An Illustrated Booklet Depicting the Nature and Magnitude of One Phase of Michigan's Gigantic Lumbering Industry. Functions of Log Marks and Methods of Use Together with a Description of the Operation of Boom Companies During the Height of the Pine Harvest.

Compiled by Workers of the Writers' Program of the Work Projects Administration in the State of Michigan

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-their function and use during the great Michigan pine harvest

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FOREWORD

MICHIGAN'S early history and development, as well as that of adjacent states, was influenced materially by the industry that utilized the timber resources of the state. Much of the wealth in the forest was extracted quickly by the lumber industry, supplying work to the pioneer, in addition to capital and building material to develop farms and villages.

Log marks were an essential part of that lumber industry. They were the outposts of law and order in pioneering communities where social controls were often weak. Stamped on a log, they carried the inviolate right of ownership of property on every stream and pond in northern Michigan.

Michigan has harvested most of its virgin timber crop, but it will not be many years, as measured in the life of a state, before logging and milling again will be a common sight and an important part of the state's economy. While the log mark will never return to occupy the important role it once did, it undoubtedly will always be called upon in various ways to identify raw forest products.

A permanent record of log marks and of the industry that uses them is highly desirable. Hence, Michigan State College gladly accepted sponsorship of the WPA Writers' Project for this state-wide study and herewith publishes the results.

PAUL A. HERBERT,
PROFESSOR OF FORESTRY,
MICHIGAN STATE COLLEGE
Of the many undertakings that have been assumed by the Michigan Writers' Project, none has occasioned such in-the-family excitement and enthusiasm as the preparation of 'Michigan Log Marks.'

Here was a subject so colorful, so vivid and vital to the Michigan that was, that it struck quick response in the hearts and minds of all those works assigned to it. County records that had been forgotten for a generation and longer were unearthed. Many a county clerk, infected by the researcher's zeal, helped dig down through piles of dusty, neglected volumes until the log-mark register was at last brought to light. Then followed hours and days and even weeks of copying. The legal history of the state was searched for information on the genesis and scope of booming companies. Old newspaper files and yellowed lumbering company records were combed for the statistics without which the story would have lacked conviction. Oldtimers were interviewed in scores of places. This phase of the work was done during the winter of 1939-40 and, because there is no travel allowance for research workers, thousands of lonely, snow-banked miles were covered by men and women on foot or hitching rides so they might get by word-of-mouth some of the detail that enriches the narrative. In remote farm houses, in luxurious offices of long established firms, in county infirmaries men were located who had something to tell of which there was no written record and without which the tale would have lacked authenticity. One up-state tavern was found where the nucleus of the clientele was a group of withered, bent and broken oldsters who a full half-century before, had been the swaggering shanty boys and roaring river hogs who took the Michigan pine. Some of the enlightening details which they divulged, and which otherwise might have died with them, are recorded in the following pages. No corner of the commonwealth was left unexplored.

Meanwhile, in the Detroit office the writing staff was ransacking the literature of the pine era, getting logging technique firmly in mind, soaking up the color and lingo of another day so they might work up the research material intelligently. They immersed themselves in the atmosphere of that brave past until the assistant supervisor in charge was moved to remarked:

"Any morning, now, I expect to see this gang come to work with their pants staggled and ready to take the town apart!"

Everyone concerned, from the most remote field worker to the drafting department, had the conviction that they were making a real contribution to the history of the state, and those of us who watched them work and gave some advice and a little direction now present the results of their efforts with the happy conviction that it's a good job, well done!

HAROLD TITUS,
STATE SUPERVISOR,
MICHIGAN WRITERS' PROJECT
Log marks were to Michigan what cattle brands are to the grazing states: symbols of order in a romantic industry that would have been chaotic without them.

On the open ranges of the West, cattle graze in multitudes in intermingled herds, and each owner claims his stock at round-up time by the registered brand identifying his property.

In Michigan, billions of board feet of pine logs were cut from fabulous reaches of forest by thousands of operators. They were transported to hundreds of mills on the bosoms of a few great streams, and sorting at destination was made possible by the mark stamped on them before they were entrusted to the confusion of spring-swollen waterways. The

Log marks pictured throughout this booklet are authentic reproductions registered in various Michigan counties.
The log mark, recognized by law and respected by fight-loving men, was the symbol that created order in the rampaging, Herculean task that was river driving.

The tradition behind log marks is old. In early Colonial times, Queen Anne's Surveyor General marked with a "Broad Arrow" and attempted to reserve for the Royal Navy the finest pines of New England. Lumbermen, aggressive and acquisitive then as ever since, disregarded royal attempts to appropriate American property. Efforts to enforce the Broad Arrow policy, though unsuccessful, aroused such resentment that the incidents formed part of the background for the American Revolution. Lumbermen, however, continued the policy of identifying ownership of logs by hacking or stamping symbols upon them, and much later, when Michigan's waterways began to writhe with their burdens of logs, the English tradition was still strong. Michigan's first log mark law was patterned closely after that of the English, and log marks numbering thousands, widely varied as to design, were colorfully interwoven in the patterns of the pine harvest.

For many years, including the earliest logging era in Michigan, log marks were cut into the bark by ax, and, of necessity, such hacks, or bark marks, were limited in design to patterns of straight lines, simple initials, triangles, squares, and combinations of these.

Logging on a rapidly increasing scale began about 1840 to create in the state complex problems of operation that demanded solution. On the Muskegon River, although only the lower reaches were at first used to float logs, many operators made common use of the stream to get their logs to mill. Serious questions often arose concerning the similarity of bark marks. By 1842, the Michigan Legislature answered the need and enacted a law requiring log marks to be registered in the county where the logs were to be manufactured into lumber. The statute followed the plan of an English law of 1692 intended for the protection of New England lumbermen.

Before 1850, lumbermen of the Muskegon Valley found a solution for another angle of the problem, which eliminated much of the confusion and high cost of duplicated efforts in river driving. An arrangement was effected whereby a mutual drive was made whereby a mutual drive was made, the force of rivermen being assembled from the crews of all participating operators. However, the task of sorting logs for the growing number of mills, once the river's end was reached, was still unorganized and continued
to be a source of costly confusion. Furthermore, some of the owners of land bordering the streams claimed prior water rights and tried to profit from them.

A lawsuit concerning rights on Pine River in Saint Clair County brought the question into court, and in 1853 a decision was rendered. It was held that a stream with a capacity for flotage was navigable; that all persons using it had equal rights. The consequences of the decision are incalculable, because it created a legal precedent upon which many court cases important to the state have since been decided and upon which others are still being argued. To the lumbermen, it meant that they could continue to float logs without interference from land owners; to Muskegon River operators, it meant that timber along the stream, all the way to Houghton Lake and beyond, was available for their mills; and to Saginaw Valley lumbermen it meant that the far reaches of the Saginaw River's tributaries, where huge areas covered by America's finest cork pine had already been bought up, were ready for invasion by the ax. More and more logs splashed into the rivers; hundreds more marks were added to the records.

Out of the efforts of Muskegon lumbermen to cooperate in getting logs from forest to mill, the Log and Mill Owners' Association evolved. Formed in 1852, it was supported by assessment according to value of the logs handled. The work was managed by a committee of three men, who succeeded in reducing transportation costs but left the responsibility of sorting marks to mill owners.

In 1855, the state legislature passed an act "to provide for the formation of companies for running, driving, booming and rafting logs, timber and lumber, and for regulating the flotage thereof." Under its provisions, a booming company could contract with owners to run their logs, and could also charge other than contract owners for logs mingled in the drive, intentionally or otherwise. Bark hacks were still common marks, and not easily distinguished in the hasty turmoil of the drive, and had become a too common practice on the part of non-cooperating owners to spill their logs into the big drive, thus forcing others to transport them.

Under the 1855 law, the Muskegon cooperative group was absorbed by the Muskegon Lumbermen's Association, the first full-fledged booming company of Michigan, authorized to control the delivery of logs from forest to mill. Taking full advantage of its position, this association contracted with able boss rivermen to handle driving and sorting crews and gave them full reign over processes involved. Rugged and resourceful, rivermen had abilities that set them apart from others, and their constant inventiveness resulted in efficient accomplishment of a task that yearly grew in magnitude. It was in 1860, when A. B. Furman and George Arms undertook the sorting, rafting, and delivery of logs to mills, that Arms developed the smooth-working sorting gap that later became a standard part of booming practice in Michigan. The log mark retained its place as the symbol of order in the constant war against confusion.

Over in the Saginaw Valley, the development of driving and sorting processes, like that of Muskegon, found similar solutions for various problems. The Tittabawassee was the big stream of the area, and on that river in 1856 Joseph A. Whittier built a boom for Charles Merrill and Company, who furnished booming services to Tittabawassee operators from that year until 1864. An idea of the size of the task may be gained from a statement of the amount of timber boomed during the eight years: one billion seven hundred million board feet, rafted out to Saginaw mills from the Tittabawassee alone, averaging probably not more than 200 feet to the log.

These streams were the proving grounds for the machinery of order. On the Muskegon and the Tittabawassee, log marks and the mechanical aids for their sorting were tested in large-scale use, and the development of an immense industry began. Laws necessary for smoother operation, enacted by the legislature highly sensitive to their needs, simplified the procedures by which lumbermen worked throughout the state. It was found, for instance, that bark marks, no matter how clear or simple, could not be sorted
quickly enough. Logs, coming down rivers in such numbers that they covered the water for miles, had to be sorted, rafted, and sent to sawmills immediately to make way for more and ever more.

Even though the hacks (also called bark marks, water marks, or side marks) were placed on the "light side" of the logs—the side uppermost when the logs floated—or were marked on two sides, they were never satisfactory. Besides being limited in design and varying somewhat according to individual wielders of axes who cut the marks, they slowed up sorting. To read the marks, it was frequently necessary to turn logs over in the water. Thus, in 1859, a law was enacted to require owners of logs floated in the Muskegon or its tributaries to mark the ends of their logs in a distinctive manner and to register such mark in Newaygo and Muskegon counties. The end marks were far better. They were stamped into the log ends with heavy marking hammers, the whole design being raised from the striking surface of each hammer in such a way as to embed the outline deeply into the end of the log with one blow. Each end was thus marked in several places, so the brand was always easily visible.

The 1859 law had provisions also to deal with log thievery. So many logs floating freely, representing easy money, were a constant temptation to the unscrupulous. Marks were often obliterated in order to give stolen logs another brand, and the law had loopholes that weakened its enforcement. Revised in 1867, the provisions were extended to cover valleys of rivers flowing into Lake Michigan, except the Kalamazoo, and later revisions strengthened the statute and broadened its scope.

Booming companies found the 1855 enabling act failing them in court test. Several provisions having been declared unconstitutional, the force of contracts of companies operating under the act was invalid set. A new law was necessary, and this was passed in 1864; it was a thoroughgoing document in which detailed instructions were given for forming and operating corporations for booming purposes. It gave boom companies full power of contract, and, together with added legislation for log mark regulation, made them in practice semi-official agencies for enforcing log mark registration requirements.

This was the backing that lumbermen needed. The years of feeling out the legal limitations of Michigan logging were past. An industry straining with energy found the doors wide open. The water roads from rich forest freed of entangling obstacles. The little symbols of order, log marks, were fully equipped to defend the rights of their owners.

On the Muskegon, the Lumbermen's Association was superseded immediately by the Muskegon Booming Company, a $40,000 corporation, which proceeded to raft out and deliver 96 million board feet of logs its first year. On the Tittabawassee, Charles Merrill and Company gave way to the Tittabawassee Boom Company, capitalized at $50,000. This corporation, which was to become the leader of all boom companies and to handle during its life more than 11 billion board feet of timber, rafted and delivered, in 1864, 90 million feet in logs, leaving 6 million feet in its boom. After 1864, the pine logging business became such a giant that for more than 40 years the name of Michigan was a synonym for pine lumbering.

