THE MAXIM AUTOMATIC MACHINE GUN.

BY HUDSON MAXIM.

The Maxim gun has already been described in these pages. The object of the present paper is to describe its operation more fully and illustrate in greater detail the various parts of this gun, so that its principle of action may be thoroughly understood. Since its introduction, this gun has met with marked success, and has been adopted by nearly all the European powers, including England, France, Germany, Italy, Switzerland, Austria, and Russia. The gun is soon to be tested at the proving grounds at Annapolis, with a view to procuring its adoption by the United States government. The speed of fire of the rifle caliber gun using the American cartridge is very high, being 700 per minute. The one pounder will discharge 400 shots per minute. A six pounder adapted to fire shrapnel and grape canister will discharge at the rate of 150 per minute. This description relates only to the Maxim mitrailleuse or machine gun of rifle caliber; but the employment of automatic action, though modified, is essentially the same in the Maxim system of guns of larger calibers. The Maxim automatic mitrailleuse is so constructed that, on firing a single shot to start the gun, the force of the recoil is utilized for extracting the empty cartridge case and for effecting the various operations necessary in reloading and again firing the arm, or preparing it for the next discharge; so that, after the gun has been started by once pulling the trigger, all these operations are performed automatically, and the gun continues firing with great rapidity, so long as the trigger is held in a pulled position and the supply of cartridges lasts.

The operation of the gun is, briefly, as follows:

In starting the gun, the breech mechanism is operated by hand to insert the first cartridge in the barrel, and the trigger is then pulled by hand to fire the first shot. The backward force of the explosion is received by the breech block, which recoils and carries the barrel backward with it. In the recoil, the breech is opened, the empty cartridge case is extracted, the hammer is cocked, and another cartridge is brought into position to be thrust into the barrel. The energy of the recoil not consumed in performing the above operations is stored up in a spiral spring, which, by its reaction, effects the return of the barrel to the firing position, thrusts the live cartridge into the barrel, and closes the breech. The moment the breech is closed the gun is fired automatically, the gunner having nothing to do but to point or aim the gun and hold the trigger in a pulled position.

The gun practically consists of two portions—a recoiling and a non-recoiling portion. The recoiling portion embraces the barrel, the lock, the crank, the breech block, and an inner frame with guides and bearings on which the said mechanism operates.

The recoiling portion is, in reality, the gun proper. The outer, or non-recoiling, portion may be justly considered the carriage on which the gun operates. Reference is to be had to the accompanying drawings forming a part of this description, in which similar figures of reference indicate corresponding parts in all the cuts.

Fig. I. represents the gun in action, with spare boxes of ammunition placed on the mounting, and shows the empty cases being thrown out in front.

Fig. I.—MAXIM MITRAILLEUSE IN ACTION.

Fig. II. is a view of the outside or non-recoiling portion of the gun, which is mounted on trunnions, and has attached traversing, elevating, and depressing gear, and is provided with handles and sights for aiming and a trigger for firing.

Fig. III. is a longitudinal central section of the gun, with all the parts in the positions of "ready" for firing, on the trigger being pulled.

Fig. IV. is a plan view of the gun with the cover, 32, seen in Fig. III, removed, and other parts in section to display the mechanism.

Fig. V. is a perspective view of the feed box and part of its mechanism for feeding the cartridges to the gun.

Fig. VI. is a view of the recoiling portion of the gun, tilted over so that the breech mechanism may be seen in perspective from the bottom. The outer or non-recoiling portion constituting the gun frame is not shown, and the parts are seen in the positions which they occupy when the breech block is at the rear end of its stroke or movement.

Fig. VII. is a view of the portion termed the bolt. It is shown tilted over, and its parts are seen in perspective and from the front and left hand lower corner, displaying the mechanism which constitutes, at once, the

