ment of facies of a geological horizon was characterised by a particular kind of fauna, and that certain genera and species, however frequently they might occur in some lithological deposits, were entirely excluded from rock-deposits of the same age, but with a different lithological constitution. Gressly described in great detail the various forms of rock-facies which occur in the Solothurn Jura (mud facies, coral facies, sponge facies; pelagic, sub-pelagic, littoral facies, etc.), named the fossil types which were characteristic of each, and judging both from the mineral constitution of the rocks and the fossil organisms contained in them, he drew conclusions regarding the mode of origin of the respective rock-formations.

The differences between littoral deposits, shallow-water and deep-sea deposits were distinguished, and also the variations exhibited by deposits accumulated in the open ocean, or in partially enclosed basins. Examples were likewise given of transitional or passage beds in areas connecting any two characteristic facies-developments. On the whole, Gressly found that the facies variations in the Solothurn Jura were insignificant in the Triassic, Liassic, and older Oolite deposits, but were extremely important in the Middle and Upper divisions of the Oolitic series. (*Observations géologiques sur le Jura Soleurois*, 1838-40-41.)

By a remarkable coincidence, a French geologist arrived theoretically at views closely resembling those demonstrated by Gressly in the field. Constant Prévost, in 1838, contributed an article to the Bulletin of the French Geological Society, which had special reference to a previous memoir by Prestwich. Prévost explained how in each geological epoch there must be contemporaneous deposits of pelagic, littoral, fluvio-marine, fresh-water, and terrestrial origin, replacing one another locally. Hence the mere lithological character of a rock-deposit could never determine its geological age. Prévost also elucidated the correlation of the faunal types with the various kinds of deposit. Calcareous deposits would, he said, always contain other forms of organic life than arenaceous or argillaceous deposits; on the other hand, deposits of the same lithological character, although of different geological age, might contain very similar fossil types. As an example of the varying constitution of contemporaneous deposits Prévost cited the coarse limestone, the siliceous limestone, and the gypsum of the Paris basin; while he illustrated the occurrence