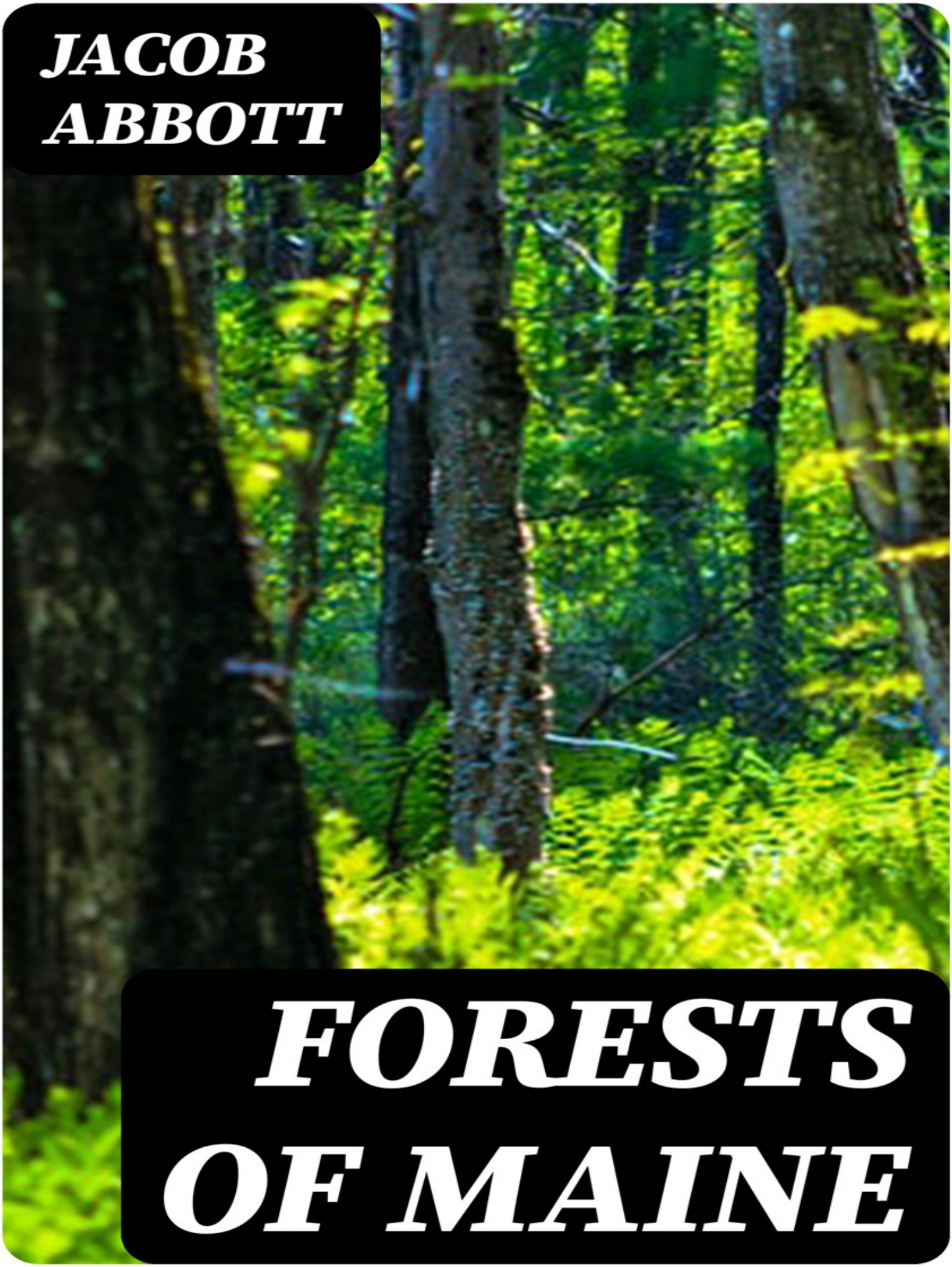
JACOB ABBOTT
FORESTS OF MAINE

Jacob Abbott

Forests of Maine

Marco Paul's Adventures in Pursuit of Knowledge

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A VOYAGE ON THE POND.

