Culex Pipiens.

We all know the creature, but may not perhaps recognize him as readily under this name as under the more familiar, but not thereby despised, one of mosquito. We said "him," but we were wrong, for, unlike what is found in some of the higher orders of creation, it is the females that make all the trouble and do all the biting and stinging, the male being a very inoffensive and harmless insect, shunning man and getting his sustenance from the juices of plants, a few drops of which suffice for the needs of his short career. We might know that nothing good could ever come from the Culicidæ, for they start out in life in a way that no self-respecting larva could abide, swimming around, as if ashamed of themselves or of their progenitors, with their heads hanging down in the water and breathing through their tails.

A single mosquito, buzzing about on a warm summer night, can do more to keep away slumber than the uneasiest conscience that ever pricked the soul of man for his sins; yet in this part of the world, even in New Jersey, we do not think of the creature as one that can destroy life. Its limit of evil doing is as a pruritifactive and profanity-causing pest. When present in large numbers, however, they may become as dangerous to man as the rattlesnake, or as the man-eater in the Indian jungle. In an article on poisonous insects, in the "Reference Handbook of the Medical Sciences," Mr. Riley, the government entomologist, says that the pestiferous little insects "have caused the rout of armies and the desertion of cities, and the hum of an insignificant gnat may inspire more terror than the roar of the lion. The bravest man on the fleetest horse dare not cross some of the more rank and dank prairies of Northern Minnesota in June. It is well known that Father De Smet once nearly died from mosquito bites, his flesh being so swollen around the arms and legs that it literally burst.

"Those who have traveled in summer on the lower Mississippi or in the Northwest have experienced the torment which these frail flies can inflict; at times they drive every one from the boat, and trains can sometimes only run with comfort on the Northern Pacific by keeping a smudge in the baggage car and the doors of all the coaches open to the fumes."

There are said to be more mosquitoes to the cubic inch on the Magdalena River in South America than anywhere else in the known world, and it is madness to attempt a voyage up the river without a mosquito netting and some ammonia or other preparation to relieve the itching of the bites received in spite of constant care. A story is told of an Englishman who was not afraid of a mosquito or two, and scorned to take any precaution before starting up this river for Bogota. He soon had cause to repent of his foolish obstinacy, and after offering vainly all the money he had for the loan of a mosquito netting for the remainder of the voyage, he was driven mad by his tortures on the third day of the sail, threw himself into the river, and was drowned. This may be true and it may not, but any one who has ever faced one of these dense swarms without the protection of a thick net will have no trouble in recognizing the probability of its being an actual occurrence.

But one must give the devil his due, and even the mosquito has his good points, or rather let us say *her* good points, for, as we hinted before, the male has all the gentle unobtrusiveness and innocuous artlessness of his sex in other walks of life. The larvæ, wriggletails as they are usually called, swim about in stagnant pools and perform a useful service in purifying the water and freeing it from many swarms of microbes that are possibly inimical to man. But it is only in her tender youth that Culex pipiens is good, and as soon as she gets her wings and becomes capable of working mischief, her period of usefulness to the community is at an end.

In addition to the irritation which she excites by her bites, she has been accused of carrying about the germs of disease on her proboscis, and thus spreading contagion and defying quarantine. Dr. Finlay, of Havana, has been trying to turn this to good account by making the mosquito the instrument of preventive inoculations against yellow fever. He recently published the statistics of his experiments in this direction, from which it would seem that this method may really possess some efficacy. The insects that have been seen to bite patients with yellow fever are carried away carefully and made to sting newly arrived and unprotected individuals. Dr. Finlay reports the results of over fifty cases of mosquito inoculation, and of these but four individuals contracted the disease in a severe form within three years after the inoculation, one only dying therefrom. Of the remainder, some presented symptoms of yellow fever between the fourth and twenty-fifth day after inoculation, while others had no symptoms at this time, but suffered later from a mild attack of the disease. Some significant comparative statistics were obtained from the observation of sixty-five monks who, from time to time, arrived in Havana, where they all lived under similar conditions. Thirty-three of these were inoculated and thirty-two were not. Only two of the inoculated suffered from well marked attacks of yellow fever, which, however, did not prove fatal; whereas eleven of those that had not been inoculated were severely attacked, no less than five dying.

