

downwards. Thus we see European pacts for attempting to rationalise export and output to keep prices up and prevent over-production as far as possible, having the support of governments and banks. In some countries parliamentary powers are being obtained to control quantities of pit-props and other pitwood exported, with the object of getting better prices for those sent and for reserving the balances to mature.

It is well realised that lumbermen will have to avoid waste as far as possible,

to compete in the buying market with those using forest derivatives for their manufactures of articles, the latter often competing with those made of solid lumber. The competitive weight against lumber in that respect is heavy.

Forests are a great national asset. Not only will Continental governments adhere strictly to limit production, domestic and export, to the annual increment (and if they err at all to do so on the side of less rather than more), but also to plant heavily in future years.

course. The evils of "clearing" forest lands by fire is of the past, opening up a new era for American forestry and forest conservation.

The "push" in afforestation on this side has been stimulated by the very high prices obtained this year by shippers of European soft lumber—which have recently slumped—but the U. K. importers now are of opinion that they bought soft lumber too largely and too early for delivery this year, and too dearly—faults that they are not likely to make twice in two years.

Timber Utilization in Europe

Wood May Prove to Be the Most Important Basic Raw Material for Some Nations

Through the courtesy of the Oberlaender Trust and the Carl Schurz Foundation under which a number of American lumbermen and foresters have traveled to Europe to study forestry and lumber industry conditions, it was possible to study recent developments there and note by contrast the changes that have come about in recent years. Several previous visits had been made to several European countries in 1913 and during and since the World War.

Although many new developments in European practice cannot be fitted directly to American industry, because of differences in economic conditions, it is interesting to note how far they have been able to go in the development of new and interesting uses for wood and particularly the close association which exists between those interested in forestry and those concerned with lumber, its production, distribution, and use. It has frequently been said in many parts of Europe that the lumberman is the forester and the forester is the lumberman. There is no conflict of ideas or objectives. Both seek the same ends and they have a common cause in seeing that both forest production and timber utilization are properly balanced and developed.

Perhaps the outstanding new development noted in Europe is the concentrated and successful effort to defend, protect, expand, and further the markets for lumber and other wood products. In this country, the American lumber industry started its promotional work to protect the markets for lumber as early as 1912 and subsequent years. Before the economic depression over one million dollars was appropriated to combat substitutes and to defend and expand the markets for lumber and other wood products.

In Europe, the most active efforts in this direction were noted in Germany when in

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Photographs by Dr. A. Ebner

1928 and 1929 a movement was started to develop the markets for lumber and various wood products. Probably the most active single agency working in this field is the Timber Development Association in England which started shortly thereafter. A little later, similar timber development associations were organized in Belgium, France, Austria, Switzerland, and Italy.



Typical Norway spruce stands of Germany. There are no Federal or National Forests but private individuals, states, and communities (villages and cities) own practically all the forests which are managed under the supervision of state forestry officials. This forest contained about 60,000 board feet per acre and the trees are from 80 to 100 feet in height. Stumpage is worth from \$15 to \$30 per thousand board feet.

Still later the movement gained great strength and influence in Poland, Czechoslovakia, Roumania, Finland, Sweden, and some of the other countries.

The outstanding feature of this general movement has been the fact that not only are lumbermen, including exporters and importers, interested, but forest engineers, governments through their forestry officials, engineers interested in wood construction, railway maintenance-of-way engineers, timber preservation specialists, and many other groups have interested themselves and combined their efforts for the greater use, protection, and development of the markets for wood.

To an American who has attended many meetings of the National Lumber Manufacturers' Association as well as regional manufacturers associations where discussions have been devoted to this subject for many years, it was somewhat of a surprise to learn that this movement has gained such headway in Europe. One naturally felt that with the concentrated populations and economic conditions which favored the marketing of lumber and other forest products, the problem of timber utilization would be pretty well solved. However, some of these countries which have been important importers are not utilizing their present timber growth. The outstanding example of this is France.

The movement has gained impetus and considerable support not only on the part of important lumber exporting nations such as Roumania, Finland, Sweden, Poland, Czechoslovakia, and Russia, but among the important lumber importing nations of Western and Southern Europe. England is an outstanding example of concentrated timber utilization where lumber is received from almost all important timber exporting nations. It is the great "cross-road" of international timber markets. Over ten million dollars are expended annually for



The Spessart region of Germany contains some of the finest oaks in Europe. They are cut on rotations of 300 to 500 years and the most valuable (largest) trees are used for rotary veneers. Stumpage values equivalent to \$100 to \$1,000 per thousand board feet are found in extreme cases. Only the state can afford to wait until trees reach large sizes before they are cut and marketed.

hardwoods to construct railway cars alone in Great Britain. Consequently, there is a constant struggle between the steel and timber interests to get this business, as 80% of the railway coaches have a combined steel frame and a wooden superstructure.

