

possible on the application of the stimuli afforded by particular surroundings; *secondly*, that some larvæ, in the absence of these stimuli, but in conditions otherwise favourable, are highly variable; *thirdly*, that the variations produced by a given change in the environment may be of an uniform and definite character; and lastly, that these changes may result, not in the modification of ancestral organs, but in the hypertrophy of those which are purely larval.

The last of these considerations leads to the hope that a further investigation of similar cases may afford a criterion by which to interpret larval histories in general.

#### EXPLANATION OF THE FIGURES.

Fig. 1.—Lateral longitudinal section (nearly median) through a young Bemini larva, just before the appearance of the collar-fold.

Fig. 2.—Transverse section through the trunk of a Bemini larva, at the time of the greatest development of the gill-pouches.

Fig. 3.—Nearly median longitudinal section through a degenerate Bemini larva. The arrangement of the tentaculiferous grooves is indicated by shading within the dotted lines.

*Reference Letters.*—*An.*, anus; *Bl.*, blastocœl; *Br.*, branchial pouch; *Ch.*, "notochord" of Bateson; *Ci.*, cilia; *Gl.*, proboscis gland; *M.*, mouth; *Mc.*, "mesenchym" of proboscis cavity; *P.*, proboscis pore; *Ph.*?, cells of blastocœl, possibly phagocytes; *Sch.*, "scheitelplatte"; I, II, III, body cavities of proboscis, collar, and trunk respectively.

II. "Studies of some New Micro-organisms obtained from Air."  
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(Abstract.)

In previous communications to the Royal Society by one of the authors,\* details have been given of a number of experiments on the presence of micro-organisms in the atmosphere. In these investigations a solid culture medium was employed, which not only greatly facilitated their enumeration, but also presented them in an *isolated* condition. In this manner the authors have met with a number of

\* 1. "The Distribution of Micro-organisms in Air," 'Roy. Soc. Proc.' vol. 40, p. 509; 2. "A New Method for the Quantitative Estimation of the Micro-organisms present in the Atmosphere," *ibid.*, vol. 41, p. 443; 3. "Further Experiments on the Distribution of Micro-organisms in Air by Hesse's method," *ibid.*, p. 446.

different varieties of aërial micro-organisms, which have hitherto remained either unknown or undescribed. They have therefore undertaken the characterisation of a number of these organisms by growing them in various cultivating media and observing the different appearances which they subsequently exhibit, by studying them microscopically in stained and unstained preparations, and by cultivating them on gelatine-plates, and describing the colonies to which they give rise. They have likewise made a number of drawings to illustrate the appearances which they present under the various examinations to which they have submitted them. To further facilitate their identification the authors have provisionally given them names, by which they have endeavoured to represent some of their most striking individualities.

The authors venture to hope that by thus characterising some of the organisms most prevalent in the atmosphere, they may prove of assistance in those investigations which have for their object the study of the particular physiological changes which are brought about by specific micro-organisms.

The following is a list of the micro-organisms described :—

Micrococcus carnicolor.	Bacillus plicatus.
„ albus.	„ chlorinus.
„ gigas.	„ polymorphus.
„ chryseus.	„ profusus.
„ candicans.	„ pestifer vermicularis.
Streptococcus liquefaciens.	„ subtilis minor.
Sarcina liquefaciens.	„ subtilis cereus.
Bacillus aurescens siccus.	Saccharomyces rosaceus.
„ aureus.	„ liquefaciens.
„ citreus.	Mycelium fuscum.

In addition to these varieties a description has been given for the sake of comparison of some aërial micro-organisms which were obtained by one of the authors from Dr. Koch's laboratory in Berlin. These are—

Micrococcus rosaceus.	Bacillus subtilis.
Sarcina lutea.	„ (Micrococcus) prodigiosus.
„ aurantiaca.	