There are numerous patent preparations recommended as efficacious in relieving the irritation caused by the sting of the mosquito, some of which are possibly very serviceable, but probably not more so than oil of cloves, ammonia, bicarbonate of soda, chloroform, or thymol. When none of these remedies can be obtained, it may be well to remember that the alkali of ordinary soap is often as efficacious as anything. As soon as a bite is felt, the part should be moistened and rubbed with a piece of soap, the lather so formed being allowed to dry on the skin, and in a very short time, unless the individual be unusually susceptible to the poison of the insect, all irritation will have disappeared.

But prevention is, of course, better than cure, and most people who, for their sins, must live in a mosquito country keep off the greater number of their enemies by sleeping under a mosquito bar, although there is always one culex that manages to get in despite the utmost precaution. These bars are a great comfort, nevertheless, and even an absolute necessity in certain regions, but they are very inflammable, and serious accidents have resulted from their being set on fire by the flame of a candle or gas jet in the neighborhood of the bed. We may, therefore, fittingly bring these konopological remarks to a close by presenting the following recipe, published by the *National Druggist*, for rendering mosquito netting uninflammable:

"Make a solution of one part of ammonium sulphate to five parts of water and immerse the netting in the same. One pound of netting will require from twenty to twenty-four ounces of the solution to thoroughly saturate it. The material is entirely inoffensive, and the ease with which it is employed is not its least recommendation. After saturating the bar (or other material) with the liquid, it is necessary to pass a hot iron over the fabric to dry it and make it ready for use."—*Medical Record.*

Smokeless Powder—The New 12 Inch Gun—Firing of High Explosive Shells.

The first experience of our army officers with smokeless powder in high power cannon indicates that the day of the brown prismatic powder is now past. The results of three shots lately fired from the 8 inch gun at Sandy Hook were of the highest importance in showing to what extent the American guns can be relied upon when a proper brand of powder is secured. The powder used was smokeless powder, manufactured in Germany, and understood to be a modification of the Nobel powder. Its principal ingredients are said to be nitro-glycerine, nitro-cellulose, camphor, and benzole. The powder comes in block cubes, three-eighths of an inch on each edge. It has the appearance of black rubber when in the cube, but when pared in three pieces is translucent. The trial consisted of three shots fired from the gun, mounted on a free recoil carriage, in order to determine the velocity and pressure along the bore. In the first round a charge of 30 lb. of powder, and shell weighing 300 lb., were used, giving a velocity of 1,497 ft. and pressure of 18,000 lb. In the second shot the charge was increased to 45 lb., the velocity recorded being 1,990 ft., and the pressure 31,160 lb. In the third round, with 50 lb. of powder, the remarkably high velocity of 2,162 ft. per second was given, the pressure being about 38,000 lb. The velocities were taken 165 feet from the muzzle. The energy of the shot at the muzzle was 9,720 foot tons. The good results of the last round can be appreciated when it is remembered that with a charge of 130 lb. of brown powder, with the same weight of projectile as used in the above three rounds, the highest velocity attained with the normal pressure of about 37,000 lb. was 1,935; with a 250 lb. projectile, such as used in the navy gun, it is estimated that a velocity of 3,345 ft. can be secured with 50 lb. of the same brand of smokeless powder, and this, too, without increasing the pressure beyond 37,000 or 38,000 lb. When the gun was fired, a small volume of smoke shot from the muzzle, but quickly dissipated. Another notable circumstance was the clean appearance of the powder chamber after the firings, there being no residue whatever.

Preliminary tests of the army 12 inch steel breech-loading rifle, the first gun of that caliber completed in this country, were recently had at the Sandy Hook proving grounds, for the purpose of establishing a proper grade of powder before commencing the regular service test. The results are important only in showing that the gun is well able to stand the pressure figured upon. The unsatisfactory quality of the powder used made it impossible to determine anything else about the full ballistic qualities of the gun. Five rounds in all were fired, commencing with a charge of 250 lb. of powder and increasing to 375 lb. With the latter charge and a projectile weighing 1,000 lb., a velocity of 1,862 feet per second was obtained, with the pressure recorded at 36,500 lb. per square inch. The highest velocity obtained was in the fifth round, when the weight of the projectile was reduced to 850 lb. With a charge of 370 lb. of powder, this projectile was given a velocity of 1,952 feet, the pressure reaching 38,567 lb. per square inch. These latter figures approach very nearly to the results calculated for the full charge of 440 lb. of powder and a 1,000 lb. shot, therefore showing that a radically different powder must be adopted to secure the ballistics expected from the regulation charge and weight of projectile. The official test of the gun will be postponed until a satisfactory powder can be obtained. The breech mechanism of the gun worked perfectly.

