upon rainfall is comparatively unimportant because little stress is laid upon this aspect of the question by advocates of forest maintenance. Discussing the effect of forests upon floods and erosion, Professor Swain cited eminent German authorities. He made it plain that this is a matter that is dependent upon variable conditions. Floods are due to rainfall

and snowfall which are not determinable even by long series of observations. We are thus thrown back upon common observation and fundamental principles. The regulative effect of the forest reservoir is upon average flood conditions rather than on extremes. That a great flood may sometimes occur in a forested country is no more a reason for disregarding forest protection than is the occasional occurrence of a great conflagration in our cities a reason for discarding the usual means of protection against fire.

The speaker cited the French authorities Belgrand and Vallés in support of forestation for the prevention of ero-



Hon. Frank D. Currier, Representative from the Second New Hampshire District

sion. In making this citation, he showed that these authorities had been misused by Mr. Moore, who cited them in his report. He also compared Mr. Moore's citation of Lauda with the actual statement of the latter in his paper at the Milan conference on inland navigation. He introduced in evidence the opinion of the eminent French scientist, Professor Vélain, of the Sorbonne, to the effect that the Seine flood was in part due to the denudation of the watersheds of the Seine and its tributaries. In regard to Mr. Moore's seventh conclusion, that the run-off of rivers is not materially affected by any other factor than precipitation, Pro-

fessor Swain said that this is evidently ridiculous, since every one knows that the slope of ground, character of soil and of rock, and the elevation affect the flow from the surface. With reference to Mr. Moore's conclusion that floods or droughts are not affected by the forests, he called attention to the fact that, inasmuch as forest cover retards the flow of water from the surface of the ground in summer time and also retards the melting of snows in the winter time, it must be clear that in general the forests regulate, and maintain the even flow of streams, although they may not affect the greatest floods and droughts, which occur only at consid-



After a Fire in the Slash. White Mountains, New Hampshire

erable intervals. He called attention to the fact that Mr. Moore arrives at no conclusion with reference to erosion, which is one of the most important elements affecting the navigability of streams. He also pointed out clearly that the extreme high and low-water stages were important in this connection.

In conclusion, he urged that while it is argued that no serious results have as yet followed deforestation in this country, the people believe in prevention, and they hold the idea—and in the main it is correct—that forests do affect the storage and run-off of the

streams. Furthermore, while this measure calling for national acquisition of forest land must rest, so far as present decisions are concerned, upon the effect of the forests upon navigation, there are other important considerations such as the water-powers, the commercial value of the forests themselves, their influence upon health, and their beauty, which, while they are aside from the legal powers of Congress, add to the value of such action as is proposed, and should increase the willingness of Congress to take such action when it is clearly shown that these forests upon the steep slopes have an ef-



An Erosion Gully After Logging. White Mountains, New Hampshire

fect upon navigation which gives constitutional warrant for the enactment of this measure.

Some questioning followed on the part of members of the committee, and Mr. Currier brought out the fact that a bar has been forming for several years near the mouth of the Connecticut in Long Island Sound which has been found to be composed largely of granitic sand, which could only have come from the White Mountain country.

Professor Glenn, of Vanderbilt University, who has appeared in these hearings in previous years, is always an in-

teresting witness because of his accurate scientific knowledge and because of his intimate personal acquaintance with conditions in the Southern Appalachians. For four years as a geologist in the employ of the North Carolina Geological Survey, the United States Forest Service, and the United States Geological Survey, he traveled on horseback and on foot through the whole Southern Appalachian country, living with the people and becoming acquainted at first hand with all the conditions. He showed that deforestation, Mr. Moore to the contrary notwithstanding, does increase both the fre-

quency and the height of floods by eroding the steep slopes and thereby conveying the water more rapidly to the streams and at the same time filling them with sand and making them less capable to carry it away. He showed that deforestation decreases the low-water flow, making it lower than under forested conditions, and gave numerous concrete examples of this effect. He further showed that the eroded waste filled the stream channels and worked its way down stream, filling the reservoirs of power plants and destroying their value, and ultimately filled the navigable streams, ruining much of the improvement work of the army engineers. Dredging, for instance, has to be repeated time and again, while gravel deposits are steadily filling the rivers and harbors. The better policy would be to prevent waste from entering the streams by keeping the steep mountain slopes forested. Professor Glenn showed how streams so protected scour themselves and are rarely subject to filling, while streams whose watersheds are denuded gradually have their channels silted up and are able to carry less water, and are therefore much more subject to floods and low water. He also showed that much valuable land has been ruined in the South by floods carrying gravel and sand over the rich bottom-lands and reducing to waste thousands of acres that were formerly among the most valuable agricultural lands of the southern country. Conditions are rapidly becoming worse and the people support eagerly the proposed legislation, and are demanding it as the most vital thing for them now before Congress. Professor Glenn, personally, does not think highly of the proposition to regulate Southern Appalachian streams by storage reservoirs, regarding reforestation as preferable in many ways.

