STOCKS IN CLYDE PORTS.

We take from the *Timber Trades Journal* the following Comparative Table showing Import and Consumption of Timber in Clyde Ports during 1880, 1881 and 1882:—

	IMPORT.			CONSUMPTION.		
	1880. *Pieces.*	1881. *Pieces.*	1882. *Pieces.*	1880. *Pieces.*	1881. *Pieces.*	1882. *Pieces.*
Yellow pine logs	47,954	42,200	35,500	50,051	43,300	42,139
Red pine	13,241	6,091	6,400	6,050	6,500	8,161
Oak	6,789	6,913	8,172	6,283	6,693	7,766
Elm	5,712	4,025	2,563	2,225	2,935	4,943
Ash	2,215	2,331	1,060	1,697	2,371	1,619
Birch	9,676	7,256	4,318	7,921	6,978	6,050
Pitch pine (hewn and sawn)	36,400	57,565	52,798	30,708	47,000	48,789
" planks	60,286	38,267	40,000	41,767	42,700	57,275
Canadian deals	1,003,262	415,704	756,763	601,000	720,800	633,251
New Brunswick and N. S. deals	773,344	895,826	475,423	692,300	900,600	538,350
	Mills.	Mills.	Mills.	Mills.	Mills.	Mills.
Staves, Quebec	436	175	247	242	307	164
" States	203	500	850	462	452	593

COMPARATIVE STATEMENT OF STOCK IN CLYDE PORTS, (GREENOCK TO GLASGOW INCLUSIVE) AT 31ST DECEMBER 1880, 1881 AND 1882.

	1880. *Cub. ft.*	1881. *Cub. ft.*	1882. *Cub. ft.*
Quebec waney boardwood	672,525	767,631	731,445
Quebec square Yellow pine	1,316,200	1,127,900	807,176
Quebec red pine	387,232	372,300	302,533
Lower port yellow pine	4,189	1,133	—
Baltic red and white pine	130,311	94,965	47,750
Pitch pine—*hewn*	197,924	620,191	353,185
" —sawn	245,221	480,187	716,234
" —planks	92,419	69,997	22,300
Quebec oak logs	319,344	348,500	360,176
" elm	140,883	244,781	136,611
" ash	32,367	35,855	35,158
" and lower port birch	60,230	62,436	19,619
" maple	—	8,154	15,043
" cherry	—	1,442	2,232
" hickory	5,091	3,961	13,394
" white wood	633	3,468	1,115
" Tamarac	1,511	1,123	32
Walnut	4,824	24,824	8,253
Sycamore	—	—	12,632
Chestnut	—	—	2,396
Teak	360,300	339,000	141,400
Greenheart	60,454	16,865	55,793
Spars, Vancouver	56,890	45,280	34,155
Spruce spars	15,662	42,659	41,452
Pitch pine masts	5,230	1,493	771
Quebec 1st pine deals	543,430	271,451	105,292
" 2nd pine dls,	80,102	29,242	51,702
" 3rd "	337,150	271,599	432,983
" 4th "	129,100	81,869	95,958
" red "	134,000	69,154	42,099
" spruce deals	144,810	75,633	288,060
Michigan 1st pine deals	—	—	10,852
" 2nd pine dls.	—	—	5,939
Lower port spruce deals	174,220	156,292	99,843
" 2nd pine dls.	153,600	174,893	87,053
	Mills.	Mills.	Mills.
Quebec pipe staves	47	12	40
" puncheon "	166	40	110
U. States staves	30	80	329

FORESTRY REPORT.

We take the following from the report of the delegates appointed by the Ontario Commissioner of Agriculture to represent the Province at the meetings of the American Forestry Congress at Cincinnati and Montreal:—

The delegates, in view of the information obtained at the several meetings of the American Forestry Congress, beg leave to make the following recommendations:

I. That such of the public lands as are more suitable for the growing of timber than for agricultural purpose, be retained by Government as a part of the public domain.

II. That within this timbered tract scattered portions be leased to persons suitable to act as forest police, to protect the timber lands from trespass, guard against fires, remove fallen timber, and act under instructions.

III. That no trees shall be cut, whether pine, spruce, hemlock, or hardwood, on any of the public timber lands under fourteen inches in diameter at the stump.

IV. That no cattle, sheep, or swine be allowed to roam at large in any of the public woodlands.

V. That the lighting of fires in or near any woods from May to October, inclusive, be prohibited, under severe penalties.

VI. That a general stock law be enacted, prohibiting cattle, sheep, and swine from running at large in any part of the Province, unless the municipal council of any municipality shall pass a by-law authorizing their running at large within that municipality.

