THE SWINGING OF CLUBS.

The oldest weapons of man are clubs, that is, strong, thick cudgels, such as are still used by savages. Clubs played an important part in the heroic legends of ancient times, for their bearers accomplished wonders with them. The Greek hero Hercules, who was endowed with supernatural power, was called the "club bearer," and tradition also tells us that Theseus swung the club in the most powerful manner. In old times the Jews, 1223) provided his body guard with clubs. With the progress of culture the use of the club as a weapon has disappeared among civilized nations, giving way to other and more destructive means of defense.

Lately clubs have found favor here in Germany, not as weapons, but as a means of exercising. Wooden clubs are swung in gymnasiums as well as in ordinary rooms for the purpose of bringing the different members into motion by a gradually acquired skill, and use them, and for this reason clubs having a diameter of from 3 inches to 6 inches, and a length of from 15 inches to 30 inches, are recommended as best. To ascertain the right weight, one should take the club by the neck and raise it in front of him or at his side. When raising it in front of him, the outstretched arm should be raised as high as his shoulder, and when raising it at his side it should be lifted sidewise as high as his shoulder. If a club can be held in either of

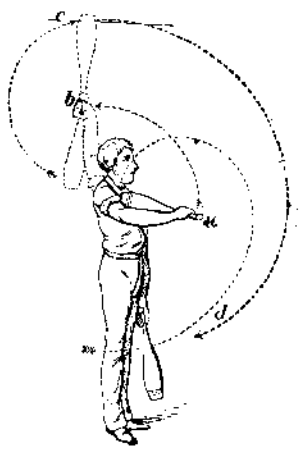

FIG. 1.—Tipping toward the body while lifting, turning upward, and then tipping down while lowering the arm.

FIG. 2.—Swinging diagonally downward with the right and diagonally upward with the left.

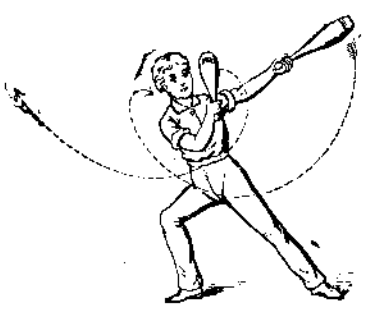

FIG. 3.—Sidewise swinging with a lunge to the opposite side and alternate bending of the knees.

FIG. 4.—Arm circle to the right in front of the body, both hands on one club.

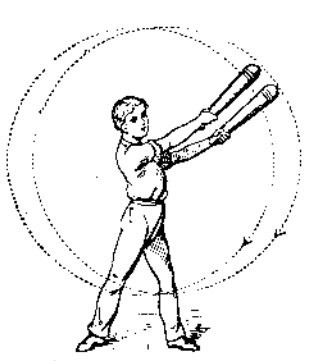

FIG. 5.—Arm circle to the left with both hands in front of the body.

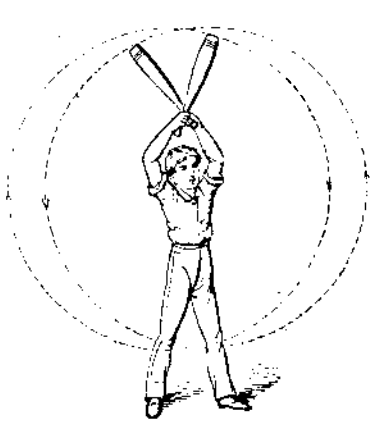

FIG. 6.—Arm circle in front of body, both arms thrown inward or outward.

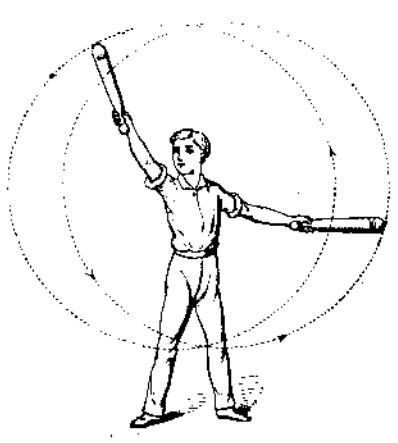

FIG. 7.—Arm circles with one arm in front of the other.

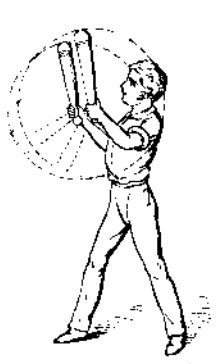

FIG. 8.—Hand circles, forward, outside of the arms.

