

Mr. R. W. Elliott said that he had brought that question up, while endeavoring to obtain legislation last session, and the opinion of the Hon. M. C. Cameron was that it came within the powers of the Local house, in the same way as laws restricting the sale of liquors, &c. The necessity for early and persistent action on the part of the Legislative Committee, was then urged by several of the members and approved by those members of the Committee present.

Meeting adjourned.

H. J. ROSE,
Secretary.

Selections.

Cochineal.

An insect of the genus of *Hemiptera*, by far the most important of which is the coccus cacti, or cochineal cactus, so celebrated for the beauty of the color which it yields. This species is a native of South America, and was for a long time exclusively confined to Mexico, where it feeds on a species of cactus.

It was introduced, about eighty years ago, into our East Indian territories by an enterprising individual, an officer in the Madras army. About sixty years ago, the Spaniards regarded this insect as being invaluable to them, producing a revenue to Spain larger than that afforded by their gold mines. It was the desire of the Honourable East India Company to introduce the cochineal into their territories at the above period, and large reward was held out to speculative adventurers to tempt and encourage them to colonise the insect on their various estates. But they could not succeed in their new undertaking. It may be deemed somewhat remarkable, when the great value of the cochineal insect is considered, that the natives have never encouraged it as an article of commerce. Certain European adventurers have, however, endeavoured to turn the insect to a good account; but they have, all of them, signally failed in producing cured samples of any size, so as to wear a favourable complexion in the London market, when placed in juxtaposition with the *grana fina* of Mexico and Oaxaca, and as none of the parties had had an opportunity of witnessing the mode in which the *nopaleries* in South America were managed, they were quite at a loss how to treat the insect.

Some conjectured that the fly was a wild species of the *coccus cocciniferus*, whilst others considered that it was the wrong plant upon which it was reared in India; and on the other hand, it was decided that the climate was uncongenial to the prosperity of the insect, which, although it proved highly prolific, yet never arrived at any size. The Indian cochineal yields a stronger dye than that of New Spain, and is in every way calculated to prove a truly valuable article of commerce, if it could be brought to a size equal to that of the insect of New Spain or South America. A gentleman, living on the Coromandel coast, fed a small colony of these insects upon the *cactus inermis*, a species of *cactus opuntia*, perfectly free from thorns, and which it is said the South American coccus exclusively feeds upon, but it quickly perished under the bite of the insect, although

the animalcules were not usually numerous; and he was led to imagine that the large acicular thorns which protruded from the lobes of the prickly pear (for the leaves are truly lobate) would, if carefully removed, tend considerably to promote the size of the insect in its growth. He also, among several other experiments he adopted in his treatment of the cochineal, rescinded a portion of the exuberant foliage of the plant, and diminished the quantity of larvae on the leaves so as to afford the shrub a more favorable opportunity of struggling against the innovations of the insect incubus. In this latter experiment he proved successful; and he observed as the vigor of the plant developed in a corresponding ratio did the cocci increase in size, nor were they enveloped so thickly in flocculent matter as those which were allowed to live unattended to and neglected.

Cochineal was fetching at this time in Calcutta eleven and twelve rupees per seer of two pounds, which is at the rate of 12s. per pound; and yet, strange to say, the insect then abounded throughout India; and, with a little pains and attention bestowed upon it, might be converted into a valuable article of commerce, and would, there can be little doubt, in time, expel the presence of the Spanish insect from the market.

The female, or officinal cochineal insect, in its full-grown, pregnant, or torpid state, swells or grows to such a size, in proportion to that of its first or creeping state, that the legs, antennae, and proboscis are so small, with respect to the rest of the animal, as hardly to be discovered by the naked eye; so that, on a general view, it bears a great resemblance to a seed or berry; hence arose that difference of opinion which at one period subsisted among writers, some maintaining that cochineal was a berry, while others contended that it was an insect.