Chairman Scott had interpolated several questions during Professor Glenn's statement, these questions relating especially to the farm lands on the lower slopes of the mountains, which Mr. Scott holds are the chief sources of ero-

sion. Professor Glenn said that many of these farm lands should never have been so used, not being suited for cultivation. He had found fields cleared and cultivated on slopes of thirty-seven degrees, measured by clinometer. Such slopes are altogether too steep for cultivation. The problem in the Southern Appalachians is both an agricultural and a forestry problem, which can only be solved by reforesting the steep slopes and saving the gentler ones by terracing, ditching, and better cultivation. But the proportion of suitable agricultural land is not over twenty per cent of the area of the mountain country, as against at least eighty per cent which is profitably available for forest growth only. The statement of Mr. Moore that more of these slopes should be cleared would be followed by disaster if carried out under present methods of cultivation. He showed that while the source of flood damage is on the upper slopes, the actual damage is done when the water strikes the gentler slopes where the run-off is not so rapid. The headwaters, so far as flood water and erosion are concerned, are the locus of the chief destruction. Deforestation does increase the height and frequency of floods; there can be no doubt about this.

Professor Glenn was the last speaker at the morning session, and the committee reconvened at three o'clock in the afternoon, when Professor Roth, of the University of Michigan, was the first witness. Professor Roth stands in the first rank of American foresters in point of wide experience and professional knowledge. He showed several photographs, reproductions of which appear in connection with this report, illustrating the effect of deforestation in the Southern Appalachian and White Mountains. Mr. Scott took exception to one of these photographs on the ground that it showed conditions in the low rolling country rather than in the mountains. Professor Roth argued that photographs were not reliable so far as slope was concerned, and that the conditions illustrated there



Abandoned Pasture on Tributaries of Cane Creek. Several Small and Several Very Deep Gullies Are on This Land  
Mitchell County, North Carolina

were such as would exist on the steep slope. Representative Weeks of Massachusetts, who had taken charge of the hearing during the morning when Mr. Currier had to attend a hearing of his own committee, suggested that so far as the nature of the land was concerned, its selection depended upon the judgment of the Geological Survey. A general discussion arose at this point, participated in by Messrs. Scott, Lamb, Currier, Plumley, and Roth, in regard to erosion, slopes, and farming. When Professor Roth was again allowed to proceed he urged that it is worth something to know that the people of Europe, who have fought this question all over, believe in the influence of the forests upon stream-flow, and without exception have laws regarding the maintenance of protective forests. He also called attention to the fact that Congress, in 1897, was largely influ-

enced by the fact that the western forests were generally believed to have a beneficial influence upon the flow of water of the western states, making them important in the irrigation work. He then pointed out the fact that upon the main issues there was general agreement among scientists, engineers, and others, as well as among the people of our country; that it was generally believed that forests were especially important in holding the soil on the slopes of the mountains, keeping it in a retentive condition and retarding the rainfall by preventing gullying, the gullies being in the nature of under-drains or ditches in which the water rapidly collects and rushes away. He called attention to the fact that the forests at the present time appeared to be the only feasible and economic means of regulating the flow of our navigable rivers; for artificial reservoirs, the only





Eroded Slopes, Western North Carolina

alternative thus far suggested, would destroy railways, highways, and other existing improvements; would prevent the use of valleys, converting them into lakes and reservoirs, and in many cases such artificial regulation of the streams would endanger life and property, besides requiring enormous sums both to construct and maintain; and that in all probability such artificial means would come to nothing if the forests were allowed to be devastated and the mountains converted into waste land such as are already seen in parts of the Appalachians, both North and South. The most important opinion advanced by Professor Roth was that the forests are the only means of holding soil and regulating stream-flow which can at once be established and are already established through probably more than eighty per cent of all these lands, only requiring attention by proper protection and use. In contradiction of the

claim that all these forest improvements and protection would require unusual expenditures running into the hundreds of millions of dollars, Professor Roth clearly showed that these lands, when purchased, could be generally protected and forests maintained upon them for all time, and at the same time the forests would become in a few years not only self-supporting, but paying for themselves, so that the expenditure upon the part of the people would become actually an investment. Professor Roth emphasized the fact that he was willing to stake his reputation and stand by the committee if they voted favorably upon this bill, and he believed that the people at large would do the same thing.