Pine logging divided its fields of operation naturally between the valleys of main rivers. Each booming company confined its work to one river, and owners of logs floating them on that river were required to register their marks in counties through which the stream passed. Thus, the work can be followed by observing the mark registered and examining the manner, place, and time of its use. The log mark kept in order the pell-mell rush of pine logs down the tributaries of the Saginaw River—the Tittabawassee, Cass, Flint, Bad, and Shiawassee, each of which had its boom company. Not so complicated were the organizations of other natural regions. North of Saginaw Bay, the Rifle, Au Gres, Au Sable, and Thunder Bay rivers each had separate organizations. The Muskegon, Pere Marquette, Manistee, and rivers of Grand Traverse had differing practices to make the chase of the log.
mark more interesting, and the Upper Peninsula sets itself apart by having fewer marks to follow, inasmuch as few major inter-county rivers threaded the area. Yet everywhere, log marks became, not only devices of orderly transportation of timber from forest to mill, but representatives of law in maintaining equities among the men who harvested timber.

THE MEN WHO USED THE LOG MARKS

The world in which log marks were intimately known was a lusty one, vibrating under the impact of brute force. Loggers, as more than one has observed, were men of unusual physical characteristics and accomplishments. In a work demanding great hardship and exhaustive effort, the logger's life frequently depended upon catlike agility and precision of movement. He not only thrived under, but reveled in, the conditions of an occupation beside which all others of the era seemed spiritless and drab.

His language was his own. Generally uneducated in the orthodox sense, occupied with work entailing feats of endur-
ance and skill, he lived almost exclusively with others of his kind, without softening influences. His apparent hardness was often belied by generosity and sympathies that betrayed a richly human heart, but the typical Michigan lumberjack was indisputably rough and boastful, and his choice of words reflected a desire to be known as the toughest man alive. He roamed the state, working for one outfit after another.

The boss lumbermen and their foremen ("bulls of the woods," in lumberjack lingo) shared the romantic atmosphere created by the lumberjack: in many cases, in fact, contributed largely to it. More than one strong expression of a boss lumberman has come down through the years, and, in such a time of language creation, it could hardly be possible that log marks and their most common names would be prosaic. Simple letters and numerals, to be sure, were not to be avoided, as accompanying illustrations show, but dominating the field were unique symbols that carried meaning than met the eye, and even letters were given heightened interest by unusual arrangement and pattern. Plain letters, when used, were given imaginative names. The reversed letter "Z", for instance, was a "square snake," and "K" on its back with a curve over it became a "flying K."

Besides the common names by which illustrated marks were known at offices of registry and at sorting gaps, river knovvn for instance, was a "square snake," and "Double Spar" as for his certain knowledge of every angle of lumbering, was hired by the operator, a lumberman who may have been his own woods boss in earlier days. In the boom times, an operator sometimes had a dozen camps going simultaneously. The woods boss, or foreman, sent a gang of swappers and wood butchers (carpenters) into the woods to break a tote road and make camp. From trees cut on the spot, the wood butchers built several log buildings: the combination cook camp and mess room, often large enough for a hundred or more jacks to eat at once: a huge shanty, or men's camp, lined with rough, double-decked bunks: another cabin for office and stores: a barn and blacksmith shop.

Even while camp was in the making, swappers were busy clearing and grading a road from the river back into the woods, making sure of the easiest possible grade all the way, and seeing to it that the road would be accessible from all parts of the cutting by skidding roads rough paths over which logs must be dragged on travois (skidding sleds) to the skidways. Through the early fall, the camp seethed with activity: parapernalia and supplies were brought, tools readied, lumberjacks hired: with the coming of snow, the nearest pines crashed to earth, and, clean of limbs and cut ready, lumberjacks hired; with the coming of snow, the nearest pines crashed to earth, and, clean of limbs and cut to standard length logs, were laid across skids upon the bank of the river. This was the beginning of the dump or rollway, and the first logs were ready for the scaler and the marking ax. The camp was in production.

Before lumber could be made from trees, great preparations were necessary. First on the scene, perhaps by many years, a cruiser or timber looker, surveyed the pinery for prospective buyers and made notations of the lay of the land, with reference to the stream and ease of getting logs to it. A woods boss, selected as much for his ability to handle unruly lumberjacks as for his certain knowledge of every angle of lumbering, was hired by the operator, a lumberman who may have been his own woods boss in earlier days. In the boom times, an operator sometimes had a dozen camps going simultaneously. The woods boss, or foreman, sent a gang of swappers and wood butchers (carpenters) into the woods to break a tote road and make camp. From trees cut on the spot, the wood butchers built several log buildings: the combination cook camp and mess room, often large enough for a hundred or more jacks to eat at once: a huge shanty, or men's camp, lined with rough, double-decked bunks: another cabin for office and stores: a barn and blacksmith shop.

With completion of the buildings, the carpenter worked on the sleighs, each runner of which was several times the size of ordinary farm sleighs and shod with heavy iron shoes. Across the runners, extra heavy tie blocks were laid and, over these, bunks sometimes as long as 16 feet measured the width
of the prospective load of logs to come down the road from the woods to the rollway. The height of the load was measured only by the caution of the loaders, and observers, not acquainted with the consummate skill with which the load was built up, often swore that loaders never heard of caution! Ten thousand board feet in logs was a not uncommon sleighload, and astonishing figures were recorded in some single hauls. Therefore, the sleigh was massive and as strong as a railroad car.

With the first good freeze, road sprinkling began. The road was to the lumber camp and its operations what Main Street is to a town; it was paved with solid ice, sprinkled each night for additional strength, tended constantly, and grooved for the runners of loaded sleds that traveled it. Back in the forest, gangs worked far enough apart not to interfere with each other's smooth operation. While sawyers divided the great trunks into sawlogs, teamsters hooked skidding tongs to logs already cut and dragged them on travois down the skidroad to a loading spot.

Fallers, having chopped a great notch across the trunk of a standing pine, nicely calculated to govern its direction of fall, attacked the opposite side with a crosscut saw. As soon as the saw had cut deeply enough to bury itself in the bole, wedges were driven into the cut, or kerf, behind the blade. The purpose of the wedges was two-fold: to keep the saw from binding and to start the tree falling in the desired direction. Soon, an almost invisible tremor of the tree was accompanied by a slight crackling. Swiftly, as a faller straightened, cried out "tim-ber-r-r!," the other's saw handle was removed, the saw pulled through the cut, and both men got away from there. The crackling loudened to reverberating reports that were lost in a mighty crash of broken boughs as the giant fell. Work, momentarily halted within earshot of the warning cry, resumed. A steady supply of logs came to the loaders from various directions. Load after load went down the road to the dump, rollway, or landing.

Week by week during the winter, the accumulation of logs grew along the river bank, and the edge of the forest receded, leaving broad areas of stumps and brush—the slashings that were to become the great pine plains of Michigan. Day by day, the scaler recorded the board feet of lumber in each log delivered to the rollway and swung his marking ax several times upon its ends. If a log end was too far into the pile to be reached with the hammer, he used a long bar with a marking iron on its end. If his company used a hack, or river mark, it was already placed by the skilled axmen in the woods. Frequently, practice included use of both bark marks and end marks. A race against time developed, for the camp was to have its estimated cut banked on the rollway, scaled and fully marked, and ready to float with the first spring thaw. Thereafter, every one of the thousands of logs had to be entrusted to the water mixed with other thousands from many other camps along the river, and the lumberman confidentially gave to his log mark the guardianship over the whole product of months of work by his entire crew of hard-driving jacks.

As with logging the woods, so it was with river driving; large-scale operation required much preparation. Before logs could be driven efficiently, the waterway had to be cleared, and the driving forces organized. The year before a drive was to be made, a crew of men cleaned and deepened channels in the stream to be used and freed its margin of rocks and trees that might catch logs and create a dreaded jam. Often dams were constructed in the headwaters to control the flood stages, so that a series of artificial freshets might be available to carry the logs, rather than one big natural flood that might leave behind it much valuable timber to wait for the next year's flood.

The booming company had full control of and responsibility for the drive, and its organization was perfected long before the spring thaw came. Generally many of the logging camp crews were hired for driving, since among them were fine rivermen, and they were on the spot where and when needed. However, as logging later tended to become a year-
round activity, some riverhogs developed special skills and became full-time employees of booming companies. Plenty of work was left for seasonal workers. Many sackers, for instance, were required to “bring down the rear”; that is, to keep coaxing back into the current the straggling logs that caught on the banks or were left high and dry by receding freshets.

A northern Michigan logging scene on a small stream. The dam holds a supply of water and when it is suddenly opened, the logs move on.
far enough to insure their travel with the current. The drive was under way and would be strung out, well before the first few miles were passed.

For that grand spectacle, the breaking of the rollway, people traveled many miles. As breath-taking drama, it had no rival. All realized it was dangerous labor, and that many workmen had been mangled by plunging logs; so it attracted onlookers wherever the place could be reached.

On the drive, the vanguard were the pick of the rivermen, making up what was called a jam crew, because the beginning of a jam downstream required quick and expert work to break it quickly before the remainder of the drive could pile up and cause serious trouble. Strung out along the drive, other rivermen watched floating logs closely, keeping space between them as best they could. Somewhere in the middle of the drive, a flyboom floated. A flyboom was made of long timbers chained together to be strung across the stream and fastened to trees on the bank whenever trouble threatened below. At a cry, "Jam below!", relayed upstream, jacks assigned to the flyboom strung it across and stopped the flow of logs. Bringing down the rear, and scattered along the banks, sackers urged the "draggers", or laggard logs, into the current.

Every riverman carried a peavey, the classic implement of his calling. Heavy and cumbersome to anyone else, in the hands of the skilled it was an efficient tool, highly adapted to a variety of logging uses. Its handle, about twice the length of a baseball bat and as big around at the lower end, tapered gracefully upward to a slenderness that was easy to the firm grip of a jack. Balanced strength focused in the conical iron collar that terminated in a sharp spike several inches in length. The one moving part, a big hook, fastened to trees on the bank whenever trouble threatened below. At a cry, "Jam below!", relayed upstream, jacks assigned to the flyboom strung it across and stopped the flow of logs. Bringing down the rear, and scattered along the banks, sackers urged the "draggers", or laggard logs, into the current.

Along the course of the stream, at many points, other rollways were broken in. One operator may have had several camps and several landings. He had different marks to show the sources of his logs, and sometimes grade reference marks besides. Many other companies spilled their logs into the same river, and, by the time the drive approached the booming grounds near the river's mouth, it was a grand mixture of property carrying a hundred or so different identifying marks. The river, widening considerably in its downward course, might have an expanse of surface for miles above its mouth. Rows of piles held the "boomsticks"; these boomsticks were long, flat timbers chained end to end, making a virtual sidewalk two feet or more in width on the surface of the water. Closing navigation to the logs, a long gate-boom was strung diagonally upstream to the far bank from the end of the main boom, diverting also into the booming grounds a surface current that helped carry the logs into the enclosure. Upon a log when the tool was thrust like a harpoon at it. When rolling logs, the handle formed a simple, strong lever pulling against the hook, with the spike for a fulcrum.

Floating down river in the rear of the main drive, a huge raft called a wanigan carried a cook shanty and supplies. Sometimes a well-built scow and sometimes a rough raft of logs with a raised deck, it was meal and repair headquarters for sackers and any others within reach. However, rivermen in the lead of the drive were usually too far away to get to the wanigan. Lunches were sent to them, and they slept and ate where, when, and as they could. They carried with them some rations, blankets, and often several sticks of dynamite, ready for use in breaking jams, besides their tools. Occasion will be found later to mention other details of the wanigan, for it is an essential in the picture of river driving in most parts of Michigan.