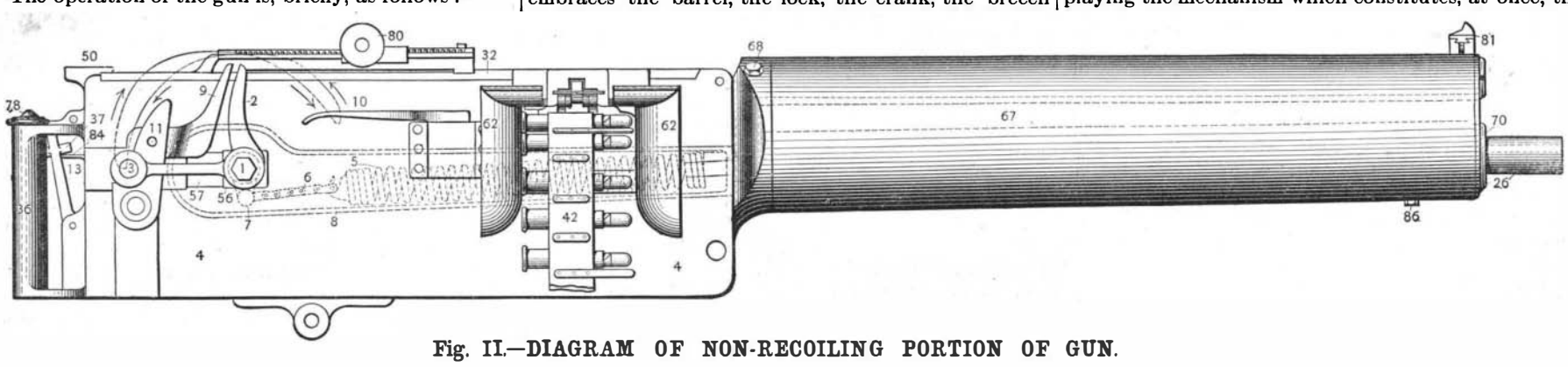

Fig. II.—DIAGRAM OF NON-RECOILING PORTION OF GUN.

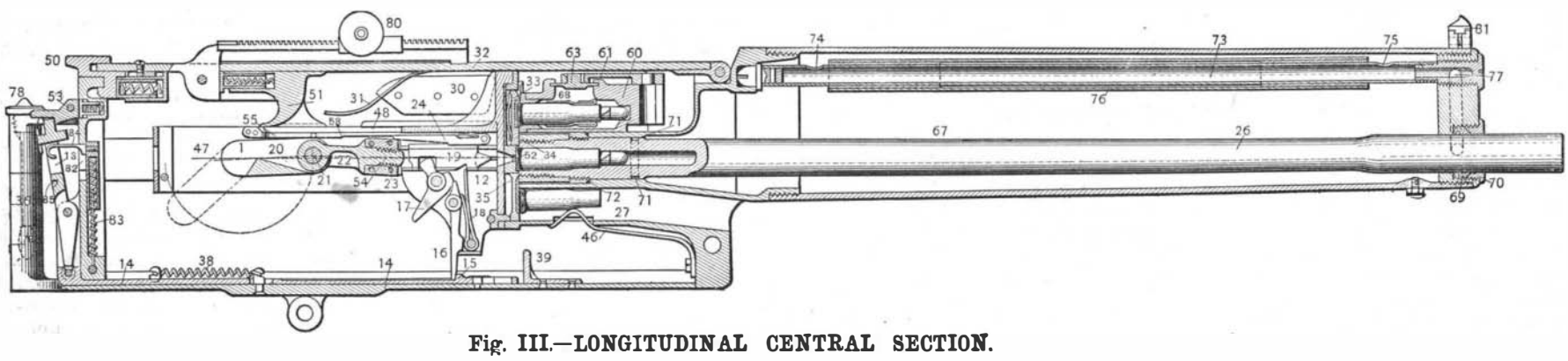

Fig. III.—LONGITUDINAL CENTRAL SECTION.

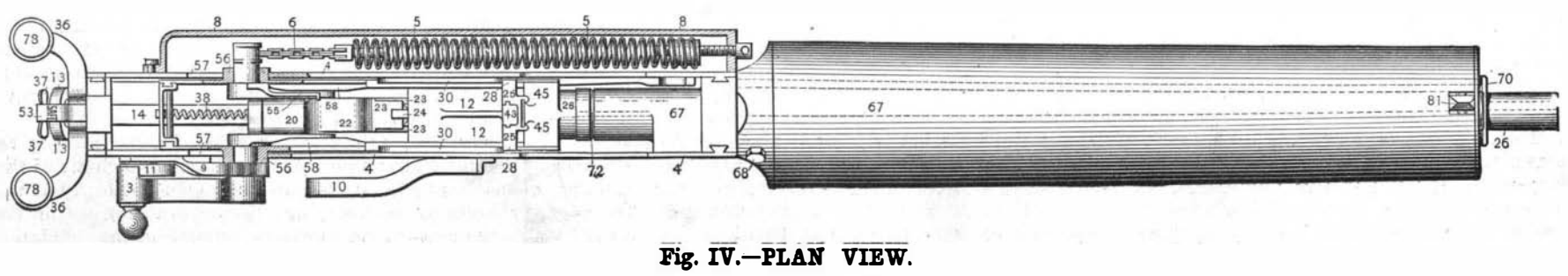

Fig. IV.—PLAN VIEW.