FIG. 9.—Hand circle forward between the arm and the body, and backward between the arm and the head.

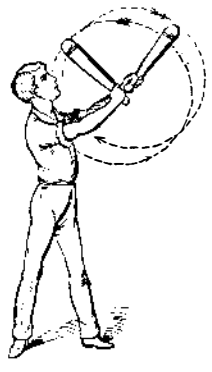

FIG. 10.—Hand circles forward and backward outside and inside of the arms.

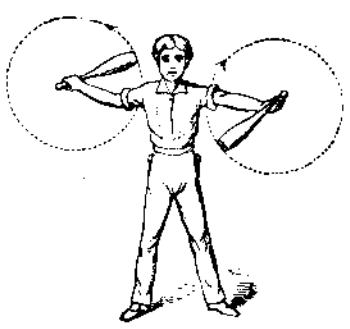

FIG. 11.—Hand circle toward the right (outward) behind the arm, and toward the left (inward) in front of the arm.

FIG. 12.—Hand circles behind the head.

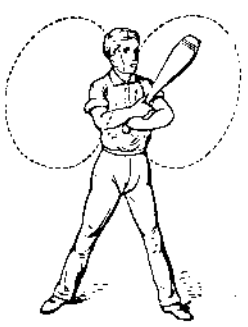

FIG. 13.—"Eight" in front of the body, both hands on the club.

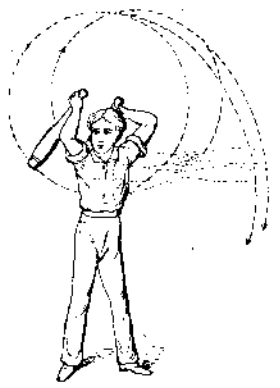

FIG. 14.—Hand circles backward behind the head, and arm circles forward in front of the body.

FIG. 15.—Hand circles in the lowest and highest positions, and arm circles in front of the body.

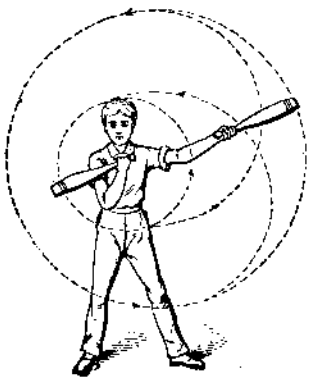

FIG. 16.—Arm circle in front of the body, toward the left, inward, and hand circle toward the left, inward, at the same time.

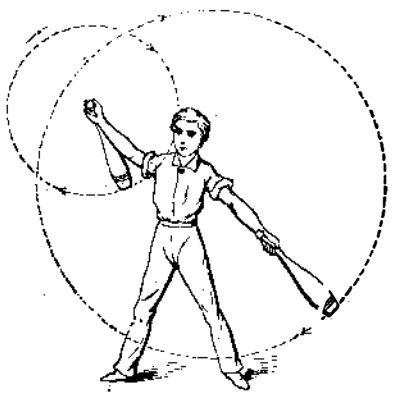

FIG. 17.—Hand circle to the right behind the arm, and at the same time arm circle to the right in front of the body.

FIG. 18.—Arm and hand circles outward.

the Philistines, and the Egyptians, as well as the inhabitants of Northern Europe and Britain, were specially renowned for their use of the club, which was also used as a weapon by the Germans. At the time of the Crusades the inhabitants of Asia knew how to use this weapon effectively. In the battle of Askalon, August 14, 1099, 5,000 Ethiopians armed with iron clubs offered a desperate resistance to the victorious Christians. Later the club was much used by the Italians, and King Philip Augustus of France (1180 to

thus strengthening the body. The club is not a simple weight, the form of which is immaterial in obtaining these motions, but should be of a peculiar shape which is adapted to the end in view, that is, a form suitable for swinging is of more importance than weight. Therefore, one does not speak of practicing with clubs, but of swinging clubs. If the swinging of clubs is to have the desired effect, it is necessary that their length, diameter, and weight should be suited to the bodily strength of the person who is to

these positions for 30 seconds without strain, it is of about the right weight. For beginners, clubs weighing from 2 to 3 pounds are the best, and they can be made heavier after continuous practice, by pouring in lead.