The booming grounds were an enclosure near the river's mouth. Rows of piles held the "boomsticks"; these boomsticks were long, flat timbers chained end to end, making a virtual sidewalk two feet or more in width on the surface of the water. Closing navigation to the logs, a long gate-boom was strung diagonally upstream to the far bank from the end of the main boom, diverting also into the booming grounds a surface current that helped carry the logs into the enclosure. Upon a log when the tool was thrust like a harpoon at it. When rolling logs, the handle formed a simple, strong lever pulling against the hook, with the spike for a fulcrum.
Thus, when the drive reached the booms, many of the river-hogs were done. Other employees took over, and, while they were doing so, the logs were floated into the booming grounds, often completely filling the enclosure.

Sorting the marks, rafting the logs bearing them, and delivery of rafts to each owner's mill was the work remaining. The big enclosure ended in a bottle-neck formed of more boomsticks and leading to many smaller enclosures, the pocket booms of individual log owners. The throat of the bottle-neck was the sorting gap, along which the sorters and checkers stood, and the narrow channel leading along the shore side to the pocket booms was the jut. Pocket booms, in which logs were assembled and made into rafts by rope pinned to the logs, were attended by pin whackers, who were youngsters or light-weight men. Since it was necessary for the pin whacker to stand on the log, sometimes small, to drive its rafting pin, weight was a hindrance to efficient labor.

As each log entered the sorting gap and was poles along by helpers, it passed between two sorters standing on platforms. One of them was a head gap sorter, and he it was who knew more marks than the Old Man himself. What he could not recall instantly, he learned from a notebook always carried, in which memoranda of new marks and assignments were kept up to date. When the log mark was seen by either sorter, it was called out to the pin whackers, thus: "A. T. Bliss — one!", or "Hay — two!", or "Tom Merrill — one!", translating the mark into the name of its owner. The pin whacker's knowledge of log marks was limited, but it was essential that he know whose logs he was rafting for delivery to a certain mill.

Inasmuch as it was necessary to control the flow of water for log driving, booming companies built and operated dams on the headwaters and spent large sums in keeping streams navigable; consequently, the state law gave them a high degree of control over the flow of water.
of control over flottage, allowing them to collect toll for use of the streams.

The multitude of log marks became so complex and varied in the years of heavy production that it is said one booming company had a standing offer of $50 to anyone who could design a mark of three letters in any arrangement that had not been used before. Laws were constantly improved to control assignment of log marks, variation of marks in series to identify lumber grades and places of origin, mutilation or forgery of marks, and other violations of rights of marked property. The log mark gained importance with the growth of the industry.

But the mark protected more than the one who stamped the log as his own. At times, it was a clue to the detection of unscrupulous tactics. In his desire for logs, an operator sometimes cut timber he should have left alone. Logging a "round forty" and clearing the homesteaders' backyards for them were only commonplace forms of thievery, but logging lands to which title had been obtained fraudulently, or getting out government-owned timber were practices fraught with peril of punishment.

Of the many cases on record, certain of those of 1873 will illustrate. In that year, the Cass River Boom Company was served with notice to hold the logs of J. F. Bundy, subject to further orders from the state, and similar notice was given the Tittabawassee Boom Company concerning logs of Bennett & Thompson. The seizures were occasioned by frauds in the Land Office under administration of Commissioner Edmunds. The logs were cut on lands sold by Edmunds as State Swamp Land, but which were in fact State Asset Lands set apart for a special purpose. A special commissioner was sent to investigate, spot all logs cut on state land, and assume ownership. Seven hundred thousand feet of pine logs were identified by their marks and seized in one of the cases.

Of course, the delays that played most havoc with log transport were those due to lack of water for flottage. A Port

A group of rather unusual log marks.


Huron newspaper reported in May 1872, that a drive on Black River, containing some 10 million feet of logs, could not come down because no more flooding was possible, efforts to get a "head" at the dams having failed. It was a dry
season, and great difficulties were experienced in driving all over the state, with the prospect of many idle mills. A jam on the Tittabawassee was reported to reach "nearly up to Edenville", with the boom company making great efforts to keep clear of the Tobacco Forks.

Another newspaper story of the same season related that Saginaw lumbermen were despondent; that the expression, "hung up", was much in use; that a large portion of the log crop would probably lie over until the next year. A compilation showed logs totaling 70 million feet hung up, and an estimated $1,100,000 kept out of circulation by the drought. It was reported that 12 million feet of pine were hung up in the Alpena region. Under such conditions, small operators frequently failed and were "frozen out" of business, companies with greater resources buying their logs cheaply. That is one of many reasons for assignment of log marks in use. The assignments were registered, and the marks involved not used again, perhaps figuring many years later in an assignment to a salvage operator.

III

THE SAGINAW

The watershed of the Saginaw included luxurious pineries in the valleys of its several great tributaries. Harvest of these logs involved operations of great magnitude and complexity.

Contributing largely to the flow of sawlogs to Saginaw mills, the Cass, Flint, Shiawassee, Bad, and Beaver rivers each had separate booming organizations, the Cass being particularly noted as the source of much of the nation's finest cork pine. The Tittabawassee logging business, giant of the lumbering world, included booming operations on the Pine, Chippewa, Tobacco, and Molasses rivers, and these waters
were crowded annually by increasing amounts of pine that reached a staggering peak in 1882.

First important personage upon the Michigan scene was David Ward, landlooker, speculator, and operator, who ranged the state searching out pineries long before boom companies were even thought of. He it was who secured rich stands in St. Clair county for Charles Merrill, Maine lumberman, drawing him to the new country to found a dynasty of timber barons. Ward was the cruiser who secured large holdings for many of the big operators of the Saginaw watershed and gained for himself, from many years of timber looking, immense areas of forest. It was customary to pay the looker in land—a quarter of that bought up for his employers. Although Ward became a logger and was once acknowledged timber king of Michigan, his holdings were widely scattered, and much of his pine was logged by associates. Consequently, few of his marks have turned up in searches of many records. It is certain that many marks here presented were used on Ward logs, perhaps identified by variations of marks in series, or by marks owned and registered by his associates.

As early as 1830, there were a few crude sawmills on rivers of the Saginaw Valley: The Rufus Stevens mill on Thread River, near Flint, and that of Rolland Perry and Harvey Spencer on the same stream at Grand Blanc. Gardiner D. Williams, fur trader, was probably Saginaw’s first lumberman: however, he, with Harvey and Ephraim S. Williams, built the first steam sawmill on the Saginaw River in 1834. It was a single gate-saw affair with a capacity of 2,000 board feet per 12-hour run. Hasvey Williams built a muley saw, in 1836, for Mackie, Oakley and Jennison, on the east side of the river. Other mills established with passing years—muleys, sash saws, and finally, the circular saws—reached a total of 29 by 1854, with an estimated capacity of 100 million feet a year. Capital gravitated to the region like water down a hill.

Eddy, Murphy, Gubtil, Leadbetter, Burt, and Bliss, and the fifties brought so great an increase in operators that confusion on the drives already threatened trouble. What marks were in use then, it is impossible to determine, for disastrous fires of the time erased many records. Protection against forest fires was meager, and county seats, mills, and whole milltowns were wiped from existence by various holocausts. It is only through fortunate preservation of Tittabawassee Boom Company records that many of the early log marks of the region were saved. Numerous lumber companies disappeared with the turn of the century, leaving nothing for researchers to find but their log marks, necessarily kept in boom books.

It is apparent that Charles Merrill & Company dominated the Saginaw field in the times when the record first becomes clear. The “Circle M” mark of that concern represented the interests of its big boss. From 1856 to 1864, already mentioned as the period during which the company controlled the Tittabawassee, it boomed out 1,700,000,000 feet of logs to Saginaw mills. It is probable that its river drives included, besides those of many smaller loggers, logs of all the operators who subscribed to stock in the Tittabawassee Boom Company. They were owners of land widely spread over the whole Saginaw Valley, and they were associated in varying combinations for convenience in exploiting their holdings. Thus it is safe to assume that theirs were the most commonly used marks. They were the timber barons: they and their heirs reigned.

For the Merrill boom, the sorting arrangement consisted only of the long boom enclosure with smaller booms along its lower end, into which sorters drew logs for which they were looking. Because the greater volume of foliage demanded far more efficiency, the Tittabawassee boom, which superseded Merrill’s, was of the Muskegon type—the long booming ground ending in a sorting gap, followed by a jut lined with pockets.

Articles of association of the Tittabawassee Boom Company, drawn up in 1864, included in its list of stock-

During the peak years, while more than 100 sawmills lined the Saginaw River for 10 miles, reaching from Saginaw down through Bay City, 12 miles of booms were owned by the Tittabawassee company. It employed hundreds of rivermen and, in one year, spent $21,000 for rafting rope. On the Tittabawassee, the peak year was 1882, when the output rafted exceeded 611,000,000 feet. No other logging stream has ever floated such an enormous quantity of logs. During the years of booming by Charles Merrill & Company and the Tittabawassee Boom Company, more than 11,500,000,000 board feet of timber were rafted out—probably more than 100,000,000 logs—and much pine was cut both before and after the span of operations by these companies.

Over on the Cass, where many of the same timber barons operated, the Huron Log Booming Company, also organized in 1864, was capitalized at $25,000. The first year of operation, it rafted 40,000,000 feet of logs, requiring three miles of booms to handle the task. The peak year on the Cass was 1872, when 104,000,000 feet were boomed, but thirteen years later the cork pine there had been nearly all harvested.

Many stories concerning the log mark are related by old timers. One old lumberjack tells of a man who worked for a prominent camp on the Tobacco River, and who was never caught at the thievery he practiced. When the camp crew disbanded in the spring and rollways had been broken out, he hired several others to help him haul out of the water here and there many of the best logs to be found, obliterate the marks or cut the log ends off, and stamp them with his own mark. Selling the re-marked logs, often to their original owners, he was so successful in his enterprise that he made a fortune.

A story of the Chippewa region is as follows: Frank Reeves, who had purchased several hundred logs from individual loggers along that stream, had his logs marked, while still on rollways, with his company’s “540” mark. W. E. Dennison, who told the story, was then hired to watch over
the deck until it was delivered to the booming company to drive down the river. Daily he visited the landing he guarded, and one morning he heard the sound of marking hammers there. Pushing through cedars toward the scene, he was met by a cursing sentinel, armed with a shotgun, who threatened him with death. Dennison turned back and hurried to report to his employer. Investigation disclosed that the Midland Woodenware Company had also bought the logs in good faith from the same lumberman who sold them to Reeves, and were applying their mark, “W.W. Co.”

A well-known timber thief nicknamed Le Coq worked the Cass River shores, cutting choice pines. On one occasion, he and another man with whom he was working each made up a raft to float to Saginaw. Inasmuch as they accompanied their logs and did not pass them through booms, no marks were required. They tied up to piles at Saginaw, leaving the rafts while they spent the night at a boarding house. Intending to steal the other’s raft in the night, Le Coq slipped out, untied a raft, delivered it to a mill, and returned to bed. Great was his surprise in the morning when the two men came down to the river, for Le Coq’s own raft was not there. The other one was. The wind had moved the logs around, and in the dark he had stolen his own raft.

These, a few of the many such incidents, illustrate practices characteristic of early booming days. They made necessary the revision of state laws for more stringent enforcement. An 1879 act, besides providing penalties for unlawful marking or changing of marks, made liable to prosecution any boomers or manufacturers receiving logs without the consent of owners and gave log owners right to search booms and mills for their property.

Constant litigation between companies and individuals was only part of the picture. Outsmarting the other fellow was an acceptable rule of the game, and every advantage in the chase of profits was taken. Within the complex framework of co-operation, hundreds of little wars added zest to the confusion that was lumbering, and, throughout the period of lumbering, log marks were displayed prominently as ordering symbols within turmoil, always aiding the establishment of justice among men.

