FOREST CONDITIONS IN THE SEVERAL COUNTIES.

**Ashland.**—The northern one-fifth was formerly a pinery on red clay soil with a thin sprinkling of inferior hardwoods, some hemlock and occasional cedar and even tamarack on the more level areas. South of this a mixed forest of hardwoods, hemlock, and pine on gray loam and clay lands stocked both slopes of the range as well as nearly all parts south of the range. In places, especially along streams, pine was predominant, as was also the case on the small sandy tract along the Flambeau river in the southeast corner of the county. The pine timber along the lake, except that of the Indian reservation, is cut and the pine has been culled from most of the mixed forest and is estimated, all told, at only 300 million feet. Small patches about the mines have been cut clean of all timber. Generally the hardwoods and hemlock are culled and with a yield of 4 M. per acre amount to about 700 million feet of hemlock and 900 million of hardwoods, of which birch and basswood form fully 60 per cent., while oak is hardly of economic importance. Fires have injured Ashland county only in the pinery along the lake and thus even the swamps are fairly well stocked with cedar, tamarack, and some spruce.

**Barron.**—The northern one-third, a gray loam and gravel land, was stocked with a mixed forest of pine and hardwoods, the pine prevailing, except on the ridges of the northwestern part of the county. In the central part on a variable sandy loam, was a pinery with a thin mixture of hardwoods and occasional better hardwood bodies. (See "Soo" Line from Cameron west.) The southeastern one-fifth of the county was sandy and bore jack pine and oak openings. The pine is cut, except in the northern and northeastern towns; the hardwoods are culled and in nearly all parts of the county damaged by fire. The standing pine is in isolated bodies and is estimated at 150 million feet. The scattering bodies of better hardwoods are believed to represent a stand of about 250 million feet in which oak, basswood, birch, and maple enter in nearly equal proportions. The few swamps of this county are reported bare of merchantable timber in larger quantities. Large tracts of cut-over and burned land occur in nearly all parts.

**Bayfield.**—A belt of red clay, 6 to 10 miles wide, skirting the lake, is pinery with a light mixture of scrubby hardwoods and some hemlock. The southeastern one-third, occupied by the basins of the Nemakagon and White rivers, is a mixed forest of pine, hardwood, and hemlock
on a gravelly gray loam; and the central and western part, a broad belt extending from T. 50, R. W. southwest into Douglas county, is a sandy jack pine and Norway pinery, with considerable white pine in places. The timber along the lake, except that of the Red Cliff reservation, is generally cut; it is also heavily cut into on White and Nemakagon rivers and along the Northern Pacific Railway. The present stand of pine is about 3,000 million feet, of which a large part falls to the regular pinery lands. In addition, there are about 400 million feet of hemlock and an equal amount of hardwoods, most of which is birch, basswood, and maple; the oak, though abundant as scrub wood, being scarcely represented as a real timber tree.

On some of the “barrens” or jack pine and bare sandy lands, no timber existed when logging began, but there is evidence that in former times they, too, were covered by a forest of larger timber.

The numerous swamps of the southeastern part of this county are fairly well stocked with both cedar and tamarack and also some spruce. The swamps of the estuaries along the lake are generally covered by heavy growth of cedar. Bare wastes of great extent occur in all localities where pine logging has been going on.

_Burnett._—Nearly the entire county is a sandy jack pine and Norway pinery, dotted with regular “barrens” and island patches of better loam lands. In the northwest corner, north of the St. Croix river, is a tract of gray loam lands stocked originally with pine, lightly mixed with hardwoods. Along the south line of the county extends a body of loam lands covered in part by heavy and almost pure stands of hardwoods, only the sandy depressions bearing pine. The pine in this county is largely cut, the little hardwood damaged by fire and only jack pine occurs in extensive woods. The scattering pine is estimated at about 200 million feet and about 300 million feet of hardwoods are believed to occur in this county, besides some 300 million feet of jack pine, which sooner or later must become of value. The swamps are largely bare or else covered by a light growth of tamarack. A large part of this county is positively bare land, being devoid of any forest cover.