All club swinging is based upon the hand circle and the arm circle. Before beginning to exercise regularly with clubs, lifting, thrusting, and swinging (Figs. 1, 2, and 3) should be practiced. This should be followed by the arm circle with either one or two clubs (Figs. 4, 5,

6, and 7). The hand circle (Figs. 8, 9, 10, 11, 12, 13) presents greater difficulties. The combination of the hand and arm circles completes the course.

The best wood for clubs is white beech or elm; oak is inclined to be brittle and is apt to crack, it is also expensive. Polish is not necessary, but a coating of varnish is recommended. When swinging clubs, such clothing should be worn as will allow a free movement of the limbs, and when exercising in a room care should be taken to admit plenty of good, fresh air. The best time for exercising is before dinner, and after swinging the clubs the muscles should rest for at least a quarter of an hour, as the excitement of the muscles would be a hinderance to the digestion of the meal to be taken. If violent exercise causes palpitation of the heart or rapid breathing, the clubs should be laid aside. The swinging of clubs cannot be too highly recommended to those who lead a sedentary life, and men whose time and occupation do not permit of their attending a gymnasium—for instance, teachers, civil officers, merchants, etc.—should have a room in their dwellings where they can practice with clubs.—*Illustrirte Zeitung.*

The Use of Water at and before Meals.

Opinions differ as to the effect of the free ingestion of water at meal times, but the view generally received is probably that it dilutes the gastric juice, and so retards digestion. Apart from the fact that a moderate delay in the process is by no means a disadvantage, as Sir William Roberts has shown in his explanation of the popularity of tea and coffee, it is more than doubtful whether any such effect is in reality produced. When ingested during meals, water may do good by washing out the digested food and by exposing the undigested part more thoroughly to the action of the digestive ferments. Pepsin is a catalyptic body, and a given quantity will work almost indefinitely, provided the peptones are removed as they are formed. The good effects of water, drunk freely before meals, have, however, another beneficial result—it washes away the mucus which is secreted by the mucous membrane during the intervals of repose and favors peristalsis of the whole alimentary tract. The membrane thus cleansed is in a much better condition to receive food and convert it into soluble compounds. The accumulation of mucus is specially marked in the morning, when the gastric walls are covered with a thick, tenacious layer. Food, entering the stomach at this time, will become covered with this tenacious coating, which, for a time, protects it from the action of the gastric ferments, and so retards digestion. The viscid contents, a normal condition in the morning before breakfast, is not suitable to receive food. Exercise before partaking of a meal stimulates the circulation of the blood and facilitates the flow of blood through the vessels. A glass of water washes out the mucus, partially distends the stomach, wakes up peristalsis, and prepares the alimentary canal for the morning meal. Observation has shown that non-irritating liquids pass directly through the "tubular" stomach, and even if food be present, they only mix with it to a slight extent.—*The British Medical Journal.*

How Machine and Watch Oil is Secured.

At the recent opening of the Horological School at La Porte, Ind., on February 2, 1888, Mr. Wm. F Nye, of New Bedford, gave an interesting lecture, from which we abstract the following:

All wheels need greasing, and the little wheels of the watch are no exception; the proper oil is just as essential to them as the sperm oil to the great Corliss engine that kept in motion the acres of machinery at our late Centennial Exposition, and is now the great motor assisting in working out a great nation's destiny in the thriving city of Pullman, near Chicago.

I have been asked to tell you something that my twenty years' experience may have taught me about greasing these wheels; where and how down on the Atlantic coast we get and prepare the proper oils for watch and clock use. I will not attempt this on any technical or scientific basis, for science yet despairs of defining the varied properties of oil from the different species of fish. When the scientists can tell us where the rose and the lilac gather in spring time their beautiful colors and grateful perfume, they may be able to tell us more than we now know about oils. It is yet as puzzling as the well known fact among horologists that a watch will not keep the same time with two persons. Electric conditions, varying temperature of body, and difference in motion affect the watch; and so it is with the properties of oils from the inhabitants of the vast oceans, stretching from the ice-fettered poles and across the torrid belts, conditions as widely vary with them.

In all my observation of food of fishes, and study of the same during passages I have made over the three great oceans, my theory is (for the naturalist may dispute me if I call it else than theory) that the species of fish that take their food in the sunlight on the surface of the ocean generate a very superior oil, and in most species hold it in reservoirs about the head, and afford us an oil of finer texture for lubricating purposes, while those that root out the bivalves from the grand banks of Newfoundland or the shifting sands along our coast, and delve into the dark cave of ocean for kelp and mollusk, as their food, furnish but an indifferent oil, fit only for the currier's use or the miner's lamp.