Through the long record of court cases involving identification of logs by marks, a stream of liens weaves the story of defaults of wage payments. Unpaid employees frequently filed liens on logs, which thereafter could not be moved or disposed of until the claims, if justified in court, were paid. Liens were made for all kinds of labor performed, including cutting, skidding, hauling, driving, running, rafting, scaling, banking, swampying, scoring, hewing, piling, jamming, and booming. Though necessitating a high degree of cooperative enterprise, the lumbering business was characterized by individual and collective competition that was ruthless, in keeping with a ruthless era. It was every man for himself in the protection of his rights.

Among the tens of thousands of lumberjacks and rivermen of Michigan, many were killed at work annually and scores were seriously injured. Sickness was as common as injuries. For many years, no organized attempt was made to take care of such cases. A log mark memorializes the humanitarian effort to correct the condition, however. In 1872, John W. Fitzmaurice, then associate editor of the East Saginaw Courier, began agitation for lumbermen’s hospitals and gained immediate support. Business men of East Saginaw took action, establishing what has come to be known as Saint Mary’s Hospital, and the Sisters of Mercy entered into the work. In 1878, another hospital was established in Bay City, after which other lumbering centers over the state followed. The policy was to sell certificates (tickets) to the woodsmen and drivers, for $5, which entitled the holders to hospitalization and complete care for a year, whenever hurt or sick. It is claimed that the F. C. Stone “$5” log mark was intended to be a testimonial reminder of the worth of the hospital ticket.

In many of the most active years on the Saginaw River, rafting to the mills from the various booms on tributaries was a battle between raftsmen, those of each river striving
for advantages over others. Open fights sometimes resulted.

The key of operations was the point where the Tittabawassee empties into the Saginaw below and across the river from the mouth of the Cass. Tittabawassee raftsmen, with their advantage of position, could blockade the Cass, Bad, Flint, and Shiawassee by tying out rafts across the channels, causing great annoyance and delays.

The stream below the Tittabawassee mouth was a complete jam of rafts at one time in 1873, containing about 17 million feet. Raftsmen of Cass River, under management of Will Bridges, and those of Bad River, under Tom Cresswell, seized the opportunity to block the Tittabawassee. They moved five rafts down and tied them up across the mouth of the Tittabawassee, necessitating a halt there until the stream could be cleared.

Such competition of course brought expensive delay, and conditions encouraging it could not be tolerated. In 1882, rafting on the Saginaw was organized under control of the Saginaw River Booming Company, and thereafter logs moved smoothly from booming grounds to mills. At the same time, navigation was kept open to a rapidly expanding boat traffic.

In the two decades of greatest activity, log marks increased by hundreds. Families of the barons matured, members entering the field in combinations and singly, until the Saginaw lumber business was a confusing array of companies interlocking at many points. New capital entered from the outside and new business was started by men coming up from the ranks of the workers, or by those gaining a foothold through other occupations. Because the situation was a case of survival of the fittest, or smartest, many of the marks served only for short periods before going out of use or being added to those of stronger firms.

By 1890, together with such old marks as "DORR" and "DAM" of T. E. Dorr & Company, "BURT" of W. R. Burt, "ATB" of A. T. Bliss, "Circle M" of Charles Merrill & Company, and those of Ring, Eddy, and the widow of James Hay, log marks passing through the Tittabawassee boom told the story of changing years. Dorr appeared in the firm of Murphy & Dorr, with many marks, including an "MD" monogram. Eddy ownership showed on the logs in many combinations, such as C. K. Eddy and Son, with various boxed and circled marks and the famous "Square and Compass" emblem; as did Eddy Bros. & Co. with its "Circle E", and as Eddy, Gubtil and Eddy, owning the "Circle circle 3" among other marks. A long string of marks representing Eddy, Avery and Eddy, including "Bar EAE Bar", "Circle Double E", several monograms, and a "Double Diamond".

The old "AR" of A. Rust was in the lists of Butman and Rust that introduced the significant "DOW" along with many jobbers' marks and assignments: and the firm marks of Burrows and Rust omitted its Rust mark, using only the "CLB" of the more active partner. The A. T. Bliss marks were included in a long array of those owned by Bliss, Tyler & Company, among which were "B reverse B", "B Star", and "S Star" marks and many in series indicating jobbers working for Bliss interests. Marks of Bliss and VanAukun also included a star—the "Star O"—besides the peculiar "A%" and "%A", the percentage symbol being read "O Bar O". In this firm Bliss was identified by his old marks "B", and his partner by "EAST". Among C. S. Bliss & Company marks were "K over ID" and Four Arrows", pointing to a common center.

One of the companies having an extraordinary number of log marks in the boom years was E. O. & S. L. Eastman. Most of their marks were simple letter combinations, such as the "SLE" of one partner, "FR Bar ED", supposed to represent one camp, and "B Star A" and "S Star S", were marks characteristic of the period when new letter combinations were difficult to devise. Inasmuch as the firm of Merrill & Ring was one of the biggest operators, its marks included many variations of the original simple letters, boxed, circled, and combined in monograms, series of marks for grade reference and camp identification, and assigned marks. Their
"M" was a famed and familiar stamp and meant Thomas Merrill. D. T. Merrill was known by his "DTM", and E. J. Ring by several distinctive marks.

An example of picture marks of the time is the crude outline of Murphy's "Duck" enclosing an "M". Nerritor, of Melcher & Nerritor, inasmuch as he was a druggist, fittingly chose as his log mark a mortar and pestle—called the "Drug Mixer". Simple symbols were the "Diamond X" of James R. Hall and the "Circle Star" of Gebhart and Estabrook.

J. T. Burnham had a "Turtle Mark", Edward Andrews had a "Bar Box O Bar", similar to a "Hat" mark known elsewhere, and among his other marks was the famous "7UP". Artistry was present in certain anchor marks of Charles and Hall, and the "Circle T HALL" looked like an inverted anchor. The lumberman's chief tool, "AX", was E. F. Gould's, and the humorous "UBET" was one of a great many belonging to Brown and Ryon.

The Tittabawassee Boom Company handled logs for 99 operators in 1890, and of the 2,855,654 logs rafted that year, 1,68,061 were those of Charles Merrill & Company. Merrill and Ring owned 130,677 of them: Bliss & VanAulen, 158,776; C. S. Bliss & Company, 106,906; Eddy, Avery & Eddy, 104,671; Rust Bros. & Company, 155,183; and Batman and Rust, 63,726. These are only sample figures to illustrate the number of logs that required marking. Scaling a total of 304,479,268 board feet, averaging less than 107 feet per log, the decline is shown when contrasted with the total in 1882 of 611,863,000 feet passing through the same booms, and with the average of 200-foot per log long used for estimates of volume.

The decline meant that the Saginaw lumber industry was dwindling. The total cut for Saginaw mills in 1890 was approximately 200,000,000 feet less than the peak of 1,011,274,605 reached eight years before, and the decline was accentuated year by year. It was a matter of bringing down the rear of the forests, as rivermen had brought down the rear of numberless drives of logs. The Tittabawassee Boom Company had been chartered for 30 years, and came to the end of its trail in 1894, having sorted and rafted logs scaling a total of 11,848,549,293 board feet. The total Saginaw cut, from 1851 to 1897, was figured at 22,930,757,551 feet—probably more than 150,000,000 logs.

The remaining task was to salvage logs left behind in the beds of streams and along their banks, and odd lots abandoned by the exodus of the crews. Some salvaging was done by the companies that logged and drove the pine, but most of it was undertaken by individuals and crews as a specialized

Typical river drive scene.
business, necessitating transfer of rights in log marks from original owners to salvagers.

When the flow of logs had subsided, owners of agricultural lands along Saginaw region waterways found accumulations of logs on their property. If log owners were unknown or refused to remove the logs, land owners were authorized to appeal to the county for a sheriff's sale. After a statement of fact, showing that the logs had been abandoned for two years, the sheriff at a prescribed time offered the logs to the highest bidder, and in all cases of record the land owner was the successful bidder. After deducting fees, the remainder of the proceeds of sale, which was usually $25 to $35, was returned to the buyer. A necessary legal procedure, since the logs carried log marks, this routine method gave to the land owner saw logs for the mere cost of keeping the record straight.


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THE NORTHEAST REGION

The pine country north of Saginaw Bay to the Straits of Mackinac, between Lake Huron and the divide, forms sharp contrast to the Saginaw Valley. While Saginaw tributaries flow gently from widespread sources to converge into one outlet, streams from the great central highlands are tortuous and swift, diverging to course south to Saginaw Bay, east into Lake Huron, and north toward the Straits. The land is broken and irregular; the waters cut steep banks through rugged terrain and tumble over rapids.

The Rifle, Au Gres, Au Sable, and Thunder Bay rivers, the Cheboygan and its sources, the Black, Pigeon, and Stur-
geon. all presented special difficulties, and logs that floated upon them carried their marks hell-bent for quick descent, breaking dams and men placed to control them. Operators, lumberjacks, and rivermen surmounted challenging obstacles to get their logs out. The Lumberman's Memorial, raised on the Au Sable, is a monument to their daring exploits.

The name of David Ward recurs in the history of this area as that of the great timber cruiser opening the region to seekers of pine and, later, as an operator. Others had made extensive buys also. Big names showing early on the records are Loud, Alger, Packs of Pack, Woods & Company, Smith, Brackenridge, Potter, Luce, N oxon, Fletcher, Richardson, Avery & Company, George Prentiss, and many others whose marks here appear. In the Cheboygan region, the name of Merritt Chandler was one to reckon with; for he had secured, through the Saint Mary's Falls Ship Canal Company, large holdings on Cheboygan River tributaries.

Organization of booming companies for northeastern rivers followed closely upon that of the Tittabawassee. The Au Gres Boom, that of C. D. Hale of Tawas City, and several in connection with the Cheboygan Slack Water Navigation Company were built in 1867. The Thunder Bay River Boom began business in 1868, and one on the Rifle in 1870. The great Oscoda Boom of the Au Sable was not formed until 1877, but logs had been streaming down for years then. The bays formed by rivers emptying into Lake Huron made excellent booming grounds, allowing the sorting pockets to be built around river mouths, freeing the river channels for passage of logs into the booms, and giving plenty of space for the many tugs to operate. The Hale boom at Tawas City, a six-acre enclosure of pilings, received many rafts from the Au Gres and Rifle rivers, and the place became the chief manufacturing center for lumber of the immediate region.

At Black River village, headquarters for R. A. Alger interests, a spar and mast industry began in 1868 and grew to be the world's largest, supplying New York, Boston, and many other seaports, besides sending great rafts of lumber to Great Lakes ports as far as Buffalo. At Alpena, where the storage boom was located on the south side of Thunder Bay River, one of the many mills was situated on an island in the middle of that stream. On the Cheboygan system of waters, dominated by the Navigation Company, many mills and booms were built on Burt, Mullet, and Black lakes. A problem arose because of the great rapids over which that river dropped after leaving Mullet Lake. This was solved by building a lock and canal, 18 feet wide, 85 feet long, with a lift of nine feet, through which the company annually passed millions of feet of logs and lumber, besides the operating tug boats. A large sluice dam at the outlet of Black Lake took care of a like problem there, controlling the level of the lake for booming logs at the Black Lake mouth of the Upper Black.

The Oscoda Boom Company was typical of those of the whole region. Capitalized at $25,000, later increased to $100,000, it included among its stockholders David Ward, William T. Smith, Edward A. Brackenridge. Woods & Pack, Oscoda Salt & Lumber Company, and Smith, Kelley & Company. Its directors were E. and W. T. Smith, H. N. Loud, Ward, and Brackenridge. The company built and controlled many dams on the Au Sable and had miles of booms at Oscoda and along the lower river. The Dwight interests, organizing the Au Sable River Boom Company, had already improved the upper river. The Van Etten Boom Company, headed by H. N. Loud and with E. F. Holmes as secretary, operated on Pine River and Van Etten Lake, north of Oscoda, employing a tug on the lake and having a force of 40 or 50 men. First officers of the Thunder Bay River Boom Company were Benjamin F. Luce, president, and S. M. Noxon, secretary. There, also, the great difficulty was one of the swiftness of the stream, and many dams were maintained.