_Chippewa._—The southwestern and south central one-fifth of the county is oak openings and prairie (extensively settled) in its western, and jack pine woods in its eastern part; the remaining four-fifths of the county are forest. Of this, the part east of the Chippewa river and small tracts along the river on the west side, are covered by a mixed forest in which hemlock and birch are abundant, except on the southeastern part of the county, where the birch and hemlock forest merges into an oak forest. In the timbered part of the county west of the river the hemlock is missing and birch much less
common. Though the pine has been cut in all parts of this large county, there is still a considerable amount scattered and in isolated bodies which is estimated at about 500 million feet. The hardwoods have been cut into in the southeastern and also in the northwestern part and large tracts have suffered heavily from the fires of the large pine slashings following all the streams; the hemlock has been cut but little, but like the hardwoods, has been damaged by fire. The standing hardwood and hemlock yield about 5 M. per acre, the yield in the pure hardwoods of the western part being lighter. About 800 million feet of hemlock and about 1,100 million hardwoods are believed to exist in this county. In the hardwoods in the western and also the southeastern woods the oak is predominant, but on the whole forms little over 10 per cent., while basswood and birch form over half the total supply.

The swamps, extensive only in the northeastern part of the county, have been much run over by fires and are, therefore, very poorly stocked. Large areas of burned-over wastes occur along all the streams.

Clark.—The greater part is a level loam land area, formerly covered by a forest of hardwoods, mixed with a remarkably heavy stand of large white pine. Hemlock occurs only in the northeastern portion. The western and southern part is invaded by the sandy area covering Jackson and Eau Claire counties, and was formerly covered by a pine forest without hardwoods. The pine has nearly all been cut and was sawed at La Crosse and Eau Claire, and only about 200 million are believed to be still standing. The hardwoods are culled especially for oak and have suffered from fires. The remaining supply is estimated at only about 650 million feet, of which oak is still nearly 30 per cent., the remainder being chiefly basswood and elm. Clark county has few swamps and these are poorly stocked.

The greater part of the county today is still covered by culled hardwoods, much of it is settled and only the sandy pinery presents tracts of bare waste many miles in extent.

Douglas.—The northern one-third of this county is red clay land with pinery in which is found an unusual mixture for this State of pine (chiefly white pine), white and yellow birch, and other hardwoods commonly with more or less cedar and tamarack. South of this and extending south to the St. Croix river and east to the Brule river is a similar forest of pine with a somewhat heavier mixture of hardwoods, heaviest on the range, growing on gray loam land. The southeastern part, south and east of the St. Croix, is a sandy jack pine and Norway pinery with large jack pine woods following the river into Burnett county. The pine has been cut along the lake and
also along the St. Croix river and the railways, but there is still a
great deal of standing timber in large and small bodies, estimated to
cut about 3,500 million feet. The hardwoods have been little invaded,
but since they form here but a secondary mixture, they are largely
killed by fire when the pine slashings are burned, as is well illustrated
by the country about, and south of Superior. On Maple Ridge con-
siderable hardwood is cut, and strangely enough, oak forms often as
much as 25 per cent. of the yield. Scattering as they are, the hard-
woods are still believed to be about 700 million feet.

Dunn.—Of the sandy eastern half the northern portion is jack pine
woods and openings, the rest oak openings with real prairies. Of
the western half the clay and loam land ridges were covered with al-
most pure hardwoods and the more sandy valleys were stocked with
a mixed growth of large pine and hardwoods, the former often prev-
vailing. The woods on Hay river partook of the regular pinery form
and merged into the jack pine woods of the northeastern towns. The
pine is practically all cut, though the scattering patches still amount
to several million feet. The hardwoods are much interrupted by
clearings, many tracts have been culled and even cut clean. The iso-
lated tracts of hardwood, with a yield of about 4 M. per acre, are es-
timated to cut 400 million feet of which oak is 25 per cent., and bass-
wood and maple form 50 per cent. The few swamps are generally
bare of merchantable material. Large areas of bare wasteland occur
in the jack pine district and may be seen along the railway between
Wheeler and Summit. Many groves of fine young white pine are fast
growing into timber about Menomonie.