lock, the breech block, and the cartridge carrier and extractor. It will be seen from this figure that in the handling of the loaded cartridge and the extraction of the empty case, the cartridge case is firmly seized at both sides of its head, no spring extractor being used. Very nearly all the machinery in the gun is contained in this one piece or bolt, which is quite small, and may be carried in a soldier's pocket. As this bolt is the only part of the gun which stands in any danger of breaking or becoming disarranged, it will be seen that such machinery of the gun is practically in duplicate, as each gun is provided with two bolts, one of which may be removed from the gun and may be replaced by the other in about five seconds.

All the parts shown in full lines in Fig. II. remain stationary when firing, with the exception of the outside crank arm or elbow lever, 2, 3, which is fixed to the crank wrist or shaft and forms a part of the recoiling portion, or gun proper, which is mounted inside of the gun frame, 4, in such a manner that when fired the recoil moves it back about one inch.

On the left hand and outside of the gun, or at the side opposite the crank, 2, 3, there is attached to the crank shaft, 1, a spiral spring, 5, by means of a chain, 6, and a small fusee, 7, as shown in dotted lines.

In Fig. IV. the spring box, 8, which contains the spiral spring, 5, is shown with the top removed, displaying the said spring with its chain connection to the crank shaft, 1.

When the gun is fired, the arm or cam, 2, of the crank 2, 3, which belongs to the recoiling portion, is brought in violent contact with a stationary point of resistance, 9, fixed to the gun frame, 4, the effect of which is to forcibly turn the crank shaft, 1, and cause the crank handle or arm, 3, to strike a buffer spring, 10, held outside the gun frame, so that, when the crank handle, 3, is resting on the buffer, 10, the spiral spring, 5, is not only extended one inch by the recoil, but the winding of the chain on the fusee causes a still further elongation.

Thus when the crank handle, 3, has been brought to a state of rest on the buffer, 10, the action of the spiral spring is first to pull the barrel and the whole recoiling portion back into firing position, and then to turn the crank to restore the bolt to firing position. As the crank handle is brought back to this position it strikes the dead stop, 11, which is pivoted to the gun frame and rocks on its pivot to receive the blow in such a manner as to prevent all rebounding.

In the longitudinal central section, Fig. III., all the parts are in the positions of "ready" for firing on pulling the trigger. The lock employed is very similar to that used in the old fashioned single barrel pistol, namely, a firing pin, a main spring, a hammer, and a sear. All these parts are mounted in the lock or bolt, 12.

When the upright trigger, 13, placed between the vertical handles, 36, is pressed, the rod, 14, is drawn backward and its projection, 15, engages the lower end of the sear, 16, thus releasing the hammer, 17, and the main spring, 18, then throws the firing pin, 19, violently forward to strike the primer and explode the cartridge. A spring, 38, returns the trigger and trigger rod to the cocked or freed position on removing the pressure.

All the operations of the breech mechanism are effected by the reciprocating movements of the outside crank, 2, 3.

The gun crank has an arm, 20, which is inside the gun frame, 4, and stands at right angles to the outside crank arm, 2. To this arm, 20, is pivotally attached the rear end of a connecting rod, 22, 23, the part, 23, of which straddles and is pivoted to the breech block, 12. Therefore, when the outside crank is turned forward, the inner crank arm, 20, is thrown downward and backward, as shown in dotted lines, Fig. III. The part, 23, of the connecting rod is thus brought in contact with the tail of the hammer, 17, pressing it down, drawing back the firing pin, and compressing the mainspring until the sear, 16, engages a notch in the hammer and a safety sear, 24, engages a notch in the firing pin. At the same time the breech block is withdrawn from the barrel, the empty cartridge case is extracted, a fresh cartridge is drawn from the belt, the carrier, 25, is lowered, and the live cartridge is brought in line with the barrel, 26, and the empty case in line with the discharge pipe, 27.

Projections, 28, on the carrier, 25, during the recoil and the opening of the breech, slide on cams, 30, on the frame, 4, whereby the carrier is held up until the empty case is extracted and a fresh cartridge is drawn from the belt. The lowering of the carrier is then effected by gravity assisted by a spring, 31, attached to the inside of the cover, 32, of the frame, 4. The carrier is guided and held steadily in its forward movements by the projections, 28, which slide in contact with the under surfaces of the cams, 30, until the breech block is home. The carrier, 25, has spring catches, 33, 34, and 35, which with its grooved side flanges hold the live cartridge and the empty case in their proper places in the carrier, as is well shown in the Fig. VII.