As in other sections, many log marks of great interest were lost by fires here, which destroyed records, and, in some cases, where work was confined to one county on short streams, marks were not necessarily recorded. In Alpena County, however, the record is fairly complete.
with 1870, when Folker's & Butterfield recorded yellow, red, and green paint marks. F. W. Gilchrist was identified by white paint daubed on the log, and A. N. Spratt used blue. This was not general practice, however, for a great variety of bark marks and end marks were also registered, including triangle and octagon marks (Gilchrist) and Spratt's "Square Snake."

Nelson LeBlanc, of Alpena, was a lumberjack and riverman for more than 20 years, working mainly on Thunder Bay River waters. His wages as a loader were usually $26 per month and board, and as a riverman he was paid $2 a day. He drove logs on Gilchrist, Hunt, Beaver, and McGinn creeks and on the Little Wolf and Big Wolf, all tributaries to Thunder Bay River, and on the main river and its branches, besides working other streams of the region. Logging camps in which he worked were usually crude, built of logs or rough lumber covered with tar-paper, furnished with double-decker bunks of springy poles covered with cedar boughs. His pillow was his "turkey"—the grain sack in which spare clothing was carried—and many nights he slept with his shoes on and with soaking wet feet, for fear he could not get his shoes on again in the morning. Mr. LeBlanc remembers a tough job of picking a channel through rapids of the "Cheboygan Black" River, and many other difficult tasks of the big times.

While driving the rivers, the men made no camp. They slept in the open air in the blankets they carried. Drivers worked from early morning until after dark, and on these swift streams constant vigilance was necessary. The rocky, winding beds of the streams were certain to hang up the drives in jams, if they were not constantly freed of stopped logs. The general practice here was to install dams every few miles, taking the drive through sluice gates in sections, to keep close control over water and logs. With a sluice dam below a rapids, the shallow could be flooded so that logs were floated over, and, by placing the sluice gate above the rapids, logs and water could be accumulated and sent down in great rushes.

Steam railroads were generally used in this region, spreading out from lumber centers. Because logs sent to mill by rail did not pass through the usual sorting arrangements, the log marks were not needed in many places on each log, and it became usual for marks to be stamped in only one place.
on each end of each log. The Potts mark was plain "JEP", and Loud's was "Circle L". Pack, Woods & Company used a "PW" and other marks, including a "K", either boxed or in a diamond. It is claimed that most of the marks used in Iosco and Arenac counties were never registered, but Charles W. Kotcher registered a pink-paint daub mark used on Au Sable and Pine rivers. T. T. Allen & Company, for use on the same rivers, registered a yellow paint mark and various box marks, besides its "TTA". The Maltby Lumber Company had its initials in varying combinations, with a white mark to use on the Au Gres and Riffle rivers. Another white paint mark was that of Penoyer Lumber Company, and this was known as the "Snowball Mark".

The log mark record of Alpena County, comprising 252 pages when transcribed, includes many of the best-known marks of the lumber business. A. N. Spratt's list, besides the "Square Snake", "Dumbbell", crossed keys and commoner symbols, presents a group, from 1878 and 1879, designed to read the same right side up or upside down. These are "HOH", "908", "906", "SSX", "AXA" (the last letters reverse), "X, lying S, X", "T" (last letter reverse), "E, reverse E", and "010". Some log marks of this kind are found in every region. Frank D. Spratt used only hack marks. "Square Cross", "Long Thirty", "Long Forty", Long Box, Five Hacks, etc. Richardson, Avery & Company's "Circle R" was varied by replacing the initial with numbers for grade reference; Porter and Parmeater's triangle mark enclosed the company initials with reference numbers, and Cunningham, Robertson, Haines & Company's long-familiar log mark was "Circle crossed axes".

A. R. Richardson's property was easily identified by an ox-yoke mark, and George Prentiss & Company's by a hand with forefinger and thumb extended. That firm's series mark was the outline of a heart enclosing numerals. The famed "Pitcher" belonged to Warner & Davis, and the "Single Handcuff" to Thomas B. Johnson. R. D. Taylor, in 1878, used a "Crawfoot", and Smith Brown marked logs with a fish outline. The "Square & Compass" emblem was Campbell Potter & Company's mark until 1883, when it represented W. H. & E. K. Potter. Another well-known emblem was the "Snuff Box" of E. O. Avery, and Thomas Collins was known by his plain "TOM". John Donovan chose a "Buzz Saw", outline, or without initial, to mark his logs. Sentimentality was reflected in the three entwined hearts of James Woods: Alonzo Davis stamped a neat jew's-harp on his logs: F. C. Falkert, a snowshoe: George Masters, either a house outline or anchor: and Falkert & McRae, a congress boot.

A chair, or "Circle Chair", marked Alpena Hoop & Lumber Company logs: two fishhooks, those of Besser Churchill Company; while a picture of the end of a veneer bolt identified those of Michigan Veneer Company. Two distinctive cross marks were those of W. H. Campbell and of Platt & Miller, the former's a circled Botones cross and the latter's resembling the German Iron Cross. Bolton & McRae recorded a clay pipe in 1882, and W. L. & H. D. Churchill a slightly different one in 1886. Arthur Pack & Company used two variations of picture frame marks, while Salling, Hanson & Company used the letters "RH" with a pine tree. Morris R. Tousey had three unusual log marks: the Odd Fellows emblem (three links), a bird's beak, and an anvil. "A Fork for a Barn" was one of the George Holmes marks, and another tool, the brace, was one of Menroe Kluek's. A pair of horseshoes marked James O. Cunn logs.

Movements of individuals and companies in changing operations may be seen in mark recordings. Salling, Hanson & Company used the same mark noted above when they logged on Cheboygan River tributaries, and they registered it in Cheboygan County: "JOE", of Turner and Tousey, Cheboygan County in 1885, is found in 1891 in Presque Isle County to be owned by Wilson & Platz, and in 1895 Morris R. Tousey recorded a plain "Circle T" in that county. The snowshoe mark, when recorded in Presque Isle County in 1888, became Whitney & Stinchfield's. Many others who logged further south in the region registered log marks.
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marks, usually in later years, in Presque Isle and Cheboygan counties.

Merritt Chandler's was the "C X C-in-C" mark. The Cheboygan River Boom Company had a "JPP" mark, and the Cheboygan Towing Company was known by its "Q", sometimes combined with other letters. Michigan Veneer Company, in Cheboygan County, marked logs "MVCo"., while Turner and Tousey's "Trunk Handle" resembled the one called "Hat" elsewhere. For unique design, W. S. Prettyman would be awarded first prize anywhere for his outline of a pig.

These are only a few of the log marks that mingled on the turbulent currents of northeast rivers, and the narrative tells only a little of the story. In general, the picture was the same as elsewhere—confusion first, with simple marks predominating, then the necessity for orderly organization, registration of marks in greater numbers, together with increased control by boom companies, and finally the decline with disappearance of pine. Here, however, the boom period was later, ending in the first decade of the present century, and here steam entered largely into the work. Lumberjacks and riverhogs did the bulk of the work, as ever, and these rivers were paradise to the drivers. One old riverman claims that often, while working in this part of the state, he "had to turn his head" to catch his breath, the logs he rode travelled so fast." At any rate, it was a continual fight for them in making the waters carry stupendous burdens to mill.

As samples of work done, these figures are enlightening: In one year, 1893, sixteen mills of the Cheboygan district cut 200 million feet of lumber. In 1871, the Black River alone carried 100 million feet in logs. In 1872, 80 million feet of timber passed through the Rifle River boom, and the next year the Au Gres Boom Company handled 63 million feet. That year, the Au Sable River Boom Company, in which Alfred A. Dwight was the dominating figure, rafted out 86 million, and the total estimated output of that boom for all time was 500 million. All told, the total production of the Lake Huron shore from Saginaw Bay to Alpena was estimated at 12 billion board feet. One little detail of that immense business was the hauling of one load of logs scaling 31 thousand feet, weighing probably 100 tons, by a team belonging to Pack Woods & Company. Brute force did the work, while order was maintained by use of the controlling symbols—log marks.

MICHIGAN LOG MARKS
THE MUSKEGON REGION

The theater of operation of the Muskegon timber barons was "high, wide, and handsome." On the main stage—the broad, lower Muskegon River—their control was complete. Their direct influence extended up the far reaches of the river through Houghton and Higgins lakes and over the White and Pere Marquette watersheds. On the lower Grand River, the valleys of the Rogue and Flat Rivers tributary to the Grand, and northward to the Manistee River slopes, mutual business connections developed interests interlocking with those of Muskegon.

Behind the scenes, Chicago capital maintained ties between the three neighboring lumber centers of the Lake Michigan
shore: Grand Haven, Muskegon, and Ludington. Each of these places was a beehive of tugboat activity between booming grounds and numerous sawmills; from each, steamers carried lumber cargoes and towed huge rafts of logs to Chicago markets and mills.

River mouths of this Lake Michigan shore are similar, in that they terminate in lakes forming ideal harbors. Well-protected, with narrow outlets to the great lake, they were also ideal for mill sites and sorting operations. Furthermore, the streams were fairly constant in volume, and therefore more reliable for log driving than those of the peninsula's eastern shore.

As early as 1839, John A. Brooks, of Newago, ran logs down the Muskegon. They were probably marked, but no record of the marks remains. Even after enactment of the 1842 log mark law, many years elapsed before Muskegon County was organized and the log mark record began.

A rough outline of Muskegon operations has already been sketched. With the 1855 law, under which mutual log driving gave place to the boom company, came inducements for river improvements, carried on spasmodically before; and with the 1859 law, passed the year Muskegon County was organized and the log mark record begun, came provisions for organizing companies specifically for such improvements. In most cases, boom companies and the improvement companies were identical, and on the Muskegon the boom company (Lumberman's Association) let contracts for river channeling. George Arms, who contracted to drive logs and sort them for the association, acquired a pile driver, tug boats and booms, all of which were taken over by the Muskegon Booming Company upon its formation in 1864.

Incorporators of the new booming company were all men with extensive timber holdings in the region: Chauncey Davis, Charles D. Nelson, R. P. Easton, Joseph Hackley, H. Beidler, J. H. Swan, Gideon Truesdell, O. P. Pillsbury, Lyman G. Mason and T. J. Rand, all of Muskegon, and

This picture shows the logs as they were being sorted and rafted at the mouth of Muskegon River for delivery to the different saw mills on Muskegon Lake. Each log has its owner's mark stamped on both ends of it. In 1847 and 1848, logs were driven down Muskegon River to Muskegon Lake where they were sorted. In 1850, John Ruddiman used a scow with sails to tow the logs to the mills. In 1851, George Ruddiman had the scow "Rattlesnake" fitted with a steam wheel to tow the logs. The Muskegon Booming Co. later on had a fleet of tugs to do the towing. In 1851, 565,846,557 ft. of logs were rafted and delivered by the Muskegon Booming Co. Eight hundred and fifty men were employed by the booming company. The buildings shown in this picture were known as the "soup shanties" where some of the booming company employees boarded. More than 80 men in this photo.

Martin and Tunis Ryerson, Robert H. Foss, George R. Roberts and S. N. Wilcox, all of Chicago.

The booming grounds, occupying the south river shore and the upper end of Muskegon Lake, were headquarters for
the company’s tugboat fleet. The tugs worked on schedule. One made tows of raft strings to mills on the far end of the lake, taking up to 10,000 logs at a time. Three towed rafts for shorter distances one was used as a dispatch carrier for the foreman, and two others were kept busy gathering and returning towing and rafting chains from mills. The rafts of the Muskegon boom were assembled like those of the Tittabawassee, but chains were used rather than ropes, and pin whackers here drove in place iron wedges, or dogs, through which the chain passed over the logs. The company owned 3,500 rafting chains, each 60 feet long and with 52 dogs attached.