Florence.—The greater part of this county was a mixed forest of
pine, hardwoods, and hemlock on a gray loam, with smaller tracts of
regular pine land, especially along the streams, and a larger tract
in the northeastern part, where even jack pine woods covered con-
siderable ground. At present the pine is largely cut, and only about
150 millions of feet are believed to exist in this county. The hard-
woods and hemlock have not been cut except small patches about the
towns, but have been injured in places by fire. With 4 M. feet per
acre of both hardwood and hemlock, the cut of the latter is about
300 million feet and that of the former about 400 million feet, of
which basswood, birch, and maple form 75 per cent., while oak
scarcely occurs. The swamps are generally covered and swell the en-
tire cut of timber by over 100 million feet. Burned areas occur in
every town of the county, occupying 20 per cent. of the entire land
surface. Here, as in other counties, they form a far greater propor-
tion of the area than is usually supposed.

Forest.—The northwest quarter of the county is largely a flat,
swampy piny, the rest is a forest of mixed hardwood, pine, and hemlock, generally on gravelly gray loam. This mixed forest is interrupted and dotted with numerous bodies of pine lands, where the hemlock and hardwood almost disappear. The pine is mostly cut. It is claimed that about 500 million feet are still standing. The hardwoods and hemlock are unculled and but little hurt by fires except about the pine slashings. With 4 M. feet per acre of well stocked woods there are about 500 million feet of hemlock and 1,000 million feet of hardwoods, of which birch and basswood form about 60 per cent. As in the neighboring counties, a little red oak occurs in Forest, but is thinly scattered over the entire county and would hardly form more than 2 per cent. of the cut. Many of the swamps are open bogs, the rest are generally stocked and the swamp timber, cedar, tamarack, and spruce, amount to fully 300 million feet. Nearly all pine slashings are burned bare, so that a considerable amount of waste land occurs.

Iron.—The southern one-fourth is a flat, loamy sand piny of the same nature and continuous with that of Vilas and the northeast corner of Price counties. The rest is a loam and clay area with a mixed forest of hardwoods, pine, and hemlock. On the range the hardwoods and hemlock predominate and pine is scattering, otherwise the pine forms a heavy mixture everywhere. The numerous swamps, especially abundant in the southern half of the county, are generally stocked with cedar, tamarack, and some spruce, and these woods also invade more or less the low, flat portions of the ordinary woods, which are not really swamp. At present the pine is cut from parts of all townships, some of them being pretty well cleaned out, and the standing pine timber is estimated at only about 400 million feet. The hardwoods and hemlock have been cut clean on a small area about the mines, but otherwise remain unculled and not badly hurt by fire. The standing hemlock is estimated at about 350 million feet, and the hardwoods at about the same. Of these birch, basswood, and maple predominate.

Jackson.—The western half is a sandy loam district almost entirely occupied by oak openings, mixed with some tracts of better soil with bodies of better hardwood timber. The eastern half is a level, sandy piny with many swamps and no hardwood timber. This area furnished considerable pine, but is now largely cut and burned over, and only about 100 million feet of pine is claimed to be standing. Numerous small and large bodies of young sapling pine and also of jack pine interrupt the extensive bare wastes. The swamps which are generally bare of merchantable material, were formerly stocked chiefly with tamarack, but have been cleaned out by repeated fires.
Langlade.—This county is covered by a continuous mixed forest of hardwoods and hemlock in which pine occurred both scattered and in denser bodies in patches and belts, which unlike those of Marathon county, do not always follow the drainage courses. The pine is practically cut, though the scattered material is still estimated at about 150 million feet. The hardwoods are dense and heavy; their cutting has hardly begun, and fire has injured them but little, nor is it likely to do so in the future. The standing hemlock amounts to about 1,000 million feet, the hardwoods to 1,100 million feet. Birch, basswood, and elm in nearly equal proportions form about 80 per cent. of the hardwood, followed by maple and ash, and a very small quantity of oak. The swamps are generally stocked with cedar, tamarack, and some spruce. Larger bare areas occur along the Wolf river, and include in all parts only the pine slashings.