Mr. G. Grosvenor Dawe spoke for the Southern Commercial Congress, of which he is the managing director. He said that the business element of the South expects action; that seven of



Deep Gullies Washed in An Old Field, Long Cultivated in Corn, and Abandoned When Soil Became Thin. Scattered Reproduction of Hardwoods and Pitch Pine, but Not Sufficient for Protection. Jackson County, North Carolina

the states in which government action is expected have passed the necessary enabling acts, the matter being of such importance as to overcome their state's-rights scruples. This action on the part of a number of southern states is sufficient notification to their representatives in Congress to support this measure, and that they expect constructive action following their own. There is a new progressive business spirit in the South, he said, which is not bound by party lines and which looks not alone to the present revenues, but rather to the welfare of the South for the later generations as well as the present one. No statesmanship which does not include this view is constructive, and the South stands for constructive statesmanship. He particularly deplored destruction of the forests by non-resident owners who acquired the lands in the

mountains for cheap prices and are now robbing the South of its natural resources. He urged the committee to consider the question broadly and to make a favorable report.

In closing the presentation of the case, Mr. Weeks made a plain and forcible statement. He explained certain details of the bill in which it differs from that of last year. These are chiefly in the removal of all references to the existing national forests and the income from them, making the appropriation direct from the Treasury, and in the reduction of the life of the bill from nine years to five years. Mr. Weeks urged that Congress should certainly have confidence in the Geological Survey upon the scientific judgment of which decision as to the purchase of these lands would ultimately rest, and that, if the Survey could not be trusted,

it should be reorganized. He believed that this was a sufficient check upon the expenditure for the purpose of the bill. He offered a homely illustration from his experience as a boy on the farm in northern New Hampshire as a further contribution to the discussion of Mr. Moore's report. He said that on the hillside pasture the snow would be gone in the spring so that one could walk in thin shoes, when the snow was lying a foot and a half deep in the woods just above the pasture. It is a matter of common observation which needs no scientific knowledge, he pointed out, that if the trees were cut off from this land it would be in the same condition as the pasture adjoining.

Finally, Mr. Weeks urged upon the committee that it is not new legislation, and that it would be gross injustice not to report back to the House a bill which has in substance passed the Senate twice and the House once. To prevent action on this bill would be resented by Massachusetts and by all New England. The bill is moderate in character and, in my mind, he said, will start a policy that will be of great benefit to the whole country. He urged prompt action, and said that hundreds of thousands of people all over the country were behind this measure, that it had been advocated by President Roosevelt, by President Taft, and is the one practical measure that has been offered in the direction of carrying out the conservation policy.

Mr. Currier made no formal speech, but supported his colleague effectively with pertinent suggestions and facts.

This report necessarily gives a very inadequate impression of the able presentation of the case to the committee.

The interchange of question and answer, the keen and unassailable scientific arguments advanced by Professors Swain, Glenn, and Roth made the hearing a notable one in the history of the campaign in behalf of the Appalachian forests. Chairman Scott, at the outset of the hearing, requested the members of the committee to refrain from interrupting the speakers with questions until they had concluded their statements. Within a few minutes after this he himself interrupted the first speaker and he continued this practise of interruption with questions and interpolation of his own views, especially in the afternoon, when Professor Roth was speaking. This interfered with the orderly presentation of the argument which Professor Roth had prepared, but perhaps it did not interfere with the effectiveness of the discussion, as Mr. Scott's questions were adequately answered. Mr. Scott's well-known opposition to this measure has not in the least abated and is plainly shown in his conduct of the hearings. Indeed, he appears at times more anxious to bring out his own theories, some of which are well defined, than to hear the uninterrupted statement of the expert witness.

The general interest of the committee was shown by the good attendance and keen attention to all points brought out in the discussion.

Mr. Moore's position previously taken before the same committee was so badly riddled by the discussion that the committee considered it necessary to give him an opportunity to take the stand in his own defense, and a special hearing was assigned for that purpose for the 1st day of March.