At the mouth of Cedar Creek, which parallels the course of the Muskegon River and also flows into Muskegon Lake, a great storage boom was maintained, and to handle an overflow of logs, at times filing the Muskegon for many miles, a channel was made into Cedar Creek from the river, through which logs could be diverted into the storage boom and there stored. The magnitude of sorting arrangements at the Muskegon boom was indicative of the scale upon which logging was done. Gathering pine from eight counties, beginning with the plains of Roscommon and Missaukee, the river floated it upon its ever-widening bosom to deposit small amounts at mills along the way, but carried the bulk to the big boom.

Much timber logged on Muskegon tributary waters did not go down the river. At Cadillac, center of a network of logging railroads, several big mills sawed logs from surrounding counties. after Clam River had floated a few drives to the Muskegon from lakes there: at Jennings and Lake City like practices prevailed. At Reed City and Hersey (original home of the Blodgett interests), timber from Hersey River was milled; and, at Big Rapids and Newaygo, more mills are constantly into the pine supply. At Big Rapids, a boom company with a capacity of 80 million feet annually handled logs for local mills. Yet, all through the big years, millions upon millions of board feet of pine logs were driven annually the full length of the river, and the long drive, unique to this stream, called for special preparations.

For many miles below Houghton Lake, “beat camps” were stationed at eight-mile intervals to accommodate crews of thirty rivermen each. Each crew was assigned to one section of the drive, so that the logs were, in effect, relayed down river from one crew to another. The system prevailed generally as far down as Newaygo County, where crews from headquarters took over, but wanigans replaced the best camps in Clare County, having been shipped up from Muskegon by train. The Muskegon River wanigans were large scows with decks raised a foot or more, and, when dams were reached (as at Big Rapids and Newaygo), they were sometimes sent over, sometimes hauled out of the water and dragged around.

In 1886, a typical year, the Muskegon Booming Company employed 200 men on drive and 690 for sorting and rafting. When this is considered, together with the company record of more than 10 billion feet of logs rafted and delivered between 1864 and 1894, an idea of the size and complexity of work done is gained. More than 400 log marks were registered at Muskegon, and hundreds in addition were registered in upriver counties. It was the practice on this river and on near-by streams to register only the main mark of a company or individual, then vary the mark in use by adding details to it or combining it with a variety of side marks. Thus, more marks were in use than the number recorded.

Some of the early marks of Muskegon loggers have been preserved in the record. Thomas D. Stimson used a “TFS” hammer mark with “KI” as a side mark, recording it in 1859. In 1860, C. Davis & Company had a “D” in a large “C” as a stamp mark, and Anson Eldred registered his “AE” monogram together with his “tadpole” side mark—a large chip for its body and a small chip for its tail. Many distinctive marks were on record in 1874: Mason & Tift had “Crossed Keys”: Joseph T. Palmer’s brand was “Bottle P”; S. N. Wilcox was represented by “Watch With Hands” and others, including his “Barrel” mark. “Sled” or “Ox Yoke” marks stood for S. H. Boyce; “Arrowhead” or “Indian’s Bow” meant Gerrish & Wood; “A Fork or a Barn”
was a brand of Farr, Dutcher & Company. Sanborn, Rust & Company assigned to Hackley & McDowell a "Crown X" log mark.

In the same period in Newaygo County, Gideon Trueblood recorded a "D" mark; J. H. Hackley owned many besides his monogram; and O. P. Pillsbury & Company had a long list of brands, including their familiar "OK". A "Box BM",...
It was here, according to old rivermen, that unscrupulous operators sometimes sold 16-foot logs before floating them, spilled them in the water to be hauled out farther down where a foot of each end was sawed off, the 14-foot lengths restamped and the logs resold. Even in such cases, it was the log mark on remnants carelessly left that eventually caught the wrongdoers. Never for long were log marks frustrated in their function as symbols of property guardianship.

The richest pine lands of the Grand River Valley were immediately south of the Muskegon watershed, and were logged by way of Rogue and Flat Rivers into the Grand. Two booms were operated in this area, one at Grand Rapids and one at Spring Lake. The Grand Rapids Boom Company, organized in 1870, improved the river extensively and sorted logs for Grand Rapids mills, but a large proportion of the pine passed on to the Ottawa County Booming Company, which controlled the lower river and operated big sorting booms on Spring Lake. There the many sawmills of the Grand Haven vicinity, controlled by interests common to the Muskegon region, received pine of Rogue and Flat Rivers.

Even the Grand Rapids boom had close ties with Muskegon. One of its directors, C. C. Comstock, was a Muskegon River operator, and others had scattered holdings in the region. In 1873, its officers include I. L. Quimby, W. L. Long, L. H. Withey, J. H. Wonderly, and Comstock. In one of its typical years, 1873, the company rafted out 33 million feet of logs, some of which were sent downriver. The Grand River Valley farther to the east and south was a source of hardwoods, but this narrative is limited to known log marks used on the Grand. The richest pine lands of the Grand River Valley were among others. Crossed rifles marked logs of T. W. Harvey: a muley saw, those of Roberts & Kelcey; a half barrel, those of Haire & Tolford. C. C. Comstock stamped “plug marks” on his pine—round or square plugs of various dimensions, used with certain bark marks. William Winegar’s “double plug” marks were twin oblongs, and Charles Y. Bell’s initial “Spectacles” mark on these waters meant George Parks & Company, and a boxed hammer meant D. A. Blodgett.

The White River Log and Booming Company was organized in 1870. Flanking the Muskegon action on the north as the Grand Haven boom did on the south, it averaged 70 million feet of logs boomed and rafted annually during its first five years, reached a peak of 140 million in 1881, and went over the billion mark for total handled in 12 years. Headquarters were at Montague on White Lake, and shareholders included the following: George E. Dowling, Joseph Heald, John Welch, E. P. Perry, Edwin R. Burrows, Charles Floyd, Warren Haald, Frank English, G. F. Goodrich, H. B. Cone, James Dalton Jr. & Brother, John C. Lewis, John P. Cook, Staples & Covell, George W. Franklin, George M. Smith, D. C. Bowen, I. E. Carleton, and Hedges & Green. No log marks are available that were used exclusively on the White River, probably because Muskegon companies operated also on this stream, or because, since White River passes through Muskegon County, marks set on its flotage were registered at Muskegon without reference to place of use.

The scope of operation of certain Muskegon barons is illustrated by marks of O. P. Pillsbury recorded in Lake County for use on the Pere Marquette River, where he stamped his pine with such designs as “8X8”, “6X6”, or “4X4”, and used “NIX” for a side mark. Other Lake County marks were an eight-pointed star, for George For-
man, used with hack marks, a double diamond for Samuel Cupples Wooden Ware Company, a five-pointed star and three squares for John Judge, and many monograms and other letter combinations. William L. Webber had an array of marks that included several of these besides series for grading reference, and W. H. Delamater recorded with his “DEL,” the “tadpole” side mark introduced further south. Butters & Peters were known by an “HB” monogram, and an “LHG” monogram was assigned to G. H. Blodgett by Ducey Lumber Company.

The Flint & Pere Marquette Railroad Company had a long list of log marks to use in Mason and Lake counties. This company proposed at one time to dam the Muskegon River at Evart for the purpose of extending its logging operations, but the plan was not carried out. Among their marks, were “RR”, “Arrow S”, “Double 5”, and several used by William Webber—“W diamond B”, “HCP” (in which the “C” was placed horizontally), and others. Cartier Lumber Company, another big name here, also used at times the “WB” and marked logs with a primitive face picture.

One of the greatest rafts of Michigan pine ever floated was towed from the Pere Marquette boom to Chicago in 1873. Consisting of a million feet, rough scale, it was nearly 2,000 feet long and 70 feet wide, and contained 600 logs averaging 42 feet long and 4 feet in diameter. The raft was towed the 160 miles in 63 hours by steamer. The feat introduced a method of log transportation that was hazardous, owing to variable Lake Michigan weather, but which was for long common practice to this region.

All in all, the logging operations of the area of which Muskegon was the natural center were monumental, in scope and volume paralleling those of the Saginaw country. Lumberjacks, rivermen, barons, contractors, and the multitudinous tasks they performed, were much alike in the two vast empires, their work differing only because of land and river characteristics. The men were as riotously vigorous at labor or play: the log marks as efficient and colorful in the one as in the other. The grand totals of pine cut, driven, sorted, and rafted out might have been exchanged between them without damage to fact, considering that rough estimates were necessary in both.

The last task of loggers on the Muskegon side, as at Saginaw, was salvaging. Log marks were assigned to salvage companies or individuals, who used them as original owners did, to protect rights in logs accumulated. John Torrent, long connected with logging here, acquired the majority of Muskegon Booming Company stock, and, upon the expiration of its franchise in 1894, Torrent and Lange took over its interests and continued booming as the Log Owners Boom Company. Many court records reveal their constant reliance upon log marks, to identify logs they raised, against claims of land owners along the river.
The mighty current of the Manistee River cuts a crooked path down its deep valley through Kalkaska, Wexford, and Manistee counties. Rising in Otsego and Crawford counties, it tapped the pineries of the high plains there and gathered more logs from tributaries in Kalkaska County, becoming a great logging stream even before gaining the powerful volume that filled it with risks below. The swiftness of this stream, together with the steeps of its banks and the curves that created tricky eddies, gave the Manistee a name for dangers equaled only by the Au Sable. Driving pine here was a job for the toughest of riverfogs.

Pine lands of the Manistee Valley were cruised early, but many obstacles prevented lumbering developments reaching
important stages until the 1860’s. David Ward bought for himself and others large tracts of timberland in the upper valley. A. A. Dwight, one of his clients, finding that the river needed extensive improvements, and anxious to log his holdings, was instrumental in formation in 1869 of The Manistee River Improvement Company. Successor to this company, the Manistee River Boom and Navigation Company long controlled floatage down to Manistee through its boom and to the mills around Manistee Lake. The storage and sorting booms there were arranged at the mouth of the river in a simplified likeness of those at Muskegon. Because sawmills were comparatively few, one tug did most of the rafting, and pocket booms were unnecessary.

A good illustration of the hazards of Manistee River driving was furnished by Charles Skinner, old riverman, in an interview at Traverse City in 1940. He recalled his experience in breaking a jam that formed on one of the many sweeping curves of the stream.

"The "jack" placed to watch the drive rounding this curve went to sleep, and logs began piling up on the outer margin of the turn, driven hard into the bank by the impacts of logs following. Soon the drive jammed the river from bank to bank, pushed by the strong current, until logs were hung up to a height of 40 feet and stopped for more than a mile upriver.

The jam crew was soon assembled, but the wing jam (thus called when formed around a curve) was so tightly packed that all efforts failed to loosen it. Chains, block and tackle, and teams of horses were used to no avail, and dynamite exploded on the "face" brought no better results. Finally, dynamite was used to blast a channel past one end of the mass, releasing the rushing water and logs at the edge began to float. Several of the rivermen then attacked key logs, and, as the jam broke and began to move, some leaped free. Three, caught by the sudden tumbling and heaving of the logs, were carried to their deaths. Mr. Skinner was one of those who nimbly saved themselves.

One of the few places where bark marks retained import-
were run together, and the job of sorting for the mills became a simple process of shunting cars.

With the decline of timber supplies, the Manistee boom interest were sold to Louis Sands Salt & Lumber Company, which, while handling the dwindling flow of logs, began salvaging others from the river bottom. The greater part of such salvage operations, however, remained for a later period. H. J. Burch & Son, of Petoskey, gaining title to 235 log brands used on the Manistee, has carried on salvage work and is still in the business, "deadheading" Manistee waters.