Lincoln.—A mixed forest of hardwoods, hemlock, and pine covers the clay and loam lands, or about 80 per cent. of this county. A small strip along the Wisconsin river and a broad V shaped tract spreading northward from below the junction of the Tomahawk and Wisconsin rivers are sandy pinery. The pine is generally cut, only about 100 million being in larger bodies, but there is a great deal of scattered pine which will bring up the total cut to at least 250 million feet. The hardwoods are as yet unculled, have suffered little injury from fire, and with the hemlock will cut 6 M. feet per acre of all well stocked land. This means a total cut of about 1,000 million feet of hemlock and an equal amount of hardwoods, in which birch, basswood and elm represent about 70 per cent., oak only about 3 to 5 per cent. The swamps are largely stocked with both cedar and tamarack and a little spruce, but many of them have been burned into or were entirely cleaned out. Cut-over, burned, or bare lands exist wherever pine was dense and in the aggregate amount to many thousand acres of the very kind of land least desirable for farming.

Marathon.—This county was a continuous mixed forest of pine, hardwoods, and hemlock, except the narrow border along the larger streams where pine prevailed. The pine is nearly all cut; the present stand is estimated at about 200 million feet, much of which is thinly scattered through parts of the mixed forest. The forest of hardwoods and hemlock has been heavily cut into for more than ten years; it is interrupted by large clearings, but has not been injured much by fire. The standing hemlock is estimated at about 1,500 million feet, the hardwoods at about the same amount. Of the latter, birch and basswood in nearly equal amounts, form 60 per cent., elm 20 per cent., and oak only about 5 per cent.

Marathon has little swamp, most pine slashings have been burnt
over and since so much good land exists all about, they are generally wastes. Many groves of young white and Norway pine may be seen along the Wisconsin river. Though well settled and stocked with hardwoods which do not encourage fires, even this county in the dry season of 1894 suffered considerably from fires, a fact which emphasizes the need of organization for their prevention.

Marinette.—The greater part of this county is a pinery. Its territory is slightly invaded by the mixed forest of Florence and Forest counties along the county line. Isolated bodies of pine slightly mixed with hardwood and hemlock are scattered in parts of the pinery, particularly in the towns along the Menominee river. Formerly, a heavy stand of pine mixed with hardwoods occupied the part next to Green Bay. This latter area was burnt over during the Peshtigo fire of 1871 and is now bare or brush land with some settlement. Pine has been cut in every town in the county; the present stand is estimated at about 1,500 million feet. The light mixture of hardwood and hemlock is largely fire-killed wherever the pine has been cut; the green timber remaining is estimated at nearly 500 million feet, half of which is hemlock. Of the hardwoods, maple, birch, and basswood predominate, oak as timber being very scarce. In the brushland along the Bay, the white cedar is disputing the ground with poplar and white birch. Extensive tracts of jack pine occur in the central and southwestern part. Large burned-over wastes exist in all parts of the county.

Oconto.—Over nearly half of this county next to Green Bay, the variable sandy loam land was covered by a heavy forest of pine, mixed with hemlock and hardwoods. The central part of the county is a sandy belt of pinery land, continuous with the sandy pinery of Marinette and Shawano counties. The loam and clay lands of the northern one-fourth was stocked with a heavy mixed forest of hardwoods and hemlock, with pine either scattering or in small bodies. At present the lower part of the county is cut over, much of it bare and a large part settled. The pine is cut in nearly all parts, and only 65 to 75 million feet are claimed to be standing. The hardwood forest, in which the beech is conspicuous only on the lower sandy loam lands, still covers a quarter of the county and is estimated to cut about 500 million feet of hemlock and 400 million of hardwoods, principally birch, basswood, elm, and maple, considerable ash and little oak. The swamps of the lower part are burned over and extensively drained and utilized. Those of the north half are generally stocked, the cedar prevailing. Fine groves of young white pine are abundant in the southern towns.

Oneida.—Almost the entire county is a loamy sand pinery, in which
good hardwoods and hemlock are practically wanting. A few isolated island-like bodies of mixed forest on heavier soil, a small tract in the southwestern and larger ones in the southeastern part of the county disturb the general uniformity. The pine has been cut along nearly all streams and railways, and the remaining timber occurs in interrupted stands and is estimated at 1,200 million feet, of which a considerable part is red (Norway) pine. Of about 60 million feet of hardwoods 40 belong to birch and basswood, the rest being elm and maple and very little oak. The hemlock is believed to cut about 20 million feet and is too scattering to be considered at present. The numerous swamps, formerly stocked with tamarack, cedar, and some spruce have suffered much from fires. Large tracts of burned over and bare land occur in all parts of the county and of the numerous pine thickets, which occupy thousands of acres, a great many have been injured and killed by fire.