"*Joe and two others were despatched to row it ashore*."—See p. 31.

PREFACE.

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The design of the series of volumes, which it is intended to issue under the general title of MARCO PAUL'S ADVENTURES IN THE PURSUIT OF KNOWLEDGE, is not merely to entertain the reader with a narrative of juvenile adventures, but also to communicate, in connexion with them, as extensive and varied information as possible, in respect to the geography, the scenery, the customs and the institutions of this country, as they present themselves to the observation of

the little traveller, who makes his excursions under the guidance of an intelligent and well-informed companion, qualified to assist him in the acquisition of knowledge and in the formation of character. The author will endeavor to enliven his narrative, and to infuse into it elements of a salutary moral influence, by means of personal incidents befalling the actors in the story. These incidents are, of course, imaginary—but the reader may rely upon the strict and exact truth and fidelity of all the descriptions of places, institutions and scenes, which are brought before his mind in the progress of the narrative. Thus, though the author hopes that the readers, who may honor these volumes with their perusal, will be amused and interested by them, his design throughout will be to instruct rather than to entertain.

MARCO PAUL IN THE FORESTS OF MAINE.

CHAPTER I.

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THE MOUTH OF THE KENNEBEC.

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One summer, Forester and Marco Paul formed a plan for going to Quebec. Marco was very much interested in going to Quebec, as he wanted to see the fortifications. Forester had told him that Quebec was a strongly-fortified city, being a military post of great importance, belonging to the British government. Marco was very much pleased at the idea of seeing the fortifications, and the soldiers that he supposed must be placed there to defend them.

On their way to Quebec, they had to sail up the Kennebec in a steamboat. As they were passing along, Marco and Forester sat upon the deck. It was a pleasant summer morning. They had been sailing all night upon the sea, on the route from Boston to the mouth of the Kennebec. They entered the mouth of the Kennebec very early in the morning, just before Forester and Marco got up. And thus it happened that when they came up upon the deck, they found that they were sailing in a river. The water was smooth and glassy, shining brilliantly under the rays of the morning sun, which was just beginning to rise.

The shores of the river were rocky and barren. Here and there, in the coves and eddies, were what appeared to Marco to be little fences in the water. Forester told him that they were for catching fish. The steamboat moved very slowly, and every moment the little bell would ring, and the

engine would stop. Then the boat would move more slowly still, until the bell sounded again for the engine to be put in motion, and then the boat would go on a little faster.

"What makes them keep stopping?" said Marco.

"The water is very low this morning," said Forester, "and they have to proceed very carefully, or else they will get aground."

"What makes the water so low now?" asked Marco.

"There are two reasons," replied Forester. "It is late in the summer, and the streams and springs are all low; so that there is but little water to come down from the country above. Then, besides, the tide is low this morning in the sea, and that causes what water there is in the bed of the river to run off into the sea."

"Is not there any tide in the river?" asked Marco.

"No," said Forester, "I suppose there is not, strictly speaking. That is, the moon, which attracts the waters of the ocean, and makes them rise and fall in succession, produces no sensible effect upon the waters of a river. But then the rise and fall of the sea itself causes all rivers to rise and fall near their mouths, and as far up as the influence of the sea extends. You see, in fact, that it must be so."

"Not exactly," said Marco.

"Why, when the water in the sea," continued Forester, "at the mouth of the river is very low, the water in the river can flow off more readily, and this makes the water fall in the river itself. On the other hand, when the water in the sea is high, the water cannot run out from the river, and so it rises. Sometimes, in fact, the sea rises so much that the water

from the sea flows up into the river, and makes it salt for a considerable distance from its mouth."

"I wonder whether the water is salt here," said Marco.

"I don't know," said Forester.

"If we had a pail with a long rope to it," said Marco, "we could let it down and get some, and try it."

"We could let the pail down, but I doubt very much whether we could get any water," said Forester. "It is quite difficult to drop the pail in such a manner as to get any water when the vessel is under way."

"I should like to *try*," said Marco.

"You can find out whether the water is salt easier than that," said Forester. "You can let a twine string down, and wet the end. That will take up enough for a taste."

"Well," said Marco, "if I've got a string long enough." So saying, he began to feel in his pockets for a string.