Throughout the maze of streams, lakes, and bays of Lake Michigan shorelands from Frankfort to Petoskey, waters were filled with pine logs in the lumbering heyday. Shorter rivers, a scattering of lakes with convenient outlets to Lake Michigan, and great variety in the terrain and growing conditions made this a logging country quite different from others. Special difficulties and unique methods characterized its lumbering. Inasmuch as the rivers were in most cases one-county waters, each dominated by one company or closely allied operators, few marks were needed.

On the Betsie, although it was controlled by the Whitman Boom Company, one operator, L. W. Crane Company, han-
declined the drive. In the vicinity of Traverse City, Hannah, Lay & Co. Company virtually monopolized the waters. Small booms located at a great many points on such large inland waters as Elk Lake, Torch Lake, Lake Charlevoix, and Walloon Lake were one-company affairs. The problem of sorting logs in this area was nowhere great.

The Betsie River never had a large volume of water, so its drives depended heavily upon spring freshets. Its upper course was particularly poor, and, because some of the stands of pine were around Green and Grass lakes, source outlets to the Betsie River, special booms were devised to move logs across the lakes to other outlets. Short-haul railroads were built to get pine from the Karlin Hills south of the lakes down to the main stream. This was the hilly, forested upland now associated with the name of Interlochen.

Logs produced by camps near the lakes were hauled to the banks and spilled in to be gathered into booms. Boom-sticks 40 to 60 feet long were chained end-to-end around them and the whole enclosure was ready to be towed. A large raft, fitted with a hand winch from which a long rope was tied to the boom of logs, was anchored out in the lake. On this contrivance, several men worked the winch until the boom was brought near, when the raft was moved farther back and the process repeated until the next river outlet was reached. There the boom was opened, and the logs given to the river’s current.

S. K. Northam logged the Karlin Hills. He laid rails on tree-length logs laid lengthways on a course that wound from the river up through the hills to his camp locations. Horses drew the empty cars up grade, but loads ran down by gravity, their speed controlled by a brakeman. Carrying up to 6,000 feet on each load, the cars moved approximately 100,000 feet of pine to the river in a day.

In preparing to drive logs on the Betsie River, L. W. Crane Company, whose log mark was “Circle C”, were forced to raise a three-foot head of water to carry their big drive through to Frankfort. They worked with three jam crews, split up into small gangs in order to watch bends and shallows closely, because a jam might have hung them up until the water was lost. Here it would have meant waiting a full year for enough head to get the drive down. The Crane drive was of the traditional pattern and was accompanied by a wanigan, fly-boom sticks, suckers, and good riverbogs.

Their wanigan, built by one known as Indian John, was of 18- or 20-foot logs, the lightest white pine he could obtain, laid to a width of 15 feet. The sticks were held together by strips of black ash pegged to the logs every four feet. Its anchor was a "grosser" or hardwood post, dropped through a six-inch hole in the raft and fitted with handling pegs. A cabin was built on the after end for cooking and

A river rollway.
Mr. Marsh reported "M" near the point where he and the company were making use of a small dam they had constructed on a tributary stream. Some of the men made it their business each year to go back and pick up the heavier logs that did not float well, fastening several to each of the large, light wagons to float them down. For deadheading, mills paid 25 cents for each log retrieved.

When the hills at Arbutus Lake were logged by Hannah, Lay & Company of Traverse City, in the 1870's, a short-haul, gravity railway was built from the lake to Boardman River, a distance of three-quarters of a mile. Two cars, with bunks 10 feet wide, carrying loads of 10,000 feet, were used as were the Northam cars, but they were loaded differently. A loading deck was built between the railway and the lake, and a little railway track was laid from this down into the water on the lake bed. A smaller truck, running into and under the water on the track, lifted logs out of the lake as it returned and left them on the deck from which cars were loaded.

Loads, controlled on trips to the river by two brakemen and a conductor, where spilled directly into Boardman River, ready for the drive to Traverse City and the Hannah & Lay mill. In 1872, Hannah, Lay & Company put 9,000,000 board feet of logs into Arbutus Lake, for transfer to Boardman River.

Marion Weathers, old-timer of Traverse City, who began work for Hannah, Lay & Company as a sacker in 1889, was a riverman on the Boardman for years and remembers many details of the work: use of fly booms strung from bank to bank ahead of jams to raise water that would float the jam and break it; one jam that took three days to break; working often in water up to his waist while "keeping space"; wing jams that often formed at bends, and all the colorful incidents that gave the riverman's life its danger and its romance. According to Mr. Weathers, the Hannah, Lay & Company drives were completed in a hundred days or less, and, in one season, brought down 13,000,000 feet of logs.

The Boardman Valley was dominated by Hannah, Lay & Company, and this one company was responsible for development of the river for lumbering. They did not mark their logs, and claimed all unmarked logs floating on the stream, making the Boardman a "one-company" river. In the same way, a great many of Michigan's smaller rivers were one-company streams and upon these, few logs were marked.

In one year, 1868, Hannah, Lay & Company mills produced 12,697,200 feet of lumber, and almost all of it was shipped to Chicago. They had two mills—one at Traverse City and one at Long Lake. The former cut 11,000,000 feet in 1883; the latter, 8,000,000. Records of that year made note of one tree 164 feet high, the first limbs of which were 100 feet from the ground. The tall pine scaled 8,508 board feet and, when felled, lost a 32-foot length of its top timber by shattering.

Logs that carried marks on Boardman water were comparatively few and the marks were simple. C. H. Marsh, of Marsh & Bingham, had a plain "M". Mr. Marsh reported 32,886 feet for a day's run of this mill south of Traverse City in 1867. Others, including George Peabody's "P", W. S. Johnson Company's "Circle J", and the four-pointed star of William McManus, indicate the simplicity of needed log marks of Grand Traverse County.

West of Grand Traverse Bay, David Ward again entered the picture. A pinery on the headwaters of the Boardman, looked after by Ward for Charles Merrill, was logged by Dexter & Noble, of Elk Rapids. They drew the logs 14 miles to Rapid River, floated them down that stream, through Round Lake and Elk Lake to their mill. The later center of Ward lumbering activity was near the point where Otsego, Crawford, Kalkaska, and Antrim counties meet. A railroad, connecting with the Michigan Central at Frederic
and with Grand Rapids and Indiana at Alba, passed through the town of Deward, where great mills were built to manufacture Ward lumber. Drawing logs from 85,000 acres of the Ward domain, the mills cut 113,500 feet in a day, and their huge yards stored 5,000,000 feet. A year's run at Deward was 52,000,000 board feet. The town's location is marked now only by a millpond, and the Ward railroad, extended to East Jordan, known as the Detroit Charlevoix line, was bought by Michigan Central.

The Ward Lumber Company mark, a large, round script "W", was rarely recorded and seldom used, since Ward and his estate controlled logs and lumber closely from tree to market.

As in other regions, the last tale of log marks here is told in salvaging operations. An example is afforded by a story headed, "A Fortune in Deadheads", in The Grand Traverse Herald. It tells of lumbermen of the Frankfort vicinity combining for the purpose of clearing deadheads from the bottom of Betsie River for 100 miles from Frankfort to Green Lake. Estimating that 35,000,000 feet of timber could be lifted, the combine entered upon its task with the aid of a steam lifter and Crane Brothers were given charge of operations. As usual, log marks identified ownership of log salvaged.
Pine logging of Michigan’s Upper Peninsula was important in many particulars, but in a narrative concerned solely with log marks it affords only incidental interest.

Though the Menominee River was early developed for booming, its story was largely that of Wisconsin logging until a later period. Logging operations of important proportions did not occur until the 1880’s in the northern peninsula and, except in a very few cases, never assumed the complexities that demanded extensive use of log marks. Most rivers there were one-county streams, or were dominated, like...
some in the other areas, by one big company. The log mark records extend from 1885 nearly to the present time. Thus, it will be understood that operations here, coming so much later, were more generally aided by mechanized transportation than those of Lower Peninsula counties, obviating the need of distinguishing marks.

The Menominee River Manufacturing Company, organized in 1866, built a series of dams in the lower river to control a 25-foot fall in its course, a dam near the mouth creating backwaters for log storage. Improvements in the river channel were made immediately, and in 1872 the company passed through its sorting booms a season’s total of 142,917,228 feet of logs. In 1875, 602,285 logs, scaling 112,056,280 board feet, were handled. Yet the first mark was not recorded in Menominee County until ten years later, when White, Friant & Company registered their gracefully lyre brand. Four years later, John Finan recorded a “Circle X”, and in 1890 Thomas Farrell entered his “GBEH” and “AG”.

When Michigan pine began to swell the drives on Upper Peninsula waters, the Menominee boom took its place with those of Saginaw and Muskegon as one of the giant organizations at work. In 1889, logs were sorted to scale a total of 642,000,000 board feet. It is of interest to note that logs then averaged 192 board feet each. Small sticks were discarded and wasted. In 1916, the last year of Menominee booming, boards averaged only 31 board feet each. During its life, the boom passed 10,808,749,178 board feet of timber, a goodly portion of which originated in Michigan.

Three big companies were represented in the marks recorded in Menominee County—J. P. Underwood had “TIN”, “INK”, and “MAY” for bark marks, and “LIZ”, “JAU” and an “Octogon 11” for end marks besides two odd designs. Oliver Iron Mining Company had a “Circle Star”, in which the star’s points touched the circle—the only mark recorded in adjoining Iron County. Cleveland Cliffs Iron Company used a “Circle C” here, besides their big diamond mark enclosing “CCIC”. The last mark of Menominee County, recorded, in 1939, is that of L. E. Fisher, a cross mark.

In Ontonagon County, no marks were recorded until 1896, after which a few were entered in most years, up to 1916. One mark was recorded in 1926, and another 1927.
Eleven companies recorded in 1902, most of these using initials or simple designs. Two companies, however, in that year recorded series marks that indicated extensive logging. Holt Lumber Company recorded 35 marks, largely “U”s in combination with numbers and other letters, but including a block “H”. Diamond Match Company registered no fewer than 100 of their marks, ranging from letter combinations through diamonds, big diamonds, double diamonds, circles, double circles and hearts, most of which were used with numbers to indicate camp of their operations. Reasons for the heavy registration of marks by a single operator are obscured by time, indicating again how quickly significant practices of a major industry may become lost to posterity through lack of records.

In Delta County, where marks were recorded from 1892 to 1908, the picture was much the same. Initial log marks were varied in combinations, and simple designs prevailed, the most unusual being Jerry Madden’s four-pointed star and Charles Mann’s arrow mark. An old acquaintance comes to attention there—the Merrill “M” recorded by Young and Merrill, and another familiar name, Wilhelm Boeing, is represented in “OK” and “Star B’” marks.

The Chicago Lumber Company, doing the greater part of the logging of Schoolcraft County, used a “cobb house or picture frame” mark, inasmuch as a boom was maintained at Manistique. Logging on the Manistique produced such marks as S. C. Hall Lumber Company’s “TUT” and “HIT”, Gates Lumber Company’s “COW” and “SAM”, John Doyle’s “Crossed Z” and Western Lumber Company’s “Barred O”. Variations of basic marks in this county were intended to identify jobbers operating for large firms.

A greater share of the lumbering of the Upper Peninsula was done by companies dominated by Chicago and lower Michigan interest. The “B Square” of C. W. Baker and the “C” marks of R. F. Conway, representing Chicago owners and recorded in Mackinac County, are evidence of this, as are others registered in the same county. Jerry Madden’s “Cross TJZ” was assigned to George W. Keelin of Chicago: W. H. Doyle of Detroit used a “D Square”; Union Bag & Paper Corporation of Cheboygan marked logs with “UB”; Central Paper Company of Muskegon had their “CPC” in varying designs. Cleveland Cliffs Iron Company recorded marks already mentioned here. Wing & Brown divided their initials for marking grades: the “Circle W” was stamped on sound timber, while “Circle B” meant cull logs. The longest list of log marks in Mackinac County was used by J. A. Jamieson, a St. Ignace lumberman. Besides “J” marks—plain, circled, and squared—he had several monogram brands and numerals, an “IKI” and a “St”, which signified his home office.

