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THE PRODUCTION OF SILK FROM THE CATER-  
PILLARS OF CANADIAN MOTHS.

For several years past the attention of naturalists and others in Europe, has been directed to the possibility of discovering some silk-producer, as a substitute for the ordinary silk-worm. Various epidemics have recently been making great havoc among the silk-worms, so much so, that during the last few years, half, or nearly two-thirds, of the crop in Europe has been lost through these causes, to the great alarm of those engaged in this branch of industry. In a late number of the "Illustrated London News," a brief account is given of the discovery of a new silk-producing moth (*Saturnia cynthia*), the caterpillar of which feeds on the leaves of the tall *Ailanthus* (*Ailanthus glandulosus*), a tree indigenous to China, but which has recently been introduced into and acclimatized in England. The silk obtained from this moth is described as being strong, as taking most dyes well, being cheaply produced, and as only lacking the more brilliant lustre of the best silks on which we have been so long accustomed to look. Now it is well known to naturalists that there exist in Canada several native species of this genus (*Saturnia*) of moths, some of which resemble very closely the one mentioned above. It is desired in the following paper, to draw attention to the possibility of employing the products of these moths in the manufacture of, at any rate, the coarser varieties of silk.

The subject is by no means new in Canada, the attention of naturalists having been early attracted by the splendor of the *Saturniæ* and the extraordinary quantity of silk they produce in forming their cocoons. Dr. Cottle, of Woodstock, read some notes on this genus of moths before the Canadian Institute in 1854,\* suggesting the possibility of using their silk for textile fabrics.

All the silk and silk-stuffs of commerce are obtained at present from the common silk-worm (*Bombyx mori*); but in Bengal, and other parts of India, and to a large extent in China, valuable silk is procured from the cocoons of other species of moths, of these the most important known are the *tussah* and

Arindy silk-worms. The first (*Phalæna paphia*, Roxb.) occurs in such abundance over many parts of Bengal and the adjoining provinces, as to have afforded to the natives, from time immemorial, an abundant supply of a very durable, and dark coloured silk, called *tussah*. This fabric is much worn by the Brahmins, and other sects of the Hindoos, and would no doubt, be very useful in America, as affording a cheap and at the same time very durable dress. The second, the Arindy silk-worm, is found in many parts of Bengal, where it is reared in a domestic state. Its food consists of the leaves of the common *Ricinus*, or palma-christi, called Arindy by the natives. The silk manufactured from the cocoons of this moth is of an almost incredible durability: it is said that a dress made of it lasts more than the lifetime of one person; and is frequently handed down from parent to child. The Chinese have also many wild species of silk-worm, which feed on the oak, ash, pepper-tree, and various others.

The Canadian species of the genus to which the above mentioned insects belong—the *Saturnia*, Schr., or *Attacus*, Hübner, as now constituted—are very fine insects, and spin large cocoons. This genus of large moths is, perhaps, the most handsome of all the nocturnal lepidoptera: they are beautifully covered with a soft down and are adorned with a great variety of splendid colours. The first of these is the *Cecropia* moth (*Saturnia cecropia*, Linn.), the largest of the Canadian lepidoptera, not uncommon in any part of Canada. Its wings, when expanded, measure from six to seven inches in breadth; their ground colour is dusky-brown. The anterior pair are adorned near the middle, with a kidney shaped, reddish-white spot margined with black; and beyond this, nearer the edge, with a reddish-white, slightly wavy, band bordered with black; the rest of the wing is of a rather lighter colour, becoming a light brown at the edge. Near the tip there is also a black eye-like spot, and a short zig-zag line of a whitish colour, running from it to the front of the wing. The posterior wings are of the same colour, and ornamented in much the same way; the band is rather broader, and of a lighter hue, as is also the kidney-shaped disk in the middle. The head is red, with a white collar between it and the thorax, which is also red. The abdomen is of a rather darker red, and is marked with white transverse lines. The antennæ of the male are broadly pectinated, of the female much less so.

The caterpillar is almost as beautiful as the perfect insect. Its length is from three to four inches; it is of a light green colour, with a number of light red, or yellow, wart-like points, projecting from it. On each segment there are two small blue spots. It feeds on the leaves of the apple, cherry, and plum-trees; the first of which appears to be its favorite.

\* A few rough notes on some of the Canadian *Saturniæ*, and suggestions on the possibility of using their silk for textile purposes.—*Canadian Journal*, Vol. II., Old Series.