1875 attempted to sub-divide Ammonites into a number of families and genera, but his attempt only served to show how extremely difficult it was to give a precise definition and limit to the individual groups of forms. All groups seemed connected with one another by intermediate types.

Neumayr therefore fell back on the genealogical principle as the guiding feature in his classification, and combined into narrower or wider groups all those forms which in his opinion were either nearly related or directly connected in the line of descent.

Previously to Neumayr, Waagen (1869) had traced the genealogical tree of the species *Ammonites subradiatus* through several stratigraphical horizons, and had proposed the term "mutation" to signify the insignificant variations or modifications apparent in the members more remote from one another in time. The stronger emphasis placed on the phylogenetic relationships introduced a more speculative and subjective character into the study of Ammonites, but it also gave an incentive to a more detailed investigation of the shell development and to a comparison of the ontogeny and phylogeny of these organisms.

Hyatt had endeavoured in the year 1872 to find out the approximate "embryology" of the Ammonites by an examination of the primary chambers and the innermost coils of the shells, and had by this means been able to verify the essential difference between the embryonic development of Nautilidæ and Ammonitidæ which had been stated by Barrande and Saemann. In 1880, Würtenberger emphasised the agreement in the evidences of ontogeny and phylogeny regarding the shell development in the group of Ammonites. Meunier-Chalmas observed (1873) a striking resemblance of the embryonic chambers of certain Ammonites with Spirula, and argued that a near relationship existed between the Ammonites and the Dibranchs. Upon other grounds, Gray, Suess, and to a certain degree also Quenstedt, formed a similar inference; and Steinmann in 1890 expressed his opinion that the genus Argonauta was a lineal descendant of the Ammonites. The development of the chambered shells of the Cephalopods was made the subject of a masterly and comprehensive series of researches by Branco (1881), and led this observer to apply the character of the embryonic chambers as a basis for the chief sub-divisions of the Ammonitidæ.