Cams, 40, in the closing of the breech, act on other

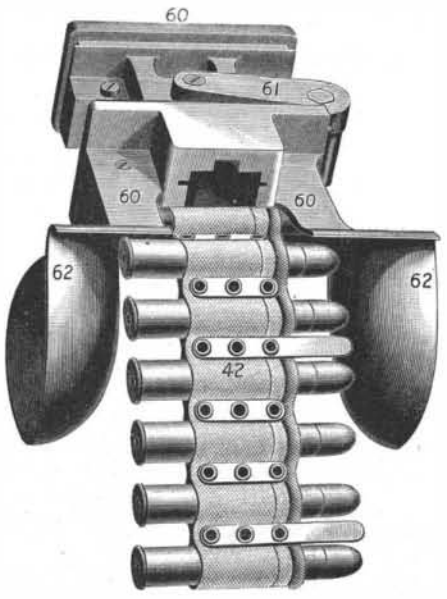

Fig. V.—FEED BOX.

cams on a lever, 41, to lift the carrier, 25. As the carrier rises, the spring, catch 33, yields and passes over the head of the loaded cartridge, in a belt, 42; the spring catch, 34, also passes over the head of the cartridge in the barrel, and the spring catch, 35, passes over the head of the empty cartridge case in the tube, 27, the carrier freeing itself from the empty case and at the same time taking firm hold of the fresh cartridge in the belt.

Grooves, 45, in this carrier, 25, are made to fit the flanged head of the cartridge, so that when the carrier rises, the cartridge is seized at both sides of the head, and while thus firmly held, the cartridge is extracted from the belt, performs its backward and forward movement with the breech block, and enters the barrel of the gun with unerring accuracy; its empty case is extracted therefrom, and it again retreats and advances with the breech block to be delivered into the discharge pipe, 27, where it is held by a spring, 46, until thrust out by the succeeding empty case.

The firing pin, 19, slides between guides in the breech block, and can strike the cartridge only through a hole, 52, in the carrier, 25; therefore, it can fire the gun only when the carrier is at the top of its stroke and the breech is closed, as shown in Figs. III, IV. The safety sear, 24, also secures the gun against firing until the breech is closed, by which action in the rising of the connecting rod, 22, 23, the sear is lifted, thereby releasing the firing pin. There is also a small safety catch, 53, which may be dropped down when done firing, and thus secure the trigger against being pulled until the catch is again lifted and thrown back by hand for that purpose.

In the continuous working of the gun, the empty cases are thrust one after another into the tube, 27, and are ejected therefrom with considerable force by the impact received from each succeeding case as it enters the tube.

The two parts, 22, 23, of the connecting rod are joined by means of an interrupted screw, 54, whereby after the bolt is lifted out of its guides it may be given a quarter turn and removed from the gun, inspected, and returned, or replaced by a new bolt, all in a few seconds. There is a small spring catch, 55, attached to the inner side of the recoiling frame, 47, which, when the part, 22, of the connecting rod is raised to remove the bolt, holds said part in place for more convenient reattachment of the bolt.

The crank shaft, 1, is supported in bearings, 56, which are formed on the inner recoiling frame, 47, and extend through slots, 57, in the outer gun frame, 4, these slots being of sufficient length to permit the required recoil of the frame, 47, and its connected mechanism.

When the breech is closed the crank arm, 20, is slightly above its forward dead center, and bears against stops, 58, on the recoiling frame, 47. Therefore, during the period of explosion, the breech block is firmly locked to the barrel and supported against the force of the explosion, so that the barrel, the crank, and the frame, 47, or the whole recoiling portion of the gun, will recede together until the crank arm, 2, strikes the point of resistance, 9, as above described, which throws the crank forward, opening the breech at first slowly, and then more rapidly as the recoil advances. Thus the empty cartridge case is started from the barrel of the gun, at first very slowly, as is in like manner the live cartridge from the belt. By far the larger portion of the time between discharges is consumed in the opening of the breech, so that ample time is allowed for the pressure of gases to escape from the barrel before the breech block is withdrawn from it.

