co-ordinated musculature of fair young maidens to serve and return the ball! The reason is plain enough to the player; but, put in physiological terms, it supports the view I have suggested as to the aesthetic function of the muscular sense.

The muscular mass of the human system is a large one. It makes up forty per cent of the total bodily weight; and leaving out the skeleton, which has a mechanical function only, we are two-thirds muscle. Besides, it is supplied throughout with the nerves which excite it, and with sensory nerves, which notify the brain at once of use and misuse, sickness and health. There may be a fair state of health, but there can be no exuberant vigor, none of the lusty *joie de vie*, without perfectly nourished and perfectly functioning muscles. Thus, when over-used or poorly nourished, we have the sensations of fatigue, weariness, and *malaise*, such as are complained of by thousands of underfed and underworked persons. Furthermore, as the muscle retires, the nerve comes to the front, and we get our nervous women, who are the products, in large part, of insufficient or improper muscular exercise.

There are a few pathological facts in connection with lawn-tennis which may be briefly noted: —

Every new invention and every new sport has its accidents and diseases. For some time English medical journals have had letters about 'lawn-tennis arm,' 'lawn-tennis elbow,' and 'lawn-tennis leg.' The cause of these troubles is generally simple. 'Tennis arm' is caused by a rupture of some of the fibres of the *pronator radii teres*. The front of the fore-arm is tender, perhaps swollen, while pronation and flexion are difficult. In some forms of 'tennis arm' the musculo-spiral nerve, as it passes around the elbow, gets pinched and injured; then there is weakness in extension and in 'back-hand' strokes. In 'lawn-tennis wrist' the anterior part of the annular ligament is stretched, and there is probably a little inflammation of the grooves in which the flexor tendons run.

'Lawn-tennis leg' is due to rupture of some of the muscles of the calf in swift and powerful serving. The muscle ruptured is thought to be the *plantaris longus*.

These 'legs' and 'arms' are more apt to occur in middle age and among too ambitious beginners. They are not of frequent occurrence, and are not dangerous. Rest, rubber bandages, friction, and electricity are sure to bring about a cure.

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LATE NEWS FROM THE NORTH-WEST.

LATE advices from Alaska state that the volcano on Augustine Island, Cook's Inlet, continues to show signs of activity by smoke, noises, and earthquake shocks of light intensity. About the time of the eruption last autumn, between the 23d of September and the 18th of October, eight shocks were felt at Port Etches, in Prince William Sound. At Kassiloff, on the eastern shore of Cook's Inlet, at the mouth of the river of the same name, on the 14th of November, 1883, a tidal wave flooded the salmon-canning establishment of Cutting & Co., and washed away a considerable strip of bluff along the shore for several miles.

Edward Langtry, one of the early explorers of the Lewis branch of the Yukon, in the Chilkat country, has been prospecting on the Kuskokwim and Nushagak Rivers during the past year, and intends to remain another season.

News from the explorers of the Copper or Atna River indicates that they were in July detained at a point where the river passes through a narrow cañon, and a glacier abuts upon it. This glacier, extending over the surface of the stream, nearly closed it to navigation, and an arrangement had just been completed with some of the natives, who were to assist the party to cross the glacier.

News has been received of the return of Lieut. Stoney from his explorations on the Kowak River, emptying into Hotham Inlet, Kotzebue Sound. He had ascended this river, which has been known for thirty years, but never surveyed, to a distance which he estimates at four hundred miles, which is probably meant to include all irregularities. He did not reach its source, as his instructions forbade him to winter there. He has forwarded a report to the Navy department. A party from the revenue-steamer Corwin has also ascended the river this season, and in 1881–82 Messrs. Jacobsen and Woolfe explored its course for some fifty miles. The former has just published at Leipzig an account of the journey under the editorial supervision of Dr. Woldt, a work which has not reached us. The following year Lieut. Stoney, furnished with a boat and party from the revenue-steamer Corwin, Capt. Healy, on which he was a passenger, made some praiseworthy investigations at the mouth of the Kowak and the entrance of Hotham Inlet. These gave rise to some unfounded reports in the daily press that the river was a new discovery. The extent of the stream, leaving minor curves out of account, cannot much exceed two hundred and fifty geographical miles; but it runs through an almost unknown region, and the official reports will, no doubt, add materially to the geographical knowledge of that part of Alaska.

A trading-post has been established at Yakutat Bay by the Alaska commercial company, — the first which has existed there since the destruction by the Indians of the old Russian settlement of 'New Russia' about eighty years ago. The natives have always been treacherous and unreliable. The establishment will be conveniently situated for any adven-

turous spirits who may attempt the exploration of the St. Elias alps and glaciers.

