

she separated in 1848 twenty of these caterpillars, and having kept the moths separate, bred from them. Of the many caterpillars thus reared, "every one without exception had eyebrows, some darker and more decidedly marked than the others, but *all* had eyebrows more or less plainly visible." Black caterpillars occasionally appear amongst those of the common kind, but in so variable a manner, that, according to M. Robinet, the same race will one year exclusively produce white caterpillars, and the next year many black ones; nevertheless, I have been informed by M. A. Bossi of Geneva, that, if these black caterpillars are separately bred from, they reproduce the same colour; but the cocoons and moths reared from them do not present any difference.

The caterpillar in Europe ordinarily moults four times before passing into the cocoon stage; but there are races "*à trois mues*," and the Trevoltini race likewise moults only thrice. It might have been thought that so important a physiological difference would not have arisen under domestication; but M. Robinet<sup>74</sup> states that, on the one hand, ordinary caterpillars occasionally spin their cocoons after only three moults, and, on the other hand, "*presque toutes les races à trois mues, que nous avons expérimentées, ont fait quatre mues à la seconde ou à la troisième année, ce qui semble prouver qu'il a suffi de les placer dans des conditions favorables pour leur rendre une faculté qu'elles avaient perdue sous des influences moins favorables.*"

*Cocoons.*—The caterpillar in changing into the cocoon loses about 50 per cent. of its weight; but the amount of loss differs in different breeds, and this is of importance to the cultivator. The cocoon in the different races presents characteristic differences; being large or small;—nearly spherical with no constriction, as in the *Race de Loriol*, or cylindrical, with either a deep or slight constriction in the middle; with the two ends, or with one end alone, more or less pointed. The silk varies in fineness and quality, and in being nearly white, but of two tints, or yellow. Generally the colour of the silk is not strictly inherited: but in the chapter on Selection I shall give a curious account how, in the course of sixty-five generations, the number of yellow cocoons in one breed has been reduced in France from one hundred to thirty-five in the thousand. According to Robinet, the white race, called Sina, by careful selection during the last seventy-five years, "*est arrivée à un tel état de pureté, qu'on ne voit pas un seul cocon jaune dans des millions de cocons blancs.*"<sup>75</sup> Cocoons are sometimes formed, as is well known, entirely destitute of silk, which yet produce moths; unfortunately Mrs. Whitby was prevented by an accident from ascertaining whether this character would prove hereditary.

*Adult stage.*—I can find no account of any constant difference in the moths of the most distinct races. Mrs. Whitby assured me that there was none in the several kinds bred by her; and I have

<sup>74</sup> Robinet, *ibid.*, p. 317

<sup>75</sup> Robinet, *ibid.*, pp. 306-317.