The feeding of the cartridges into the gun is accomplished in the following manner: The cartridges are placed in the belt, 42, formed of two pieces of tape fastened together by eyelets and brass strips. The belt is made thick at the edge next the bullets by being folded over a cord, as shown, so that the cartridges may lie even in their magazines, while every fourth brass strip is made to project beyond the bullet edge of the belt a distance equal to that of the bullets, thus rigidly maintaining in the magazine the exact position of the cartridges in the belt.

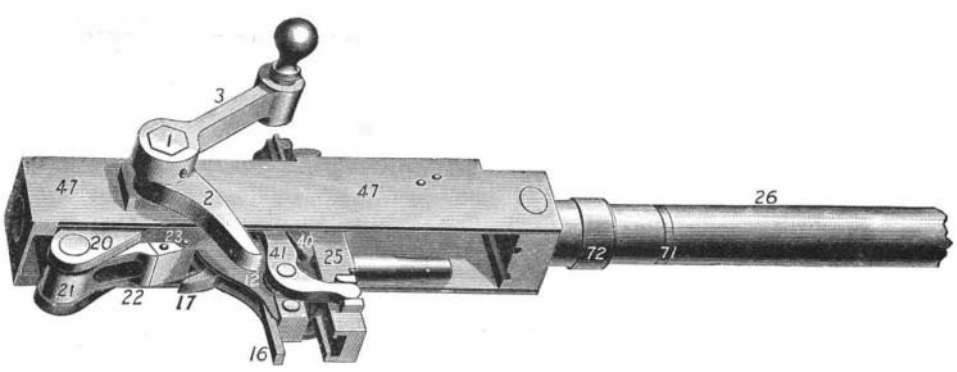

Fig. VI.—THE RECOILING PORTION OF THE GUN.

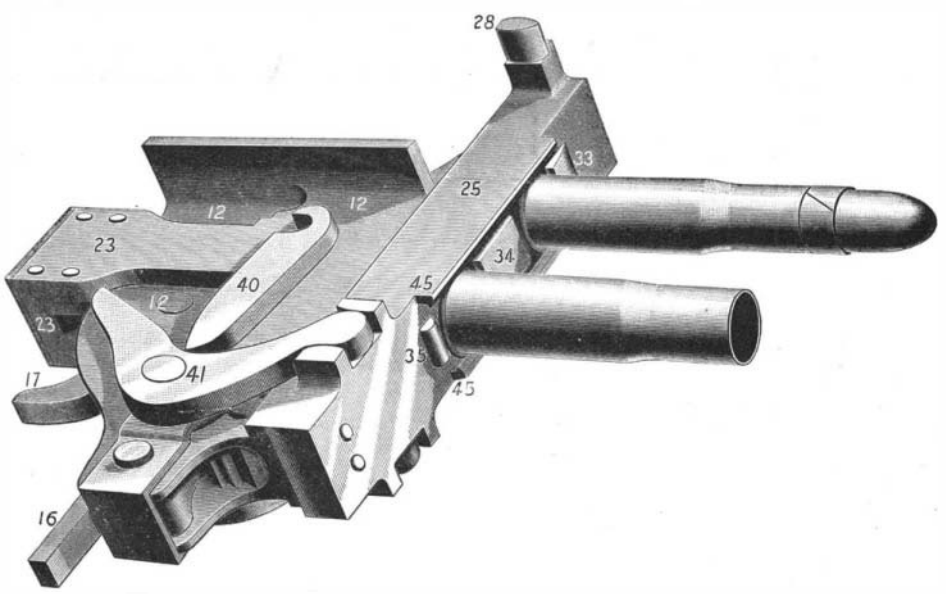

Fig. VII.—REMOVABLE BREECH BLOCK, CARTRIDGE CARRIER, AND LOCK.

The box or magazine which contains the belt, 42, filled with cartridges is placed in or on the mounting, and one end of the belt is passed through the feed box. Spare boxes of ammunition may be placed and transported on the mounting. The lever, 61, shown at the top of Fig. V., is operated in such a manner by the reciprocating action of the barrel that the cartridges are drawn into position one by one. The curved guide pieces, 62, keep the belt of cartridges in the proper position as it enters the feed box.

The gun frame, 4, has firmly attached thereto a cooling chamber or water jacket, 67, through which the barrel, 26, is arranged to slide longitudinally. The water jacket holds when full about 2½ quarts, and is filled through a hole at its rear end, which is closed by plug, 68. Water tight joints are secured about the barrel in the following manner: At the forward end of the barrel there is a stuffing box with packing, 69, and a gland, 70, which screws in and tightly compresses the packing around the barrel. At the rearward end of the barrel there is a piston ring, 71, which prevents escape of water when the gun is working, and there is a valve, 72, which seats itself, preventing escape of water when the gun is not firing and the barrel is home.