VII. That encouragement be given to farmers to plant timber lots of not less than ten acres on each farm of one hundred acres, and maintain the same as a timber lot, from which cattle must be faithfully excluded. Such encouragement may be given by exempting the timber lots from taxation so long as the same are maintained and properly cared for.

VIII. That encouragement be given to farmers to plant and maintain shade trees along the public highways and the boundary lines of farms, by granting out of the Provincial treasury, a sum of ten or twelve cents for each tree so planted and maintained in a healthy and growing condition for a period of five years, provided the municipal council of the municipality in which they are growing shall have granted a like sum.

IX. That hereafter it be a condition in all sales or grants to settlers, that not less than twenty-five acres in every hundred shall be forever kept as woodland, under penalty of forfeiture of the whole, and that the covenant be made to run with the land.

X. That scientific and practical instruction in forestry be given to the students at the Agricultural College.

XI. That a competent conservator of forests be employed, with a sufficient staff, and clothed with adequate powers to see to the proper execution of all laws relating to the cutting of timber, lighting of trees, running at large of animals, etc., etc., within the timber lands of the Province.

XII. That as soon as practicable the management of the public forests be assumed by the Government, and all timber be cut and sold, trees planted, pruned, and cared for, and all matters relating thereto be conducted under the supervision of a chief forester.

XIII. That the grounds of the several public institutions be utilized as far as practicable as experimental stations, by planting thereon timber trees that promise to be of practical value, and testing their adaption to these several localities.

XIV That Government cause accurate maps to be made of each County, showing the area that has been cleared off, that has been destroyed by fire, and that is yet covered with timber, and indicating as far as practicable the quality of the standing timber.

XV. That a forest of acclimation be established at the Agricultural College, Guelph, in which shall be planted such forest trees of other countries as may probably become acclimated in this country, and prove to be valuable for economical or ornamental purposes.

All of which is respectfully submitted,

D. W BEADLE,
WM. SAUNDERS,
WM. BROWN,
P. C. DEMPSEY,
THOS. BEALL.

PRESERVING RAILWAY TIES

In Austria, Germany and France there are some 80 roads that use treated ties, and 33 of them have records of successful processes of treatment. The chloride of zinc method, or burnettizing, takes the preference for several reasons. Its practicability is the best established, the objections to its use are few, and the cost is slight. When applied, it is diluted 99 per cent. Kyanizing, or the use of corrosive sublimate, a poison, is dangerous, the workmen who use it running great risks. Convicts are usually employed for the purpose. Creosoting dates back in its use to ancient Egyptian history. Creosote and cedar oil were employed for embalming mummies, and for general purposes of preservation. The common refined tar used contains one per cent of creosote. When timbers are saturated with this they are highly inflammable, but the process is not particularly dangerous to the workmen. There are, in all, some 60 methods of treating timber, only a few of which have borne out a practical test. Pyroxyline of iron is used by repeated application by means of a hole in the timber, the agent dissolving itself and becoming diffused through the vascular tissues. Soaking in salt, using a solution of gas-tar, rosin and linseed oil; charring the surface to protect the body; steaming with creosote, to prevent dry mold; applying sulphate of iron and sulphate of copper, are processes that have met with more or less satisfactory results. A beech fence has already stood 26 years, with sulphate of copper. Where dampness gathered around the spikes or nails driven into the material, a chemical action resulted which induced decomposition. The expedient was adopted of dipping the spikes in tar. There are several solutions employed for petrifying, such as carbonate of lime, alum and potash, steaming with chloride of lime and diluted sulphuric acid, etc., but common or Glauber's salt seems as feasible an agent in this way as any that has been tested. In the German experience, creosote costs eight times more than chloride of zinc. There a tie is treated at a cost of 6 cents, while the Houstan & Texas Central road finds its creosoting process to cost 60 cents per tie. Superheated steam is also held to weaken the wood by destroying the vascular tissues. By simply dissolving old zinc in acid, chloride of zinc can be made for about 2½ cents per pound, or it is furnished in tanks at 3½ cents. The patentee figures the cost of impregnating ties, with the apparatus in proper operation, at about 8 cents each. The average life of a tie is found to be about five years, while preserved ties can readily be made to last, as they have in Europe, 25 to 30 years.

