

fauna (ante, p. 1389). The Tálchir group contains boulder-beds that may indicate glacial action in Triassic or Permian time. The Damuda group, which comprises nearly all the coal-fields of the Indian peninsula, contains a remarkable flora, distinguished by the abundance of ferns (*Glossopteris*, *Gangamopteris*, *Sagenopteris*, *Tæniopteris*, etc.), and by its mingled Palæozoic and Mesozoic characters. The Panchet group, crowning the lower Gondwána system, is composed of sandstones with bands of red clay, the whole having a thickness of 1800 feet, and yielding the Rhætic ferns *Pecopteris concinna* and *Cyclopteris pachyrhachis*, the Triassic and Rhætic genus of horsetail *Schizoneura*; the labyrinthodonts *Gonioglyptus* and *Pachygonia*, allied to Triassic forms, together with *Dicynodon*, *Epicampodon*, etc.³⁴

Australia.—In New South Wales a group of yellowish-white sandstones (Hawkesbury beds) about 1000 feet thick lies unconformably upon the coal-bearing strata referred to the Permian period. This group forms the picturesque cliffs around the coast of Port Jackson, and has furnished the building-stone for the principal public buildings in Sydney. It has yielded a large number of plants (*Phyllothea*, *Spheopteris*, *Neuropteris*, *Thinnfeldia*—common, *Odontopteris*, *Alethopteris*, *Macrotaeniopteris*, *Podozamites*, and *Walchia*); also the fishes *Palæoniscus antipodeus*, *Myriolepis Clarkei*, *Cleithrolepis granulatus*, and labyrinthodonts, but no marine shells. At Gosford, near the base of the Hawkesbury beds, in a thin seam of gray shale, a large collection of fishes has been obtained. The animals seem to have lived in some land-locked lake or estuary, and to have been killed in large numbers by the sudden silting up of the water with coarse sand and gravel. They belong to at least six genera, four of which occur in the European Trias. Of these four, two (*Dictyopyge* and *Semionotus*) are typically Triassic, while the third (*Belonorhynchus*) commonly ranges to the Lias, and the fourth (*Pholidophorus*) is best developed in the Jurassic system. The fifth genus (*Pristisomus*) is new, but scarcely higher in rank than *Semionotus*, while the sixth (*Cleithrolepis*) has only been definitely recognized in the Stromberg beds of South Africa, the age of which may be Triassic or Lower Jurassic.³⁵ On the Hawkesbury sand-

³⁴ "Geology of India," p. 131.

³⁵ A. S. Woodward, Mem. Geol. Surv. N. S. Wales, Palæontology, No. 4, 1890, p. 54.