By taking hold of the handles, 36, the gun may be pointed in any direction and controlled as freely as the discharge pipe of a common fire engine hose, while the thumbs fall naturally into the required position for the instantaneous manipulation of the trigger. Thus a stream of bullets is under the perfect control of the

gunner, and may be directed instantly at any desired angle of elevation or depression or spread over any area. By means of sights, 80, 81, as accurate aim may be taken and as good a target made as with any rifle. The rapidity of fire of the gun ranges from 600 to 700 shots per minute, according to the type of cartridge used.

Natural History Notes.

The Lethargic Sleep of a Swallow.—At a recent meeting of the Society of Naturalists, says *La Nature*, Mr. Leroux made a very curious communication upon a subject that has many times been discussed, that is, the possibility of swallows and martins passing the entire winter in a deep sleep comparable with that of hibernating animals. Mr. Leroux exhibited to the society a live swallow, and told its history. The bird had been knocked down by a coachman's whip last October, had fallen into the mud, and was unable to resume its flight. It was picked up by a child, washed, and wrapped up in a roll of wadding, which was put into a drawer and forgotten. A few days before Mr. Leroux made this statement, the roll was taken out by accident, and the bird was found alive, but plunged in a lethargic sleep. The bird was awakened in the presence of the society and set at liberty.

Algæ Parasitic upon Mammals.—Some years ago, the greenish color of some of the sloths was attributed to the presence of an alga upon the hair. Madam Weber von Bosse has recently described two genera and three species of these parasitic plants. The new genus, *Tricophilus*, is green, the other, *Cyanoderma*, with its two species, is violet.

From 150,000 to 200,000 individuals of these algæ may occur upon a single hair.

The Nest and Eggs of the Alligator.—Dr. S. F. Clarke thus describes the eggs of the alligator in a recent number of the *Zoologischer Anzeiger*. The eggs and young alligators are such common objects in the shop windows in many of the Southern States, that it appeared to be a simple matter to secure the eggs at the right time and in abundance. It proved, on the contrary, to be very difficult. I was assured by various hunters in Florida that each month from January to September inclusive was the only month in which the alligators lay their eggs, and this resulted in my having to make two journeys of over twenty-six hundred miles each.

The nests vary much in size, the largest being about 2½ meters in diameter at the base, and 80 cm. high in the central part, the whole having the shape of a rounded cone. They are located generally on a slightly elevated place, which is higher by a meter or slightly more than the surrounding level, and covered with a thick growth of palmettos, mangroves, magnolias, etc. These are called "hummocks" by the natives. On one side of the hummock at least, in some cases on all sides, is a pond from one to two meters in depth, and in the bank, under water, the female alligator digs a cave, which in some cases extends three meters under the hummock, and which is always close to her nest. The nest is made by scratching together a great pile of dead leaves and twigs and humus which forms the surface of the ground, and which is arranged with some care. The inside is made of the more finely divided—almost powdery—material of the deeper layers of the top soil, while the outside, even to the top, is covered with twigs and leaves which are whole or but little broken, and with many of the long, unbroken leaves or needles of the southern pine. The eggs are deposited about 20 cm. from the top, and in the nests were found lying on top of one another, making rows or layers, with the fine humus filling all the interstices. The top of the nest is always exposed to the sun.

Dr. Clarke describes the eggs as very difficult to manipulate, as the shell membrane is tough, and the white very sticky.

The Origin of Sweet Corn.—While the history of the origin of the sweet variety of Indian corn shows it to be quite modern, its existence seems to have been known in New England as early as 1779, when a few ears found among the Indians on the Susquehanna were brought to Plymouth by an army officer.

In a very exhaustive history of Indian corn by Dr. Sturtevant it is stated that sweet corn is not referred to by Jefferson in his "Notes on Virginia," in 1781, nor by Thorburn in 1817, nor by Fessenden in 1828. In 1832 "sweet or sugar corn" is mentioned among garden vegetables by Bridgeman. In 1851 Buist mentions two varieties. In 1853 Salisbury says of the "early sweet corn," the variety introduced by Captain Bagnol, of Plymouth, that one kind has a white and the other a red cob. In 1854 Schenk mentions the extra early, the eight-rowed sweet and Stowell's sugar, which had been brought into notice within a few months. In 1858 Klippart mentions in addition the mammoth sugar. In 1866 Burr describes twelve varieties. The seed catalogue of Thorburn in 1828 offers one variety, the sugar or sweet; in 1881, sixteen varieties; in 1888, twenty-six varieties.