He found a piece of twine, which he thought would be long enough, but, on trial, it appeared that it would not reach quite to the water. Forester then tied it to the end of his cane, and allowed Marco to take the cane, and hold it over the side of the vessel; and by this means he succeeded in reaching the water, and wetting the end of the string. He could, after all, succeed in wetting only a small part of the string, for it was drawn along so rapidly by the motion of the boat, that it skipped upon the surface of the water without sinking in.

At length, however, after he had got the end a little wetted, he drew it up and put it in his mouth.

"How does it taste?" said Forester.

The question was hardly necessary, for the *faces* which Marco made showed sufficiently plain that the water was bitter and salt.

"Yes, it is salt," said he. Then, suddenly casting his eye upon a long dark-looking substance, which just then came floating by, he called out,

"Why, Forester, what is that?"

"A log," said Forester.

The log was round and straight, and the ends were square. The log glided rapidly by, and soon disappeared.

"It is a pine log," said Forester. "There are vast forests of pine trees in this state. They cut down the trees, and then cut the trunks into pieces of moderate length, and draw them on the snow to the rivers. Then, in the spring, the waters rise and float the logs down. This is one of these logs floating down. Sometimes the river is quite full of them."

"Where do they go?" asked Marco.

"Oh, men stop them all along the river, and put them into booms, and then fasten them together in rafts."

"How do they fasten them together?" asked Marco.

"They drive a pin into the middle of each log, and then extend a rope along, fastening it to each pin. In this manner, the rope holds the logs together, and they form a long raft. When they catch the logs in booms, they afterwards form them into rafts, and so float them down the river to the mills, where they are to be sawed."

"Can men stand upon the rafts?" said Marco.

"Yes," replied Forester, "very well."

"They make a floor of boards, I suppose," said Marco.

"No," replied Forester; "they stand directly upon the logs."

"I should think the logs would sink under them," replied Marco, "or at least roll about."

"They sink a little," replied Forester; "just about as much as the bulk of the man who stands upon them."

"I don't know what you mean by that, exactly," said Marco.

"Why, the rule of floating bodies is this," rejoined Forester. "When any substance, like a cake of ice, or a log of wood, or a boat, is floating upon the water, a part of it being above the water and a part under the water, if a man steps upon it, he makes it sink enough deeper to submerge a part of the wood or ice as large as he is himself. If there is just as much of the wood or ice above the water as is equal to the bulk of the man, then the man, in stepping upon it, will sink it just to the water's edge."

"But perhaps one man would be heavier than another man," said Marco.

"Yes," replied Forester; "but then he would be larger, and so, according to the principle, he would make more wood sink before the equilibrium was reached."

"What is *equilibrium*?" asked Marco.

"Equilibrium is an equality between two forces," replied Forester.

"I don't see what two forces there are," said Marco.

"There is the weight of the man pressing downwards," said Forester, "for one, and the buoyant power of the water, that is, its upward pressure, for the other. The weight of the man remains constantly the same. But the upward pressure

of the water increases in proportion as the log sinks into it. For the deeper the log sinks into the water, the more of it is submerged, and it is more acted upon and pressed upward by the water. Now, as one of these forces remains constant, and the other increases, they must at length come to be equal, that is, in equilibrium; and then the log will not sink any farther. That's the philosophy of it, Marco."

Marco did not reply, but sat looking at the barren and rocky shores of the river, as the boat glided by them. Presently another log came into view.

"There," said Forester, "look at that log, and see whether you think that you could float upon it."

"Yes," said Marco, "I think I could."

"It depends," said Forester, "on the question whether the part of it which is out of water is as big as you are."

"I think it is," said Marco.

"Yes," added Forester, "I have no doubt that it is."

"Only I should roll off," said Marco.

"True," replied Forester; "but the millmen, who work about the logs, acquire astonishing dexterity in standing upon them. If there is only enough of the log above water to equal their bulk, so that it has buoyant power enough to float them, they will keep it steady with their feet, and sail about upon it very safely."

"I should like to try," said Marco.

"Perhaps we shall have an opportunity at some place on the river," said Forester.

Here Marco suddenly interrupted the conversation by pointing up the river to a column of smoke and steam which