Noteworthy Developments

With this background of increasing interest in the use of wood, there have been the following noteworthy developments culminating in the summer of 1937:

(1) The third annual meeting in Paris of the Comite Internationale du Bois at which 29 nations were represented by some 96 delegates with over 200 in attendance. Three full days of sessions with evening banquets marked these meetings. There was enthusiastic and general agreement that wood needs wide advertising and propaganda not only in Europe but

throughout the world. One was at once impressed by the high caliber of representatives present at these sessions. Outstanding were the lumbermen of all these nations, high government forestry officials, many leading exporters and importers, timber engineers, foresters, timber preservation specialists, and many others. The meetings were conducted in French, English, and German. Dr. R. Glessinger, executive secretary of the C. I. B. proved to be most facile and expert in his ability to translate immediately all of the papers and discussions and with a most accurate and amazing memory of all facts, properly interpreted with precision and presented in a very pleasant way.

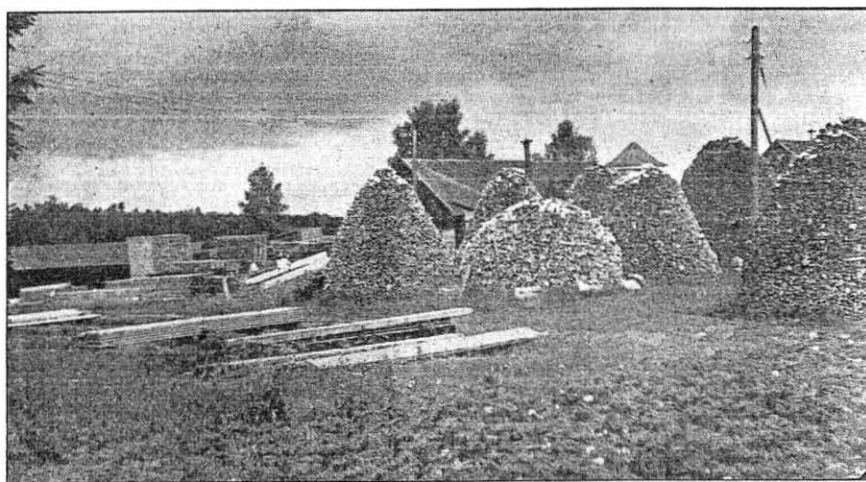
(2) The importance given to wood at the International Exposition at Paris. The outstanding feature was the Pavillon de Bois or wood pavilion, which was constructed entirely, both exterior and interior,

of wood. This contained a large and attractive entrance hall and a high ceilinged auditorium in which the meetings and French state government banquet were held, with many exhibits showing wood from the seed and reforestation periods up to the final use of wood as lumber and a myriad of other products. These were very attractively displayed and commanded wide interest on the part of the public as well as those particularly interested in wood.

Another feature of the International Exposition was the main entrance at the Pont de l'Alma or the Alma Bridge crossing the Seine River where a magnificent and extensive new cross-over bridge was constructed entirely of wooden members and two tall pylons about 200 feet in height were erected. These two exhibits were erected at considerable expense by the French government to point out the advantages of wood, not only in general construction but for various architectural designs and various forms of dwellings and interior finish as well as for chemical and miscellaneous products including wood gas, wood textiles (silk and wool), naval stores, and a great variety of other products.

New Vision of Wood's Importance

(3) The announcement by Dr. J. A. von Monroy, head of the new four-year plan for Germany that wood is very likely to become the outstanding and most important basic raw material of the future, certainly for Germany. To an American accustomed to a super-abundance and great array of basic raw materials which have made this country the rich and powerful nation that it is, it is at once apparent that many of the European nations are exceedingly poor in basic raw materials. From wood, at least in Germany, many products are be-



Many small and permanently located sawmills give stabilized employment to large numbers of people in the forested regions. The lumber is well sawed, seasoned, and graded before marketing. The piles on the right are fuelwood from slabs, edgings, and other mill refuse. All forms of wood command a ready sale on the local markets.