However this sort, as distinguished from Indian corn, may have originated, it has furnished a notable example of the influence of cultivation, until it has become an indispensable article for the table in its season, and one of the most highly prized vegetables for canning. So numerous are the present varieties that from twenty to thirty are usually advertised by leading seedsmen.

Podophyllum peltatum.—In a communication to the *Journal of Botany* on a new Japanese genus of *Berberidaceæ*, Mr. T. Ito takes occasion to state that the occurrence of *Podophyllum peltatum* in Japan is beyond a doubt, it being found in the province of Shinamo, thus constituting another habitat for this plant besides those on the American continent, and affording another example of the similarity of the flora of Japan and the Atlantic coast of the United States.

Wood Cloth.

Mitscherlich has applied the bisulphite process for reducing wood to the production of a fiber from wood which can be spun.

Thin boards or laths free from knots, but of any desired width, are cut into strips in the direction parallel with the grain, and are then boiled in a boiler containing a solution of sulphurous acid or bisulphite. This boiling effects disintegration without requiring that the strips of boards shall be reduced to very small pieces. After boiling the wood, it is dried in the open air or in specially constructed drying rooms. By thus drying the product, the fiber, which is originally very weak, and tends to break at the slightest strain, becomes comparatively strong and does not resume its very breakable condition on the addition of water. The operations are carried out as follows:

The damp masses on the frame are transferred to a traveling endless cloth, which leads them to a pair of rollers, which may be plain or provided with corrugations in the direction of their length, the ribs of the one roller being made to gear into the recesses of the other one, whereby they effect a simultaneous strong bending and squeezing of the masses. The cutting of the material in passing through the corrugated rollers is avoided by causing the endless cloth to pass over the lower roller and by placing a canvas covering around the upper roller. The pressed masses fall from these rollers on to a second endless cloth, which conveys them to a second pair of rollers, from which they are conveyed to a third pair, and so on, they being preferably pressed in this way six times. By continued treatment of the wood the fibers become at length so pliable and isolated from each other that they can be employed directly for coarse filaments. For obtaining a perfect isolation of the fibers, however, without material deterioration, these operations alone are not suitable, and their special purpose is to loosen the fibers in the transverse direction, so that in the following operation a thin, long fiber may be obtained. For this purpose the boiled and pressed masses are completely dried. After drying they are combed in the direction parallel with the fibers by means of devices provided with pins or teeth, in a manner similar to the operations for combing flax, cotton, etc., but with the difference that the pins or teeth of the apparatus must be made very strong. The separation of the extractable matter from the fiber produced by boiling the gums and soluble organic matter can be effected at any time. It is, however, preferably effected after the fiber has been spun into threads, etc.

The Cocoanut Palm.