Polk.—The northwestern corner from Wolf creek to the St. Croix river is sandy jack pine woods, which continue into Burnett county. The remainder of the northern half is generally a hardwood forest, quite pure on many of the ridges, mixed and often entirely displaced by pine in the sandier depressions and valleys. The southeastern portion, about two tiers of towns along the east line from the southern boundary northward, was piny with light mixture of hardwoods and better bodies of hardwoods in places and the southwestern portion was jack pine and oak openings. The pine is mostly cut, the standing timber is in isolated bodies and is estimated at about 240 million feet. The hardwoods have been extensively culled except in the northern townships, where a stand of about 600 million feet is believed to exist. Of this, oak and basswood form over half, while birch is comparatively scarce. Polk county has few swamps and no large quantities of merchantable timber are claimed for these. Cedar is practically wanting. The jack pine woods are quite extensive and will yield a heavy cut. Bare areas are common here as in other counties. A few of these tracts are stocked with fair-sized poplar which on this sandy loam seems to thrive better than elsewhere.

Portage.—The southeast quarter is oak openings with groves of jack pine, especially in the western part. The southwest quarter is jack pine woods and in the southern portion, a marshy pinyery, forming part of what is known as "Little Pinery." The northern half, broader on the western side, was a mixed forest of pine and hardwoods with some hemlock and was divided by strips of sandy pinyery following up the Wisconsin and Plover rivers. Both pine and hardwoods have been cut in nearly all parts of the county, but there are still smaller bodies and scattering timber to warrant an estimate of
about 20 million feet of pine. The hardwoods and hemlock, of which some fair bodies exist in the northeastern part of the county, represent a probable cut of about 150 million feet, 50 million being hemlock. The extensive and dense jack pine woods will furnish 150 million feet of material for special mills or pulp purposes and will in time prove of considerable value. The swamps, of which a large part are open marshes, have suffered much from fires. Large tracts of burned-over pine slashings exist throughout the lumbered part of the county.

**Price.**—The entire county is a level loam and gravelly loam area, formerly stocked with a most luxuriant mixed forest in which pine prevailed in most of the northern two-thirds and the hemlock and hardwoods in the rest. On a few small tracts, in the central part and also along the Oneida county line in the northeastern part of the county, a sandier soil gave rise to almost a pure pinery form of forest. The pine is generally cut, about 200 million are still believed to be standing, but most of this is scattered and not over half in large bodies. The hemlock and hardwoods in over half the county have suffered seriously from fires and over large areas have been killed entirely. Nevertheless, there are nearly 400,000 acres of wooded area which are believed to cut about 1,000 million hemlock and 900 million feet of hardwoods. In the latter birch and basswood predominate, with elm and maple following, both ash and oak being rather scarce. Price is one of the counties in which fire has done unusual damage and large areas are entirely bare of growing material.

**Sawyer.**—A mixed forest of pine and hardwoods covered nearly the entire county, with two exceptions: (1) a narrow strip along the Nemakagon river, which is a sandy jack pine and Norway pinery, and (2) a sandy pinery area south of Round lake from the Chippewa river west to the county line. The pine prevailed over considerable areas, as for instance, along the Chippewa and Flambeau rivers. Hemlock occurs only in the eastern two-thirds of the county, being rarely found west of Range 7 W. The pine has been cut along all the rivers, but there still remain large quantities, which in the aggregate are estimated at 2,000 million feet, and by some even at 2,500 million. The hemlock amounts to about 900 million feet, the hardwoods 1,000 million, of which fully half is birch and basswood and about 10 per cent. is oak, this latter occurring chiefly in the western part of the county. The 12 per cent. of swamp lands are generally stocked, though extensive damage has been done to those in the vicinity of pine slashings. Even in this county with little settlement, large tracts of burned-over lands are abundant.

