the metamorphoses of Insects became very early the subject of most remarkable observations,[1] but so little was it then known that all animals undergo great changes from the first to the last stages of their growth, that metamorphosis was considered a distinguishing character of Insects. The differences between Insects, in that respect, are however already so great, that a distinction was introduced between those which undergo a complete metamorphosis, that is to say, which appear in three successive different forms, as larvæ, pupæ, and perfect insects, and those with an incomplete metamorphosis, or whose larvæ differ little from the perfect insect. The range of these changes is yet so limited in some insects, that it is not only not greater, but is even much smaller than in many representatives of other classes. We may, therefore, well apply the term metamorphosis to designate all the changes which animals undergo, in direct and immediate succession,[2] during their growth, whether these changes are great or small, provided they are correctly qualified for each type.

The study of embryology, at first limited to the investigation of the changes which the chicken undergoes in the egg, has gradually extended to every type of the animal kingdom; and so diligent and thorough has been the study, that the first author who ventured upon an extensive illustration of the whole field, C. E. von Baer, has already presented the subject in such a clear manner, and drawn general conclusions so accurate and so comprehensive, that all subsequent researches in this department of our science, may be considered only as a further development of the facts first noticed by him and of the results he has already deduced from them.[3] It was he who laid the foundation for the most extensive

[1] SWAMMERDAM, (J.,) Biblia Naturæ, sive Historia Insectorum, etc., Lugduni-Batavorum, 1737–38, 3 vols. fol. fig. — REAUMUR, (R. ANT. DE,) Mémoires pour servir à l'Histoire des Insectes, Paris, 1734–42, 6 vol. 4to. fig. — ROESEL VON ROSENHOF, (A. J.,) Insectenbelustigungen, Nürnberg, 1746–61, 4 vols. 4to. fig.

[2] I say purposely, "in direct and immediate succession," as the phenomena of alternate generation are not included in metamorphosis, and consist chiefly in the production of new germs, which have their own metamorphosis; while metamorphosis proper relates only to the successive changes of one and the same germ.

[3] Without referring to the works of older writers, such as DeGraaf, Malpighi, Haller, Wolff, Meckel, Tiedemann, etc., which are all enumerated with many others in BISCHOFF'S article "Entwickelungsgeschichte," in WAGNER'S Handwörterbuch der Physiologie, vol. 1, p. 860, I shall mention hereafter, chiefly those published since, under the influence of Döllinger, this branch of science has assumed a new character: — BAER, (C. E. v.,) Ueber Entwickelungsgeschichte der Thiere, Königsberg, 1828–37, 2 vols. 4to. fig. The most important work yet published. The preface is a model of candor and truthfulness, and sets the merits of Döllinger in a true and beautiful light. As text-books, I would quote, BURDACH, (C. F.,) Die Physiologie als Erfahrungswissenschaft, Leipzig, 1829–40, 6 vols. 8vo.; French, Paris, 1837–41, 9 vols. 8vo. — MÜLLER, (J.,) Handbuch der Physiologie des Menschen, Coblenz, 1843, 2 vols. 8vo. 4th edit.; Engl. by W. BALY, London, 1837, 8vo. — WAGNER, (R.,) Lehrbuch der Physiologie, Leip-