

sun. The number that annually visit the Fraser is marvelous. Below Yale they occasionally run in such numbers as to seriously interfere with navigation by the steamers, and when these vast shoals are crowded into the narrow gorge above the river is literally choked with their straggling bodies. Along the river banks for miles the Indians capture them with dip nets of primitive construction, and dry them in the sun for winter food. The contrast of the bruised and battered fish I saw in the Thompson with the leaping and plunging masses which had challenged my admiration as I gazed down from the platform of the car a few days before, while threading the rocky cuts and tunnels of the Fraser Gorge, gave me a pang of regret at this quick termination of a life gifted with such power, grace and energy.

We passed up the South Thompson a distance of thirty-six miles and then entered the first of the Shuswap lakes. Little Shuswap is four miles long and nearly half as wide, its crystal waters teeming with trout of from one to eight pounds' weight. Little River, a shallow and rapid stream four miles long, connects it with Big Shuswap, from the lower end of which to Eagle Pass is an expanse of water forty miles long, deep and clear. Here, 400 miles from the sea, is a body of water that would float the tonnage of the world. The scenery along the Thompson had been beautiful, but as we entered the Shuswaps its beauty and grandeur intensified, that of the Big Shuswap being the most entrancing of the whole route from Savona to Eagle Pass. As the *Peerless* left Little River and entered the great lake I swept my eye around the horizon in one comprehensive glance of admiration. Forty miles to the eastward the snow-capped peaks of the Gold Range were a beautiful and refreshing sight, while nearer the green, forest-covered hills rose abruptly from the beach, in marked contrast with the snowy peaks as well as with the glassy and shining surface of the water which reflected their graceful forms and sylvan adornments. The run up the lake was most delightful and exhilarating, and in due time we were landed at Eagle Pass, not many miles from the point where, a few weeks later, the last spike connecting the ends of the great Canadian Pacific Railway was driven. Beyond this point the steamers run to the mouth of the Spallumcheen and ascend that stream to the flourishing settlements further south.

The country about the Eagle Pass, lying between Shuswap Lake and the Columbia, approaches the ideal "sportsman's paradise" nearer than any other I was ever in. Between Eagle Pass and Farwell, the new town which last year sprang up on the Columbia as head of navigation and depot of supplies brought up from Spokane Falls, lie four delightful sylvan lakes, filled with beautiful, voracious, gamey trout. In the order of their size they are named "Three Valley," "Griffin," "Summit" and "Victor," the first being two miles and the last but half a mile in length. The hills are densely covered with timber, where brown, cinnamon and grizzly bears, cariboo, mountain sheep and goats abound. It is a ride of but a few minutes from Eagle Pass Landing to the

mouth of Eagle River, where young salmon from six to eighteen inches in length will give the angler all the sport he can wish for. A tramp of a few hours into the mountains will introduce the hunter to game worthy of his rifle—game, too, which has been often known to turn hunter itself, and add excitement, if not pleasure, to the sportsman's adventuresome quest. E. G. JONES.

#### ♦♦♦♦♦ MILES UNDER THE SEA.

MANY curious forms of fishes have recently been found in the deep sea. One fish, dredged from a depth of nearly three miles from the surface, shows a complete modification of structure. It is estimated that this fish has to contend against a pressure equal to two and one-half tons to every square inch of surface. A sealed glass tube, inclosed in a perforated copper covering, has at two miles been reduced to fine powder, while the metal was twisted out of shape. Yet the fishes are so constructed that they withstand the pressure. Their bony and muscular system is not fully developed; the bones are permeated with pores and fissures. The calcareous matter is at a minimum, and the bones of the vertebrae are joined together so loosely that in lifting the larger fish out of the water they often fall apart. The muscles are all thin, and yet the connecting tissue seems almost wanting. Yet these fishes are able to dart about and capture prey.

Sunlight penetrates about 1,200 feet below the surface of the sea. At 3,000 feet the temperature lowers to 40 deg. Fahrenheit, about the same the world over. How do the fishes and other forms here see? Their eyes are modified as well as their other parts. The fishes that live 500 feet from the surface have larger eyes than those in the zone above them, so that they can absorb the faint rays that reach them. In a zone below this many forms with small eyes begin to have tentacles, feelers or organs of touch. Many of these deep sea fishes have special organs on their sides and heads that are known to possess a luminous quality. Other organs are considered accessory eyes, so that the fishes have rows of eyes on their ventral surfaces looking downward, while near are luminous spots that provide them with light. One of the largest of these deep sea torch-bearers is a fish six feet long, with a tail, dorsal fin extending nearly the entire length of the body. The tips of this fin are luminous, and also a broad patch on its head. Along the side of the body is a double row of luminous spots.

One of the most ferocious of these deep sea forms is the *Chlaniodus*. Its mouth is fairly overflowing with teeth, that protrude in a forbidding manner. The fins are all tipped with flaming spots, while along the dorsal surface extends a row of spots that appear like so many windows in the fish, through which light is shining. The little fishes, Bombay ducks, are luminous over their entire surface, and when numbers are collected together they present an astonishing spectacle. One of the most interesting of the light givers is the *Chiasmodon*, a fish attaining a length of only thirteen inches. The top of its head is the principal light-giving organ, and its fin gleam with phosphorescent light.