**Shawano.**—The southeastern one-third of this county, with its var-
CONDITIONS IN COUNTIES.

iable sandy loam and loamy soil, was formerly covered by a heavy forest of pine, mixed with hardwoods. The country about lake Shawano and north to the county line is part of the sandy pinery district extending from this lake to the Menominee river. The northwestern two-thirds was a very heavy mixed forest of hemlock, hardwoods, and pine, growing on a good, though in places very strong, loam and slay soil. The pine is cut, except in the Indian reservation, where about 300 million are still claimed to be standing. The hardwoods and hemlock of the southeastern two-thirds are culled and damaged by fire, those of the northwestern half are largely intact and have been injured only about pine slashings. The standing hemlock is estimated at 650 million feet, the hardwoods at 760 million feet, of which basswood, elm, and maple form over 70 per cent., and oak only about 5 per cent. Beech occurs only in the sandy loam area.

About 30,000 acres around Shawano are covered by young white pine, which has sprung up on old slashings. The extensive swamps of the southeastern part have all been burned over and many of them are being drained and cultivated. Those of the western half are largely stocked with cedar and tamarack, some of them yielding 15 M. feet and more per acre. Bare "stump prairies" occur in all parts of the county.

Taylor.—A continuous mixed forest of pine, hardwoods, and hemlock on a loam and clay soil covered the entire county. The pine has been cut, except small bodies in the southwestern part, estimated at about 200 million feet. The remaining forest still covers more than 60 per cent. of all wild lands and cuts about 6 M. feet per acre. In this forest hemlock is predominant, is estimated at about 1,500 million feet, some good authorities placing it at 2,000 million. The hardwoods are about 1,000 million feet, of which 70 per cent. is basswood and birch and only about 5 per cent. oak. The few swamps are generally stocked with tamarack, some cedar, and spruce. Owing to the dense, damp cover of the mixed forest, Taylor county has suffered but little from fires, and large areas of bare land are comparatively scarce.

Vilas.—A mixed forest stocks the better soils of the northern one-fourth of this county and forms some scattering island tracts; elsewhere it is an uninterrupted pinery, principally white pine with little Norway and hardly any jack pine, covering a rather level, loamy sand area dotted with several hundred lakes and numerous swamps. Pine lumbering began here along the Wisconsin river over 25 years ago, and the pine forest is cut into in almost every township. The present stand of pine is estimated at about 1,500 million feet, besides many thousand acres of sapling and young pine thickets which might
soon grow into valuable timber. Both hardwoods and hemlock are rather scattered, except in some of the northern townships. The hemlock is estimated at about 120 million feet, the hardwoods, of which birch, basswood, and maple are most important, at about 150 million feet. Of the numerous swamps, which form over 20 per cent. of the area, many are open bogs, but the majority are stocked with tamarack and cedar and some spruce. Both in the swamps and the pine slashings, fire has made much havoc and large areas of bare stump wastes are abundant.

**Washburn.**—An area involving the northwestern one-third of the county with broad arms extending up the Totogatic and Nemakagon rivers into Bayfield and Sawyer counties is sandy pinery with large bodies of jack and Norway pine, mixed with white pine. The rest of the county, generally a gravely gray loam, was covered by a heavy stand of white pine with a light mixture of hardwoods. The pine is generally cut; the present stand is estimated at 350 million feet. The hardwoods have suffered much from fires and over large areas not a foot of merchantable timber exists. The standing hardwoods are estimated at about 220 million feet, of which basswood, maple, oak, and birch in nearly equal proportions form about 80 per cent. No swamp woods of commercial importance are reported. Some of the largest areas of perfectly bare, cut, and burned-over lands in Wisconsin occur in this county.

**Wood.**—The north half of this county was covered by a heavy stand of white pine with a mixture of hardwoods, to which was added a sprinkling of hemlock along the north line. South of this the sandy loam and loamy sand area was covered by regular pinery, which gave way on the west side of the river to an extensive open marsh and cranberry bog dotted by sandy, pine covered islands. Extensive bodies of jack pine follow up the river into Portage county.

The pine has nearly all been cut, and the 100 million feet of standing pine assumed for this county are mostly scattering and sapling material. The hardwoods have long been culled in all parts of the county and not over 12 per cent. of the area, with a probable stand of about 300 million feet is believed to remain. Of this hardwood over half is oak and basswood. The hemlock is confined to the northern towns and will cut about 50 million feet. Aside from the large open swamp in the southwestern part, there are comparatively few swamps in this county. Large cut-over and burned-over areas are numerous, and much land is stocked with culled woods furnishing ample fuel, etc. Some fine groves of young white pine may be seen along the Green Bay and Western R. R. near Grand Rapids.