Motor truck logging is the common practice in the woods as it is in most regions of the United States. Power for the cross-haul loading is supplied by the truck engine. Tree lengths are commonly cut and hauled because of lower handling and transportation costs. These are cross-cut at the mills to suitable lengths to supply the local demand.

ing made which are intended to make that nation independent of foreign sources of supply. Coal is the only basic material of which there is an over-supply in Germany. It is lacking in iron, wood, oil, rubber, textiles, copper, and other materials which it must import at great expense. About one-third of its wood requirements must be imported. Under Dr. von Monroy, a new vision of the importance of wood in the economic structure of Germany has been unfolded. The nation is enthusiastically and actively carrying out its program of self-sufficiency, particularly in the matter of many of these raw materials. From wood, gas, and alcohol, are being derived as a source of fuel to substitute for the very expensive gasoline which must be imported at enormous expense. Gasoline may cost (in our money) from 50 to 70 cents per gallon or more and already over 6,000 trucks and passenger cars are being operated by wood gas with wood stations supplanting gasoline stations in many parts of the nation. Not only wood silk but wood wool is being made from spruce and beech. This is an attempt to reduce the enormous quantities of wool which must be imported from Australia and to some extent silk from Japan and to a limited extent cotton from the United States. Up to 35% of the uniforms used for the army and the work camps comparable to our own CCC organization, as well as the railway and street car conductors and many other uniforms, are now being made of wood wool. Even ordinary suits and overcoats are being made, at least partially, from wood. There are 27 new factories now being constructed in Germany for the manufacture of wood wool and food for cattle, and swine, and many other products. The wide ramifications of these products are amazing to an American accustomed to an abundant and relatively cheap supply of timber products. This program affects their whole plan of national forest management very directly because they are finding

they can use much smaller materials from the forest than heretofore and therefore rotations formerly from 80 to 150 years in length are being materially reduced.

European and American Conditions Contrasted

The per capita consumption of lumber and other forest products is very much lower in Europe than in this country. Tradition and custom are important factors in the consumption of wood. Relatively little exterior construction such as in dwellings, barns, or buildings of any kind is fashioned from lumber as is so customary throughout the United States. People build their houses for greater permanency there. It is estimated that probably 80 to 90% of all wood grown in Europe outside of Russia is utilized efficiently, whereas only 34% of the trees felled in our forests is ultimately utilized.

Contrasts between European and Ameri-

can timber utilization may be summarized briefly as follows:

1. There are relatively few important species produced in Europe. Scotch pine and Norway spruce, known respectively as redwood and whitewood in the British markets or as Swedish pine and spruce, comprise about 70 to 80% of all lumber and other forest products in Europe. Three other species are of considerable importance but not comparable with these two in volume. These are beech, silver fir, and oak. Locally there is a little ash, larch, birch, Corsican pine, maritime pine, and some others but utilization is simplified because they have relatively few species compared to our 60 or more that enter prominently in our commercial markets.

2. Trees are much smaller when cut and utilized than in this country. Most of their timber is grown under a systematic plan of forest management whether owned by private individuals, governments, states, communities, or other forms of ownership. It does not pay to wait too long to grow these trees. Generally the rotations (length of time elapsed before the tree is cut) are from 80 to 140 years or more. It does not pay to wait until the trees reach large size. However, these small trees are generally straight, symmetrical, sound, and produce lumber of good quality although containing many small tight knots. In other words, an American would look upon much of this lumber as No. 1 common and No. 2 common boards whether in softwoods or in hardwoods.

3. Knots are not considered as serious defects. One commonly finds knotty lumber in beautiful palace floors, doors, trim, interior finish, panelling, and in other forms. We in America must abandon the idea that knotty lumber is defective, undesirable, either from an æsthetic or practical viewpoint.

4. Lumber is produced from a large number of small but permanently located sawmills. This gives stability of employment and logs from a given drainage unit



Horse skidding to the nearest landing where the logs are loaded on trucks on hard surface roads. The spruce forests are unusually dark, dense, and productive. Stands frequently contain from 20,000 to 60,000 board feet per acre.



A typical view in a Bavarian spruce forest which has been managed on a highly profitable basis. About 20 per cent of all German forests is owned by the cities and villages and are generally operated to serve the purposes of both parks and working, productive forests. This is quite at variance with American custom where a sharp line of distinction is drawn between the objectives of parks and forests. Some of the best known parks of Germany such as the Grunewald in Berlin yields over \$150,000 annually from the sale of timber yet it also serves the purposes of a great recreational park such as are enjoyed in most of our American cities.

or of a certain region are generally fed into these small sawmills which in some cases have been operating for a hundred or more years in the same locations. There is one mill that was established in central Italy in 1550 which is still operating in the same old water-driven fashion.