Doubtless the tender Mother Carey's chicken and tireless albatross, ever upon the wing over the southern oceans, become food for many, while others forage amid the immense schools of sardines and herring that annually migrate past the maelstrom of Norway, while yet others, like the sperm whale and its smaller cousins, the *black fish* and *porpoise*, sport and tumble in warmer seas on both sides of equator, skimming the animalcules, the sun fish, jelly fish, and squid that a tropical sun awakens to life.

Down on the coast, "down East," as you would say, the term "happy as a clam at high water" is familiar. The clam loves a deep sea over his sand bank home, but like our friends in Dakota, he is often disturbed by blizzards and gales, and the heavy sea rolls them in windrows from their snug beds, when the swarming schools of cod, hake, and haddock do not wait for an invite to the feast, and our fishermen declare that in a few days after a gale they become remarkably fat, and these are furnished by your grocer as the codfish *par excellence* to roll with your potato into the very relishable fish ball. Not so with our fishes of fine watch oil fame, the *black fish* and *porpoise*. They bask and sport in the sunbeams, where the myriads of small fish seek their life. Like the locusts that we have learned visit our forests once in seventeen years, there come to our New England shores, at long intervals, vast schools of a little fish called the squid, though the latter make us two visits to the locust's one, coming at intervals of nine years, so that our hardy fishermen of Cape Cod and Cape Ann very safely reckon the time for "another haul," as they term it, of black fish, that are sure to follow the squid. In the last school that came to us, in November, 1884, which proved the largest ever known in the history of sea fishing, 2,200 were taken, and, in all probability, but few of that school that entered Cape Cod Bay escaped, as it is computed fully 600 boats "lent a hand" in the pursuit and capture. The presence of the little squid, that swim either end foremost, first attracts the attention of the fishermen, who are out in their boats from every inlet along the coast when the watchword is given, "Black fish are coming!" and ere long they "break water" in the outer bay. Boats are now manned with extra crews, armed with harpoons, knives, and hooks. General Grant tactics of "flanking them" are adopted. They get outside and around the unwary fish, so eager for their prey, and slowly "shoo" them into shallow water, bayou and creek; and when a few, touching the shore, begin to fluke, others will follow, presumably to see what is the matter, when overboard go the men from the advance boats, and the slaughter commences. Only a portion of the school are obtained at this time.

A separate portion are driven in other inlets, where they are held till the tide recedes, when they are butchered, and by a strong hook and line drawn by a gang of men to where the "whale cast Jonah." Many days elapsed before this school of 1884, of which I speak, were all taken, and divisions of it were secured from Provincetown to Barnstable, a distance of fifty miles.

We were early upon the scene to share in this "streak of fisherman's luck," for we were at the time lamenting our very short supply of the particularly fine oil yielded only by the jaws and heads of these fish, to enable us to maintain the reputation of Nye's watch and clock oils; and the first train took us along these sandy shores, where the pilgrim fathers had traveled and braved a stormy winter, just 264 years before. The scene was, well, not to say beautiful, at such slaughter of an ocean tribe, but it was not a little picturesque and exciting. Everybody "took a hand" and "came in for a share." Our time had come. We bargained and arranged for the heads of these fish, the greater part of which it was our good fortune to secure, and proceeded at once to cut the "jaws" and so-called "melon," which is much in the shape of a half melon on either side of the head, and from which the name is derived. It was not only the largest, but in every way the finest, lot of watch and clock oil stock ever secured. It seemed to have come, too, at a time when the immense production of watches and clocks the world over demanded a better and more abundant supply of reliable oil adapted to their requirements. An important peculiarity of this oil, and in which it differs from all others, is that it improves by age, a phenomenon proved by long experience in preparing it for use and accounted for by alternate gathering and emission of moisture upon exposure to changes of temperature, as by this and after treatment it does in time become permanently clear and brilliant, and in consequence of which we seldom use it in the same year obtained.

