

**CONNECTION OF ABUNDANCE OF MOSS AND OF BLACK FLIES WITH
ABUNDANCE OF TROUT.**

[From Scientific Farmer, May, 1878.]

It requires but very little imagination to connect the presence of moss growth with the pleasures and convenience of man, so close are the links of facts which join one circumstance with another. In the unsettled wooded regions we find the torment of black flies and mosquitoes, which oppress the inhabitants and render it difficult in the newly-cleared land of Maine to summer young stock. On the confines of the Arctic regions they are mentioned by voyagers as plagues of existence; and they are a serious drawback to the comfort of the tourist who seeks in the Gulf of Bothnia to see the midnight sun. Læstadius says that he will not affirm that they have ever devoured a living man, but that many young cattle, such as lambs and calves, have been worried out of their lives by them. All the people of Lapland declare that young birds are killed by them, which is not improbable, says our author. Wherever in Maine we find trout the most abundant, there we find the black fly, the gnat, and the mosquito in overpowering abundance; and as the country becomes settled these pests of man diminish and disappear; and, as angler-sportsmen note with grief, there is a diminution of the fish, which they ascribe usually to poaching, and to the destruction brought about by the rod, the spear, or the seine; and in cases of late years have endeavored to check this disappearance through the hatching of ova and the restocking of the waters. These gentlemen, however commendable their intentions, have overlooked the fact that there is a relation between the fish and its food; and with the destruction of the moss of the forests the breeding ground of the food insects is taken away, and the food supply thereby diminished. In the clearing of the land and the thinning of the forests are causes at work, through the diminution of the insects which furnish the food to the trout, by the destruction of the mosses, whereby the moisture essential for the development of the insect ova is retained, which acts more disastrously on the fish than the rod or the spear. In proof of this we offer our own experience that insects abound in greater abundance in mossy woods than in second growth; that trout brooks which flow through mossy woods are usually more prolific of trout than neighboring brooks whose flow is through cleared land or second growth; that artificially-stocked ponds and streams in settled regions are never equal to the support of as much trout-life as like streams in the backwoods of Maine; that fishing cannot exterminate trout in the region of the black fly. Let us illustrate by an opposite fact recorded by Williams in his History of Vermont. In a pond formed by damming a small stream, to obtain water-power for a saw-mill, and covering one thousand acres of primitive forest, the

increased supply of food brought within reach of the fish multiplied them to that degree that at the head of the pond, where in the spring they crowded together in the brook which supplied it, they (trout) were taken by the hands at pleasure, and swine caught them without difficulty. A single sweep of a small scoop net would bring up half a bushel; carts were filled with them as fast as if picked up on dry land. The increase in size of the trout was as remarkable as the multiplication of their numbers.

We thus have indicated: Diminution of mossy woods; diminution of insect-life, upon which the young prey almost entirely and adult fish largely feed; diminution of fish. Could a more complete circumstantial chain of evidence be required?

Thus the mosses have an importance in supporting that prolificacy of life in the streams which exist in the far North; and the same pests which torment the Indian serve him in one remove as food; the same pests which trouble the frontiersman stock the streams with abundant life to serve him as food, and to attract the angler who employs him as a guide. As the mosses lose their supremacy the black fly disappears, the mosquito diminishes in number, and our streams dwindle in size, and even lose their flow in seasons of drought; and their capacity for supporting trout-life is sadly diminished. In overcoming the wilderness man is necessitated, through the infinite correlations of nature, to destroy the natural sources of food, and through art to sustain himself, less precariously, it is true, but with greater toil, from the land. He promotes vicissitudes of climate, and changed conditions which work to him injury, in order to realize the immediate gains which he desires; but is prone to overlook the causes of his acts, as nature acts through littles, which require thought to connect with their effects; and not the least of her littles are the humble mosses which exist so abundantly where coolness and moisture are to be found.

POISONED WATER IN THE GULF OF MEXICO.

[From the Sunland Tribune, Tampa, July 20, 1882.]

We learn from Capt. William Jackson, of the steamer "Lizzie Henderson," that on his trip from Cedar Key, Tuesday, he encountered a streak of poisoned water, covered with all varieties of dead fish, of more than a mile in extent, off Indian Pass, between Clear Water and Egmont Light. The captain says that a very offensive smell arose from it, and that a good many bottom fish, such as eels, were floating dead on the surface. We opine that this fact upsets the theory of some as to this poisoned water being fresh water from overflow on the mainland, impregnated with poisoned vegetable matter, as there are no streams of any size flowing into the Gulf near where these fish were found.