

A CONTRASTED SUMMARY OF THE MAIN EXTERNAL CHARACTERS OF BUTTERFLIES IN THEIR DIFFERENT STAGES OF LIFE.

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	Caterpillar.	Chrysalis.	Imago.
1. <i>Head as a whole</i> :	Independent ; a globular case, its walls but little interrupted, except by sutures.	Soldered to thorax ; mostly composed on an uninterrupted frontal plate.	Independent ; a globose case, the sides almost entirely occupied by the compound eyes.
2. <i>Eyes</i> :	An arcuate series of simple ocelli, on the lower portion of the sides of the head.	A slightly convex plate on each side, largely overlaid by the antennæ, leaving exposed only an arcuate band, in which are faint traces of facets.	A convex, usually strongly convex or globose mass occupying the sides, delicately and minutely faceted to form compound eyes.
3. <i>Antennæ</i> :	Brief, four-jointed, free, terminating in a bristle seated on the third joint.	Long, multiarticulate, folded over and appressed to the breast.	Long, multiarticulate, apically clubbed, extended, free.
4. <i>Mandibles</i> :	Well developed, free moving, chizel-edged or denticulate jaws.	A pair of subtriangular plates, soldered to the body.	Minute triangular immovable plates soldered to the body ; or else wanting.*
5. <i>Maxillæ</i> :	A papilla, seated on a mammilate elevation, with little motion.	A pair of long soldered ribbons, lying side by side along the middle line of the breast.	A free coiled tongue, composed of two opposite similarly lateral halves, the union of which, by interlocking plates on the inner surfaces, forms a hollow canal.
6. <i>Maxillary palpi</i> :	An inner and an outer, the former of one or two, the latter of three minute joints, seated on the crown of the maxilla.	[Not exposed on the surface.]	A single pair, at most two jointed, excessively minute, seated on the extreme outer base of the spiral tongue.
7. <i>Labium</i> :	Similar to the maxillæ but median, and bearing besides palpi on the outer sides, a central tube, the spinneret.	[Not exposed on the surface.]	Merely a slight chitinous ridge for the support of the palpi.
8. <i>Labial palpi</i> :	A minute two-jointed appendage at the outer sides of the labium.	[Not exposed on the surface, lying beneath the expanded base of the maxillæ, sheathless.]	A highly developed three-jointed appendage on each side of the head, heavily scaled, and protecting the coiled tongue, the second joint usually much the largest, the whole usually longer than the head.
9. <i>Thorax as a whole</i> :	By its contour not regionally distinct from the abdomen.	By its contour but little distinct regionally from either the head or the abdomen, but more so from the latter than from the former.	By its contour completely and equally distinct regionally from the head and the abdomen.
10. <i>Its subdivisions</i> :	Essentially similar, the anterior joint generally distinguished by differing structure or by the presence of extrusive glands, and always by the presence of spiracles which are wanting on the other joints.	The mesothorax much the largest, and the prothorax so reduced that its spiracles infringe upon the mesothorax, which, like the metathorax, is unprovided with them.	The proportions of the chrysalis maintained, the prothorax often becoming a mere appressed plate as seen from above, and apterous, while the other joints bear wings and lack spiracles.
11. <i>Its surface and clothing</i> :	More or less shagreened and bearing relatively sparse hairs, spines, tubercles or	Smooth or roughened, generally with scant and brief trichomes or none, generally	Smooth, with even surface and no elevations, but densely clothed with hairs and scales,