The last advices from the whaling-fleet announce the taking of a hundred and seventeen whales, which is an unusually successful catch. The steam-whaler Bowhead was crushed in the ice, but without loss of life. The party who intended to winter at Point Barrow, in the signal-station buildings, are reported to have reached their destination after several mishaps.

Brown bears have been unusually numerous and fierce on the Aliaska peninsula this summer, and several salmon-fishers have been attacked: one is reported killed.

Several new canneries have been established, one on Bristol Bay, where four hundred cases of canned and thirty-two hundred and fifty barrels of salted salmon were put up during the season.

At Kadiak the summer had been calm and fine, and the hay-crop a success. At the end of the season several severe gales had occurred. Twenty-one thousand cases of canned salmon had been put up by the two canneries on Kadiak Island.

Two Moravian missionaries entered the Kuskokwim region, and were expecting to winter there among the Innuit tribes. They found their knowledge of the Innuit tongue, gained in Labrador, of much assistance. Letters from them are being printed in the *Moravian*, and contain details of interest.

The vacancy in the church at Unalashka, caused by the recent death of the Rev. Innocentius Shayeshnikoff, has been filled by the transfer of the Greek clergyman at Kadiak to the more western post. Shayeshnikoff was well known to the traders and explorers who have visited the port of Unalashka during the last fifteen years. He was a native Aleut, trained in the colonial seminary, and, for his opportunities, a remarkably well-informed and intelligent man. A pupil of Veniaminoff, he partook of the scientific tastes of his preceptor, was always ready to lend assistance to the explorer, recorded the weather and temperature for many years, and was never happier than when he recounted to some interested listener his observations of natural phenomena, or of the anthropological features of his native region. He will long be regretted, not only by the passing visitor, but by his parishioners, to whom he most faithfully ministered.

The Dominion government, during the past season, has had an explorer investigating the capabilities of the Queen Charlotte Islands for settlement or other purposes. We extract the following notes from his report: —

There are about eighty islands in the group, three of which are of considerable size, the largest having a length of seventy and an extreme width of fifty miles. It is pierced by several remarkable and widely ramifying inlets. Along the western border of the group runs a range of high mountains, whose chief peaks reach four thousand or forty-five hundred feet above the sea, often within a few miles of the sea. The land gradually falls in a series of wave-like hills and rugged valleys toward the north-east, where the largest area of level land occurs. There are about fifty thousand acres of grazing-land on the islands, and a good deal of timber, the best of which is on the shores of Massett Inlet. Many trees were found which measured from thirty to thirty-five feet in circumference. The wood is chiefly spruce (Abies) and yellow Alaskan cedar (Chamaecyparis). The temperature was very even, in midsummer ranging from 50° and 60° in the early morning, to about 70° F. at noon. The rainfall is estimated at from fifty to seventy inches per annum. The snowfall on the coast is not heavy, and remains only a week or ten days on the ground. There are about eight hundred Indians of the Haida nation on the group, who were friendly, and do a brisk business in fish-oil and fish. A fish locally known as the 'black cod,' but which is more like a sea-bass, is extremely numerous: thirty of them will yield a gallon of oil. There are many halibut-banks. Bituminous coal exists, and there is a local deposit of anthracite well known to geologists. Little is known of other minerals. A submerged forest was found, off the coast of Graham Island, covering over fifty acres. Many of the trees were petrified, or converted into lignite. The coast is but little known. Dr. George M. Dawson added greatly to our knowledge of it, in an exploration made a few years since for the Dominion geological survey. In one bay a series of six or eight cataracts was observed, having a combined fall of nearly fifteen hundred feet. Game and wild fowl were tame and very abundant.

THE FLORA OF THE HIGH ALPS.

A RECENT paper on the nival flora of Switzerland, by the late Professor Oswald Heer, shows that 337 species of flowering plants are found in Switzerland between 8,000 and 13,000 feet above the sea. All these species are found between 8,000 and 8,500 feet, probably one-fourth having their greatest distribution above 8,000 feet; while twelve were obtained above 12,000 feet. One tenth comprises species belonging to the lowlands, and nine tenths are mountain plants, the majority belonging to the Alpine region proper. Monte Rosa contains the richest nival flora, although most of the species are distributed through the whole Alpine region.

About half of these plants originated in the arctic zone, and apparently came in glacial times from Scandinavia. This arctic flora evidently had its origin on the mountains of the arctic zone, and in miocene times bore the same relation to the flora of the arctic valleys as the present Alpine flora does to the flora of the lowlands of Switzerland. The miocene arctic flora advanced toward Europe as far back as in tertiary times, and in this way the tertiary flora of Europe came into possession of types which now characterize the temperate zone; for instance, the pines and deciduous trees. They gradually gained upon the tropical and subtropical forms, the primitive inhabitants of these regions, and became the parent-plants of a part of the present flora of the lowlands.