5. Lumber is generally sawed much more accurately and more carefully air-seasoned before shipment than in this country. The use of dry kilns is not nearly as prevalent as here but their lumber is well-seasoned, carefully stacked, and very accurately sawed in gang saw mills.

6. The per capita consumption of lumber and forest products is exceedingly low as compared with conditions prevailing in the United States. With lumber high in price and construction pursued with a greater sense of permanence, it is only natural that one is impressed by the lack of wood in exterior construction. However, in spite of this situation, wood is still widely in demand for car and ship construction, for flooring and interior finish, for boxes, for temporary structures, furniture, and many purposes for which wood has been demonstrated to be a much better material than any other.

7. In spite of the intense development of forestry, many countries are important importers of lumber and some of them look upon American lumber as the most desirable. Countries such as Norway, Sweden, Finland, Russia, Czechoslovakia,

Poland, and Roumania have a great excess of forest supplies but generally Great Britain, France, Belgium, Holland, Germany, the Mediterranean section, etc., import large quantities of forest products.

8. Economic conditions permit the growth and use of timber on an intensive basis. One finds many peasants using the smallest twigs and branches for fuel. This means complete use of all available forest produce. Forestry in Europe was born on a wave of fear of a fuel famine. When coal was discovered about 1850, the forests were changed into lumber producing units. Now again it seems possible that through the development of plywood, pressed wood, chemical utilization, wood gas and alcohol and other products, the whole program of forestry may be again changed.

The Importance of Wood in Our Future Economy

In the United States we are accustomed to take our rich and varied resources for granted. Our forests have been largely the source of lumber supplies much needed in the building of structures and homes for our westward extension and to house a rapidly-growing population. Conditions in Europe are interesting because they point the way towards possible future developments in this country. While lumber is and always will be of first importance in the structural and building economy of the nation, our timber resources may be

housing, but for a myriad of other purposes including new and impending uses for our forest materials. For example, the markets for plywood, fiber boards, cellophane, rayon, and other products, have advanced enormously in recent years in spite of marked recessions in lumber output. Although we have sufficient cotton and wool for textile purposes, in which European nations are seriously lacking, if our oil supplies become exhausted or depleted, we may have to turn to wood as a source of motive power for various types of engines, including automobiles, stationary, marine and other types. We may turn to the use of compressed wood for the manufacture of gears and other materials as they are doing in Germany and France and thus compete directly with many forms of metals. Much of our cattle and even human food may be produced from wood. In fact, wood may prove to be the most universally useful, basic material for the future. Because from it, may be manufactured materials of construction, chemicals, textiles and many uses for which metals or other materials are now only used. While it is realized that this may be looking a long way ahead into the future, who would have predicted, a few years ago, the enormous increase in the use of rayon, plywood, and veneers, or the important shift of the pulp and paper industry to the South?

Lands Forfeited to State

Cut-over Forest Land Comprises Bulk of Tax-Delinquencies

A study of the types of land forfeited to the state for non-payment of taxes in four representative counties of Mississippi (Tunica, Quitman, Washington, Issaquena) in the hardwood area of the Yazoo Delta, shows that cut-over forest land comprises more than eighty per cent of the land forfeited.

Under Mississippi law, three classes of land are recognized for taxation purpose; "cultivable" land, "timbered" land, and "uncultivable" land. The second class includes only land bearing merchantable timber, while the third includes cut-over forest land and abandoned crop or pasture land. In these four counties, however, there is very little abandoned agricultural land.

The following table shows the land area owned by the State in a series of selected townships in each of these counties, and the percentage of the total in each of the three use-classes, as of January 1, 1936:

| County | Area in ¹ State Title Acres | Distribution of Area by Land Use | | | |
|------------------|--|----------------------------------|----------|---------------------|---------|
| | | Culti- State Title vatable | Timbered | Unculti- vatable | Unknown |
| | | Per Cent | | | |
| Tunica | 15,237 | 1.9 | 4.2 | 73.4 | 20.5 |
| Quitman | 23,202 | 1.6 | 0.0 | 93.2 | 5.2 |
| Washington | 13,206 | 4.1 | 0.0 | 93.8 | 2.1 |
| Issaquena | 26,340 | 4.8 | 16.9 | 72.2 | 6.1 |
| Total or average | 77,985 | 3.2 | 6.5 | 82.3 | 8.0 |

¹In selected townships only.

²Most of this timber is of unmerchantable species.

The reason for the generally low percentage of timbered land in state ownership is that merchantable timber is usually removed prior to delinquency. High taxes, particularly for drainage purposes, make the holding of most cut-over land highly unprofitable, and most of these forfeited areas lie within drainage districts.