Amid our processes of preparing this oil, especially for the watch and clock trade, we find that filtering at a very low temperature is the one thing most essential, and as, in the latitude of New Bedford, where our factory is situated, we are seldom favored with temperature below zero, we have established a plant on the borders of Canada, at St. Albans, Vt., where we "chill it down" and render it brilliant at an average temperature of 25 degrees below zero. Last year we were able to filter at 37 degrees below. By this process we discover that with reduction of temperature the specific gravity or density of the oil increases and finer grain and texture are secured, giving increased resistance to the effects of both heat and cold, and especially to the changing conditions of the body upon watches carried in the pocket, and assuring in an eminent degree the non-drying properties so essential to a lubricator for accurate timers.

At no time in the preparation of these oils do we use acids or alkalies, but retain them in their native purity to the fullest extent. Extreme care is used in cutting out the "jaw melon," that no blood may come in contact with the parts, for blood engenders an acid that soon permeates the oil; neither is any of the outer black skin of the fish allowed to go into the kettles in the process of rendering, as it imparts a discoloration that can only be extracted by caustic and sun bleaching, which unfits the oil for use upon the delicate parts of fine watches. As I have said, our improved processes of refining these oils at a very low temperature free them perfectly from all impurities that corrode and blacken the pivots of a watch, and cause them to be entirely unaffected by heat and cold.

In regard to oils prepared for watch and clock use from vegetable or animal oils, every attempt has proved a failure. I very thoroughly investigated this during my trip over Europe last year, where every oil I met with, save our American oils, was more or less prepared from the olive or joints of animals, and our importers of French and German timers are now protesting against the further use of European oils upon goods sent them. They quickly evaporate, and corrode or gum upon the watch.

The Diet of Different Peoples.

The vagaries of the appetite are far beyond the explanatory science of physiology. What we call tolerance in medicine is in itself a mystery. We cannot tell why this thing agrees with this individual and at the same time utterly destroys his brother. The trite old saying that one man's meat is another man's poison must be accepted empirically. Still less can we account for the variations of taste. Why one man's gustatory nerve should respond agreeably to salt, while another's repels it with violence, we cannot understand. Doubtless, education has most to do with it, and yet the manner in which education operates continues a mystery. The preference of the Chinese for food that seems to our appetites absolutely disgusting is well known. In Canton, rats sell for fifty cents a dozen, and dogs' hind quarters command a higher price than lamb or mutton. Fancy, eating birds' nests worth $30 a pound! This is what a mandarin revels in. The French have beguiled us into eating frogs' legs, which were once tabooed in this country, and we have even come to esteem diseased goose liver in the form of *pate de foie gras.*

The writer has met Brazilians who rave over boa constrictor steaks, and count monkeys and parrots a very good meal. In the West Indies, baked snake is a common dish, as the reptiles abound, and it is a good way of getting rid of them. But when it comes to frying palm worms in fat, one would think the stomach would rebel. It is not so, however, though, by a strange inconsistency, stewed rabbit is looked upon with disgust. On the Pacific coast the Digger Indians eat dried locusts, and in the Argentine Republic skunk flesh is a dainty. Our own favorite bivalve, the oyster, is very disgusting to a Turk, while the devil fish, eaten in Corsica, is equally so to us. We cannot understand, either, how the inhabitants of the West Indies and the Pacific coast can eat lizards' eggs with a relish; still less, how the eggs of the turtle and alligator can become a favorite article of diet. The Brazilians eat ants, probably to get rid of them, for they literally infest the country, and are of an enormous size. It is easy to pick up a handful of ants almost anywhere, though the wary do not go about it in this way, as the pestiferous insect bites in a most vicious manner. A curry of ants' eggs is a great delicacy in Siam, and the Cingalese eat the bees whose honey they have stolen. The Chinese, who seem to have stomachs like the ostrich, eat the chrysalis of the silkworm after unwinding the cocoon. Spiders are used in New Caledonia as a kind of dessert, while caterpillars are also relished by the African Bushmen.—*Philadelphia Medical Register.*

Mosquito Fumigating Pastilles.

Charcoal	1 lb.
Saltpeter	2 oz.
Carbolic acid	1½ "
Persian insect powder	8 "
Tragacanth mucilage	q. s.

To clear a room of mosquitoes, take a small piece of gum camphor in a tin vessel and evaporate it over a flame, taking care it does not ignite. A sponge dipped in camphorated spirits and made fast to the top of the bedstead will be found serviceable in the sleeping room. Decoction of pennyroyal, applied to the exposed parts, will effectually keep off these troublesome insects.—*American Pharmacist.*