A successful test was made at the Sandy Hook proving ground lately of the new explosive, emmensite, as an exploding charge for shells fired from powder guns, and there is every prospect that in a short time emmensite will obtain an official recognition as a leading explosive for military purposes. A shell filled with the explosive was placed in a 7 inch breech-loading rifle and fired into the water. The shell was fired from the gun intact and the experiment developed the fact that, though this substance is a high explosive of an intensity nearly, if not quite, equal to dynamite, it can safely be subjected to the shock of being fired by the expansion of powder gas and utilized as an explosive for projectiles. The next step taken will be to discover a fuse for these shells.—*Army and Navy Journal.*

PHOTOGRAPHIC NOTES.

Paramidophenol Developer.—This new developer, introduced by Messrs. Lumiere, has now been tried also by our German authorities, and their judgments are, on the whole, favorable to this reducing agent. Professor Vogel finds that the pure paramidophenol is very insoluble, so that it was impossible to prepare with it the solution recommended by Messrs. Lumiere. Dr. Schuchardt, of Gorlitz, has, however, succeeded in producing a hydrochloric preparation of this substance, which, in the hands of Prof. Vogel, proved to be more soluble than the first one, though it is said to dissolve much less readily in cold water than hydroquinone. It is, therefore, necessary to heat the water previously. The developer thus obtained is very energetic, giving, however, somewhat thin negatives, and the mixed solution soon becomes brown. If the paramidophenol solution and the sodium sulphite solution are kept separately, they will keep clear. Also Prof. Eder and E. Valenta state that the paramidophenol forms an excellent developer, giving, according to its composition, every degree of softness or intensity. The color of the negatives is grayish black, the film being free of every bluish or greenish color, even if a neutral fixing bath is used. The authors recommend the use of a dilute solution for the reason that then the paramidophenol does not crystallize out of its solution and the developer becomes less expensive. Moreover, the diluted solutions form equally excellent developers as the concentrated ones. The formulæ recommended by the authors are the following:

PARAMIDOPHENOL SODA DEVELOPER.

Water	1,000 cc.
Sodium sulphite	80 grammes.
Carbonate of soda	40 "
Paramidophenol	4 "

PARAMIDOPHENOL POTASH DEVELOPER.

Water	1,000 cc.
Sodium sulphite	120 grammes.
Carbonate of potash	40 "
Paramidophenol	4 "

The latter is specially well suited for plates which tend to give thin negatives, while the soda developer yields more delicate images. With the latter, also, transparencies on gelatino-bromide emulsion may be developed very successfully.—*H. E. Gunther, in Photo. News.*

A Bone Shedder.

Dr. Bell, of Parrottsville, Tenn., reported the case of a woman who sheds her bones, and showed some of the specimens before the East Tennessee Medical Society (*Medical Standard*). He said: "The patient is seventy-one years of age, seemingly in perfect health, a well preserved woman of medium height, average weight, and normal in every other respect. Twenty-one years ago the exfoliation of bone began in her fingers, and has during the succeeding years continued until she has twice shed ulna and radius, humerus, scapula, and part of inferior maxillary. This shedding takes place spontaneously without pain, hemorrhage, suppuration, inflammation, or inconvenience. On one occasion when churning she shed the radius. There is no deformity, sapination, pronation, extension, flexion, and circumflexion being perfect. The bones shed (about six hundred pieces) were, on careful inspection by the society, found to be entirely natural. She has given about one hundred pieces of bone away as souvenirs. The woman is conscious of the pending expulsion of a bone about ten minutes before it takes place, and a perfect bone is always left in its stead. The bone makes its way out, always on the posterior side, and the wound heals by first intention, though at the 'exit of the bones' were numerous small scars. She has always been in comfortable circumstances and is cheerful, a very interesting fact, as showing the power of the mind to adapt itself to extraordinary circumstances."