The government press at Madras recently issued "A Monograph on the Cocoanut Palm, or *Cocos nucifera*," by Dr. John Short, which, the introduction tells us, was written at the request of the Director of Revenue, Settlement, and Agriculture. The author begins, says *Nature*, by pointing out the area of distribution of the cocoanut tree. It is indigenous in the East, and is now largely cultivated on the coasts of India and Ceylon, and in the islands of the Eastern Archipelago. There are as many as twenty millions in the southwest of Ceylon. The palm frequently grows wild in distant and isolated islands, whither the germ has been borne by the sea, the thick fibrous padding around the nut protecting it from the action of the water. So we constantly see that coral reefs, as soon as they make their appearance above the surface of the water, are taken possession of by these trees. The seashore is the home of the palm; it grows quite down to the water's edge, and is in many places constantly washed by the waves. Thus, along the Brazilian coast for a distance of nearly 280 miles, from the river San Francisco to the bar of Mamanguape, these trees extend. We also, however, find them far inland, and at the height of several thousand feet above the level of the sea. At Bangalore they flourish and produce fruit in abundance at a height of 3,000 feet above the sea level. From a dietetical and economical point of view, the cocoanut palm is a most valuable plant; sugar, starch, oil, wax, wine, resin, astringent matters, and edible fruits are its gifts to man. An alluvial or loamy soil is the most suitable for planting it, and no more than eighty plants an acre should be planted to get the maximum amount of fruit possible. Nuts obtainable from trees of from fifteen to thirty years old are the best for planting. There are numerous varieties of this tree, there being as many as thirty in Travancore alone. One dwarf variety bears fruit when it is only two feet in height. Toddy is the sap of the cocoanut palm, and when the toddy drawer wishes to get out the sap of the tree, he binds the flower spathe tightly with fibers of the tree, and beats it twice a day for three or four days with a short stick. The top is then sliced, and as soon as the sap begins to flow, a vessel, either earthen or made of bamboo, is tied to the spathe to receive the sap. The spathe is kept bleeding by making a fresh wound in it each day. The fluid, when fresh, has a pleasant taste, and is slightly aperient. When kept for a few hours, it ferments and becomes somewhat intoxicating, and it may then be distilled into spirits or vinegar. With bakers it takes the place of yeast. The quantity of toddy taken out varies with the age and locality of the spathe, but the average quantity obtained for two or three weeks is three or four quarts every twenty-four hours. The liquid is also boiled down into a coarse kind of sugar called jaggery, which is either converted into molasses or refined before fermentation sets in into white or brown sugar. In some places the occupation of toddy drawer is a hereditary one. Their mode of work is very simple, but is extremely dangerous. A thong made of bullock or buffalo hide, from 3 to 6 inches in width, and long enough to surround the tree and the body of the climber, is fastened with a peculiar kind of knot. The worker then stretches the thong to its utmost by throwing his whole weight on it, and draws up his legs. He has a ring of rope of palmyra fibers around his insteps, which allows him to grasp the tree between his heels. While his left hand is pressed against the trunk he shifts the thong up the tree with his right and draws his body up with it.

"Cocoanut day" is celebrated in most parts of India during the full moon in August. On that day numbers of nuts are thrown into the sea as an offering to the Hindoo gods. Occasionally one meets with deformed nuts, consisting of the husk with small deformed nuts having no kernel inside. The natives attribute this blighting of the fruit to the tree frog (*Polypedates maculatus*) which, by smelling the flower, can prevent the fruit from coming to maturity. The kernel of the nut is frequently made into ornaments for the hair, or necklaces. The plants, Dr. Short says, are subject to disease from two opposite causes: first, from too much moisture, as in swampy soils, where the fronds are usually small and ill-formed, and the fruit scarce; secondly, from lack of moisture, where the soil is hard and dry, the sap-bearing vessels shrink and the plant perishes. Among the insects and animals destructive to the palm may be mentioned the *Calandra palmarum*, or cocoanut weevil, which eats its way into the heart of the tree, and forms its cocoon there; the *Butocera rubus*, or cocoanut beetle; the *Oryctis rhinocera*, or rhinoceros beetle; the *Pteromyes petaurista*, or flying squirrel; the *Sciurus palmarum*, or common striped palm squirrel; the *Pteropus edwardsi*, or flying fox; and the *Paradoxurus musanga*, or tree dog. The rat family is very destructive, particularly in the Laccadives. It is exceedingly difficult to get at these rats, they make to themselves so many hiding places among the trees. Rat hunts are, however, occasionally got up, and to these all the inhabitants turn out with sticks and poles. While some of the hunters climb the trees and drive out the rats, the rest surround the trunks and kill the animals as they rush down. On some of these occasions thousands of rats are killed. The people, being Mohammedans, cannot be induced to keep dogs.

Horse Railway Strikes.

The citizens of New York and Brooklyn have lately been subjected to the dangers and annoyances of a strike of the car drivers and conductors of all the principal lines of the horse railways. It was prolonged for a week or more, during which mobs of idle men roamed about the streets, threatening violence and doing injury to person and property; but they were repressed and cowed to a great degree by the activity of the police. The strikers numbered several thousands, and say they struck because so ordered by their head committee; and the latter gave as reason their dislike of a regulation adopted by one of the companies in New York and something they disapproved of, done by one of the Brooklyn companies.

Floated by Means of Dead Cattle.

It has been said that every work of invention has its parallel in nature. But it would not be anticipated that the method of raising sunken steamers by forcing air into casks which have been secured to them would find such a parallel. Yet such has been the case on the Ohio River, where the steamer Robert B. Carson sank near Evansville, Ind., drowning thirty head of cattle that were confined on the lower deck. Efforts to pump the vessel out were not successful, and the boat was abandoned. A few days later, however, it was found to be floating, the fact being that the putrefying car casses of the cattle had become inflated by the gases generated in putrefaction, and their combined buoyancy was sufficient to raise the steamer again.