When the female insect is arrived at its full size, it fixes itself to the surface of the leaf, and envelopes itself in a kind of white down, which it spins, or draws through its proboscis, in a continued double filament. The male is a small and rather slender two-winged fly, about the size of a flea, with jointed antennae, and large white wings in proportion to its body, which is of a red colour, with two long filaments proceeding from the tail. When the female insect has discharged all its eggs it becomes a mere husk, so that great care is taken to kill the insect before that time, to prevent the young from escaping. The operation of collecting the insects is exceedingly tedious, and is performed by women. "Formerly," says Mr. McCulloch, "it was in Mexico only that it was reared with care, and formed a valuable article of commerce, but its culture is now more or less attended to in various parts of the West Indies."

The insect, of which there are about 70,000 in a pound, being detached from the plants on which they feed by a blunt knife, are put into bags and dipped in boiling water to kill them, after which they are dried in the sun. It is principally used in dyeing scarlet, crimson, and other esteemed colors. The watery infusion is of a violet crimson, the alcoholic of a deep crimson, and the alkaline of a deep purple, or rather violet hue. It is imported in bags, each containing about 160 lbs. Messrs. Daniel Judson and Son, of Southwark Street, inform us that no less quantity than 23,775 bags of cochineal have been delivered from the Lon-

don warehouses for home consumption and for exportation during the first nine months of the current year. The stock at the end of October being 6,071 bags. In the year 1814, only 1,200 bags were imported, when the price obtained varied from 36s. to 39s. per lb., the present prices being about 3s. 3d. to 4s. per lb.

The cochineal most esteemed for dyeing is called "black grain," being of a dark mulberry colour; while that called "silver grain" resembles in colour the ore from which it derives its name. This latter we should consider the cochineal of the Pharmacopoeia.

Messrs. Judson and Son have kindly volunteered to supply, free of charge, small samples of the various kinds of cochineal to any of our friends who are collecting specimens, or are otherwise interested in the subject of our article.—*Mather's Price Current*, Dec. 1869.

Researches on Tobacco.

From the investigations of Mr. Schloesing, reported in *Les Mondes*, and abbreviated in the *Chemical News*, it appears that the inorganic substances contained in tobacco are Potassa, lime, magnesia, oxides of iron, and manganese, ammonia, nitric, sulphuric, hydrochloric, and phosphoric acids, and silica. The organic substances are:—Nicotine, $C_{10}H_7N$; malic, citric, acetic, oxalic, pectinic, and ulmic acids; nicotianine; a green and yellow resin; wax and fat; albumenoid substances; and cellulose. Nicotianine, also known as tobacco camphor, is a fatty substance, exhibiting the pleasant aromatic odour of tobacco-smoke, and having an aromatic bitter taste. Nicotianine is probably identical with coumarine. Nicotine is an organic base; it is, in the pure state, a colorless, oily liquid, of very acrid taste, soluble in water, alcohol, ether, and oil; and a most dangerous poison. According to the author, the quantity of this substance contained in 100 parts, by weight, of dry, unmanufactured tobacco-leaves, ripped from the stems, varies considerably, even for tobacco cultivated in France, from 7.96 to 3.24 per cent.; for American tobacco, the quantity varies from 6.87 to 2.29 per cent.; while the so-called Havana (properly Cuba) tobacco contains only 2.0 per cent. of this alkaloid. Snuff, which contains on an average 33 per cent. of water, contains 1.36 per cent. of nicotine. The quantity of ash contained in tobacco in dry state varies from 19 to 27 per cent. 100 parts of the ash contain:—Potassa, 29.96; soda, 2.76; lime, 39.53; magnesia, 9.61; chloride of sodium, 9.65; sulphuric acid, 2.78; silica, 4.51; phosphate of peroxide of iron, 4.20. The more or less easy combustibility of tobacco does not depend upon the quantity of nitre it contains, since experiments made by the author have proved that the Kentucky tobacco, which contains a large quantity of saltpetre, burns badly, while Java, Maryland, and Hungarian tobacco, which contain hardly any saltpetre at all, burn very well. The author found that tobacco which burns badly, or not at all (at least, not so as to be suitable for the use of smokers) burns very well after having been steeped for some time in an aqueous solution of an organic potassa-salt (oxalate, malate, citrate, or tartrate answer the purpose), and next dried. A well-burning tobacco becomes badly-burning, or even non-combustible, by being steeped in aqueous solutions of sulphate of lime, chloride of