

scription of the Tertiary formations in the Rhineland. The discovery of the famous *Dinotherium* skull at Eppelsheim by Klipstein and Loup induced Klipstein (1836) to contribute a more careful stratigraphical account of the strata in the Mainz basin, and he paralleled the bone-bearing sands of Eppelsheim with the gypsum of Montmartre, and the limestone strata underlying the bone-bearing sands with the coarse limestone beds of Paris. In the following year, Bronn tried to prove that the Eppelsheim sands belonged to a higher horizon and were comparable with the Middle Tertiary of the Vienna basin, and he likewise assumed a Miocene age for the other sands near Alzey, "although," he said, "the characteristic species of the clays in the Vienna basin are absent."

The first accurate and detailed account of the succession of strata in the Mainz basin was given by Sandberger in 1853. He sub-divided the series into nine well-marked palæontological zones which he compared with the "stages" of Tertiary strata in France and Belgium; the zones in ascending order were: (1) Marine sands near Alzey; (2) Septarian clay and "Cyrena" marls with occurrences of brown-coal; (3) Limestone of Hockheim with land-snails; (4) "Cerithia" limestone of Flörsheim and Oppenheim; (5) "Litorella" limestone; (6) Clays and shales with brown-coal; (7) Leaf sandstone; (8) Fresh-water sands of Eppelsheim with remains of *Dinotherium*, *Hipparion*, etc.; (9) Marine sands of Cassel. Sandberger compared the Alzey sands and the Septarian clay with Dumont's *Tongrien* and *Rupelien* stages; the littoral and brackish-water deposits, from Hockheim limestone to the leaf-sandstone, he regarded as the equivalents of the marine Miocene strata in the Aquitanian and Vienna basins, and of the system *Bolderien* in Belgium; while he placed the bone-sand of Eppelsheim and the Cassel sands in Lower Pliocene, as an equivalent of the system *Diestien* in Belgium.

The sub-divisions proposed by Sandberger for the Tertiary formation in the Mainz basin have undergone very little subsequent modification. The chief alteration was made in 1854 by Hamilton, when he proved that the Hockheim limestone was not an independent horizon, but a local intercalation in the "Cerithia" strata. In 1883, Lepsius published a geographical description of the Mainz basin; and the first volume of the *Geologie von Deutschland*, by the same author (1892), affords a general survey of all the literature that has