One mark in Mackinac records tells a story of Lake Michigan rafting. In 1918, the Standard Post & Tie Company, whose usual mark was “S”, was logging on Hog Island and rafting on Lake Michigan. One of their rafts, containing 25,000 pieces, broke up on the lake and drifted onto the Upper Peninsula shore between St. Ignace and Naubinway. Gathering their property together, they found that the “S” brand was not available for use in Mackinac County, so they marked the logs with a boxed, reverse “P” and recorded that.

The latest mark of record in that county is that of Peter Goudreau, an “E” partly boxed. The last transfers of log marks are those that point to salvage operations, as elsewhere. At Ontonagon, for instance, John Hawley is reported to have bought up the registered marks.

Logging the Upper Peninsula was not without its difficulties. Rivers, though high when the deep snow melted in the spring, were generally full of rapids, rocks, bends, shallows, and unique hazards created by the rugged country. Relating his troubles on the Paint River of Iron County, one old logger tells how the north branch ran through a ravine between high sand banks, then passed over a flat. A dam was placed above the ravine to control the drive, but at one time too many logs were sluiced through, raising the water in the ravine and washing away the sand banks into the stretch at the flat. There the river overflowed, the logs

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caught, and the current cut a new channel, leaving logs scattered. The stream split around its old course, and neither side had enough water to float logs. The river had to be trained back in its course by a series of dams and artificial banks made of long timbers, before driving could continue.

Trouble on the Carp, in Mackinac County, always developed at a place where, below a fall and rapids, the stream became rocky and shallow. George Lutman, now of Traverse City, when driving logs for the Central Paper Company, built a temporary dam of boom sticks below the rapids, released logs from two dams above the falls and allowed them to jam on the rapids. Water having gathered overnight, both at the jam, backed up by the booms, and at the upriver dams, he opened the dams in the morning, flooding the tailwaters of the dam at the shallows below. When the water raised the jam from the rocks, he let loose the booms and sent the drive down upon the flood.

Logging is still carried on in the Upper Peninsula, but methods have changed greatly. Large trucks and railroads are used to transport logs to mill; and the log mark is no longer needed.

As in other places throughout the state, however, the mark fulfilled its purpose wherever logs were mingled by owners on the public streams—the great highways of lumbering. Tradition ruled the use of the log mark and, like many powerful traditions, gave way before advance of the machine age. But, in dying, it left memorable romance.
BARK MARKS AND THE END MARKS WITH WHICH THEY WERE USED

**BARK MARKS**

- Newaygo County, 1864: L. G. Mason & Co.
- Newaygo County, 1869: John Meadley
- Newaygo County, 1871: E. Merritt, with series
- Newaygo County, 1873: Bushwell & Reed
- Newaygo County, 1877: Bushwell & Reed
- Newaygo County, 1879: Byssas Hills
- Newaygo County, 1877: Gideon Truesdell
- Newaygo County, 1871: Truesdell & Orton
- Ottawa County, 1867: Cutler & Savidge
- Ottawa County, 1868: Charles Y. Bell
- Ottawa County, 1869: Charles Y. Bell
- Ottawa County, 1871: Wm. R. Louttit & Co.

**END MARKS**

- TITATAWASSEE BOOM COMPANY
  - 1890–1893 (Saginaw Area)
  - J. T. Burnham
  - M. J. Deindorfer
  - Gebhart & Estabrook
  - Merrill & Ring
  - Eddy Bros. & Co.

**IX**

CONCLUSION

In the foregoing, something of the nature and magnitude of one phase of Michigan logging has been sketched. The work in which log marks kept order was immense and complex: its story was for many decades the history of the state.

The greatness of the task of handling marked logs is measured in totals of pine cut. Examples: In 1885 the pine cut of Michigan was 3,578,138,443 board feet, rough timber scale; in 1887 it was 4,162,317,778 feet, and in 1890 it reached a peak of 4,250,000,000. The grand total for all time has been estimated at 160,000,000,000 feet, and, considering the enormity of early wastage and the fact that
many unknown items are omitted from the estimate, this is a conservative figure. It means that more than a billion logs were handled. In early years the "200-feet-to-the-log" average was low. A great many individual logs scaled better than a thousand board feet. Later, the average per log greatly decreased, though not enough to warrant changing the estimate.

In 1871, not the biggest pine year by any means, the districts of the eastern shore had 212 sawmills, representing an invested capital of nearly $7,000,000, turned out 800,000,-000 feet of lumber besides hundreds of millions of laths and shingles. At mills, 5,204 men were employed, and in the woods more than 10,000. Western shore regions had approximately as many, a thousand men being at work in Muskegon mills alone. It was estimated that 25,000 loggers labored in Michigan woods that year, and that more than 800 camps were maintained.

In more general use than loggers' marks, certain brands called "catch marks" were stamped upon logs by handling concerns. An example is the barred, triple bend of Torrent & Arms. The Big Rapids Improvement & Manufacturing Company stamped logs they handled with their "AM". Cheboygan River Boom Company used "JPEG", and Huron Log Booming Company had a large "W" crossed by a graceful curve. "TBBC" was the mark of Thunder Bay River Boom Company. "MBC" on logs at Muskegon meant control by Muskegon Booming Company, and later, a plain "L" containing a small "O" within the angle indicated Log Owners Booming Company.

For this volume, more than 3,500 marks have been examined; only a fraction of those that were used. Records at this late date are lamentably scarce, but at no time did the records contain more than a portion of the tale. There was, for instance, a business of manufacturing marking irons, information about which has grown hazy with the passing of time.

Marking hammers were in constant demand. They were generally of cast iron, of from four to six pounds in weight, and taking many shapes. The owner's mark was cast upon the marking face and was filed or hack-sawed in finishing, for sharpness of design. A few were made with two marking faces. Many were made by blacksmiths near place of use, but quantities were manufactured by hardware companies. The A. F. Bartlett Company, foundry firm of Saginaw supplying lumbermen, was for long the chief maker of marking hammers for that area. These irons were cast, and the work called for skilled pattern-makers and moulders. Bartlett prices were based on weights of finished hammers. Handles varied from those like ax-handles, of hardwood, to those of shaped steel or even gas-pipe.

Stamping irons, however, marked far more than logs. Names of log marks, part of the language of the day, were impressed upon the folk and carried down the cultural stream. The tang of loggers' talk was strong in the idiom shaped by the mind of adolescent Michigan, and log marks therefore became important indicia of the vigorous humanity and the coarse, lusty humor of the idiom.

A sense of healthy masculinity at work is inescapable when reading the marks over. The Michigan that disregarded precedent and custom, cut red tape with eloquent disrespect, and got things done is exposed at the root. Youthful manhood found ways of expressing itself even in the simple letter combinations so often used. Such marks as "SIN", "HEL", "DAM", "SOW", "HOG", "DOG", "CAT" and "SKAT" were very popular. "YUP", "ZZZ", "UNO", "MAW", "MAN" and "BOY" were familiar and easy to the tongue. The loggers' humorous regard for the "mossback" (farmer) was expressed with "COW", "BAG", "PAIL" and "FUL", "PAIL", by the way, started out as "PAUL", representing Paul Blackmere, but the temptation to make it "PAIL", since it was used with "BAG" and "FUL", was too strong to withstand, after the mark passed into the hands of others.

The Tobacco River Lumber Company did not hesitate to seize an obvious opportunity when it chose the marks: "TOBACO", "SMOKE", "CIGAR", "PLUG", and
"SNIFF". In few other industries or periods have men been so beautifully direct. Of more universal appeal but still bluntly put, "TAX", "SKY", "YET" gave marks, the laconic opinion of a Muskegon River operator. "YES" said other log marks. "UP", "OK", "FUN" — "UBET". The gambling spirit was at home in lumbermen, and they would tell the merry world so. "7UP" was one of the most popular of all log marks. It was assigned by Stephen Baldwin of Detroit to Monroe Boyce for use in Ottawa County in 1873, registered after that by Hall & Emory in Bay County, Edward Andrews in Saginaw, Farr Lumber Company in Oscoda. Frank Filer in Mason, and was probably owned by many others. It has appeared several times in the present century in the Upper Peninsula. "UBET" and "FUN" also passed from Baldwin to Boyce, and "UBET" saw extensive service on the Tittabawassee.

Symbols and pictures gave the imagination greater range, not only in design, but in reading. Log marks had more or less formal names for reading at the sorting gap and for registry, but lumbermen generally had little use for formality. They gave the pictures, spicy nicknames. Unfortunately, time and modesty have destroyed authentic data on the subject. Available information indicates that most of the nicknames would be unprintable. Even old loggers, frank as they are, were undelicate at this point and became reticent.

Still knowing the lumberjack's propensity for liquor and women, we are sure that 'Bottle RYE' was more than a mark to him: that 'Bowl and Pitcher' meant something beyond a hotel room. It seems certain that respect for the owner's initial did not limit his tongue to plain 'Bottle P'. It is even more positive that his name for the "Pray" mark used in many counties was not for sensitive ears. What his inventive tongue did with less suggestive designs is now a matter of conjecture. There was a "Hanging Man", a "Pair of Legs", "Snow Man", "Snow Woman", "Elephant", "Pig", and "Pig's Head".

Humor was attached to oddities among the marks, as, for instance, the "Dumbbell", "Single Handcuff", "Snuff Box", "Fishbooks" and "A Fork for a Barn", and it naturally accompanied "Chicken on a Fence", "Elf", "Pistol", "Lady Bug", and "Bed Bug". Simple objects were not immune to fanciful interpretation, and the list of them included and extended far beyond "Broken Brake Wheel", "Rimless Wheel", "Right and Left Chainbooks", "Trunk Handle", "Clay Pipe", and "Jew sharp". Combinations of objects and letters sometimes provided their own reading. "KEY-NO" and "DON-KEY" are examples. Others, including the owners' names in the reading, furnished opportunities for nicknaming bosses, as in the instances of "Jug Wyle" and "Duck Murphy". Anything connected with the person was apt to get ribald treatment. In that category, besides those
already mentioned, were "Foot", "Slipper", "Shoe", "Cap", "Net Hat", "Old Hat" and "Two-faced Head". Add the great variety of odds and ends, such as "Square Snake", "Crown X", "Tadpole", "Old Hammer", "Cook's Hat", and "Barrell", and the result will leave little doubt as to the abundance of material for the name-making tell-tales of idioms.

The language of logging days was that of 'he-men'. The idiom is easily seen to be that of a folk imbued with a driving viritility—a quality that could fulfill itself only in large-scale production, be it in terms of logs, celery, cherries, furniture, or automobiles. Clearly, no point need be forced to identify the logging world as a main root of culture in Michigan.

The day of huge pine cuttings and daring river drives has passed, but the spirit of Michigan loggers continues as a cultural heritage. The proud self-sufficiency of the riverhog and his extreme distaste of work "hung-up" are still characteristic of Michigan workmen. The call, "We’re in a jam!", is always enough to bring plenty of help in a hurry. The jargon of the woods and rivers has filtered through a generation of voices to stir the blood of men. They are driving part of a job and are hastening joyfully to its conclusion. Now and then, a "bull of the woods" strides ruthlessly through a civic or business tangle to leadership and acclaim, and God help the idler who is in the way—he is a "deadhead" to be regarded with forceful contempt.

The fighting logger treated men and materials with profane disrespect. He invited trouble for the fun of settling it. The reckless hustle of the logging drive is still everywhere evident in Michigan work: "Get that blankety-blank stuff out; we’re going to town with it!"

And when team-work is needed; when men must rise to an emergency; when a word of cheer is worth an hour of whip-cracking, there trembles on the air the cry of comradely encouragement that hastened Michigan pine to the markets of the world—"Now you’re logging, boy!"