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DESCRIPTION OF THE PREPARATORY STAGES OF LIBYTHEA BACHMANNI, KIRTLAND.

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EGG—In shape are oblate spheroid, somewhat pointed at base, and a little truncated and depressed at summit; marked by many horizontal striæ, and longitudinally by 18 or 20 narrow, prominent ribs, which proceed from base and terminate, some of them irregularly, at about four fifths the distance to summit, while eight, increasing gradually in prominence, end abruptly at the rim of the summit; these long ribs are cut on either side by grooves perpendicular to the surface of the egg; they are also frequently deflected somewhat from a direct line; color pale green. Duration of this stage about 4 days.

YOUNG LARVA—Length just from egg .04 inch; cylindrical; the segments a little rounded, and four times creased transversely; covered with a fine short down; color green, semi-translucent; head twice as broad as 2; obovoid, a little depressed at suture, the vertices rounded; sparsely pilose; color yellow-brown. To 1st moult about 2 days, in July.

After First Moult—Length .08 and .09 inch; color brownish-green, the segments curved; head a little broader than 2, shape as before; color yellow-green. To next moult 2 days.

After Second Moult—Length .12 inch; same shape; upper side dark green; a faint shade of yellow over and along basal ridge, rather macular; under side, legs and feet lighter green; the segments much specked with faint white on the ridges caused by the creases; on 3, high up, a black dot on either side; head as before; color light green. To next moult 2 days.

After Third Moult—Length .26 to .28 inch ; color dull green, yellowish along and over basal ridge ; specked with pale white, or yellow white, as before ; the black dots as before ; head green. To next moult about 2 days.

After Fourth Moult-Length .4 inch. Four days later the larva reached maturity.

MATURE LARVA-...7 to .9 inch; cylindrical, thickened at 3 and 4, the dorsum of last segment abruptly curved down to the end; color dark green, the lower side, and also feet and legs, pale green; each segment four times creased transversely and on the flat ridges so caused are