The Royal Railroad Company, of Hanover, Germany, has sent several specimens of burnettized timber by the patented process, as follows: Part of the middle of a pine tie which served on the road from 1852 to 1879: a piece from the centre of a beech tie which lay in the road from 1854 to 1879; a piece from the centre of an oak tie which lay in the road from 1854 to 1879; and other specimens. E. Buesch, of the Grand Ducal Railroad, and author of a German work on the subject of timber-preserving, makes some statements of the same character. He tells of pine ties lying in a road from 22 to 25 years, and when taken out, because of damage to the road, they were undisturbed so far as decomposition was concerned, being made into fence-posts and used in other ways. C. Shaler Smith, city engineer of Omaha, Neb., states that the treatment of wood diminishes its tendency to swell or contract, as observed in timbers put into a bridge at St. Louis, the amount of expansion depending on the wood used. He further says. "I used sweet gum, a wood which rots in four months and swells one inch and a half in 16, as the best wood to experiment with, as it could be had at $10 per thousand. The bridge pavement is nearly two years old, is in first-class condition (the traffic is so great that the average life of a three-inch plank was only four months), and out of 1,800 square yards I have had to relay only 260 yards on account of hammocking, and this on the first batch laid; with cedar, oak, pine, ash or elm there would have been no hammocking at all. It is easily prevented by dipping the blocks in coal tar after treatment, or laying them diagonally. I laid the bridge blocks with one-fourth inch joints. Hereafter I will immerse the blocks in liquid asphalt or creosote, and without any joints at all.—*Northwestern Lumberman.*

GERMAN FORESTRY.

At the meeting at Cincinnati last year of the American Forestry Congress the following communication from Richard Von Steuben, Royal Chief Forester of the German Empire, was read.

FALKENBURGH, near Dommitzsch,
District of Torgau,
March 11, 1882.

MOST HONORED SIR,—I thank you most sincerely for your cordial invitation to the opening exercises of the National Forestry Association. It is, however, to my greatest regret, impossible for me to accept the same. Irrespective of all personal considerations, I am bound here by the onerous duties of my position as an officer of the King; for a trip so far and time consuming, I would have to crave leave of the Minister, which I cannot do so soon after the long leave of absence given me last fall, especially not during the planting season, when the superintending officer can least be spared.

I regret most exceedingly that I cannot attend the opening exercises, since it is certain that your Association will be productive of much good to the whole country. During my stay in the United States last fall I had occasion to discuss the question of the rapidly growing necessity of introducing a regulated Forest Government in order to prevent future calamities which must undoubtedly result from a reckless destruction of the forests. Even the Honorable Secretary of the Interior, at Washington, honored me with a consultation on the subject.

There can be no doubt that every country requires a certain quantity of well stocked woods, not only to supply the demands for building material and fuel, but more especially to secure suitable meteorological conditions, to preserve the fertility of the soil, and out of sanitary considerations. The ratio of the minimum quantity and judicious local distribution of the indispensable forest to the aggregate area cannot be expressed by a universal rule, but the same can only be approximated by scientific investigation. Above all things, it is essential to prevent forest destruction where such would injuriously affect the fertility of the soil. It is important, then to preserve and to cultivate judiciously those forests which stand at the head-waters and on the banks of the larger streams, because through their indiscriminate destruction fluctuations in the stage of water, sandbars, and inundations of arable lands are occasioned. It appears also necessary to preserve and properly cultivate woods in quicksands, or on the summits and ridges, as well as on the steep sides of mountains, along the sea coasts, and other exposed localities.

In Germany, and especially in my more narrow bounded fatherland, Prussia, it is regarded as of the greatest importance, not only to preserve the forests already there, but to extend them as much as possible.

In the National Appropriation Bill large sums are set apart for the purchase of such lands as are unfit for cultivation, and for utilizing the same by planting trees.

In the German Empire 25.7 per centum of the aggregate area is occupied by forests—that is, 13,873,065 hectares out of 53,074,041 hectares. *In Prussia the percentage of wooded land is* 23.4 per centum of the entire area—that is, 8,124,520 hectares out of 34,750,903 hectares. Of the Prussian forests about one-third belong to the State, to wit, 2,648,892 hectares, which produce a gross income of about fifty five million marks. The Government foresters come within the province of the Minister of Agriculture and Forests. At the head of this department is the Chief Master of the Forests; in each governmental district is the Forest Master, who serves as a member of the Governmental Commission, and the entire forest area is divided into 680 principal forest districts. Each forest district is separately valued, and for each separate part regulations are devised, which are strictly followed, thus attaining the chief object, of so regulating the annual amount of wood-cutting that a continuous gain in material and money is secured, and even increased. The forest government is devised with the minutest detail, and may well lay claim to being termed exemplary, it strives not only to utilize the forest as a source of income, but rather are the Government forests used to continually satisfy the requirements of the country.

In order to obtain a situation as Government officer of the forests, a course of study of sever-