

*Bibliographia balcanica**The Alpine orogen on the Balkan Peninsula: two versions about Alpine polyphase collisions*

New or modified older geodynamic ideas become more popular amongst Bulgarian geologists during the last five years. The last issue (No 22) of *Geotectonics, Tectonophysics and Geodynamics* (*Geotektonika, Tektonofizika i Geodinamika*) edited by the Geological Institute of the Bulgarian Academy of Sciences contains two synthetic reviews (by P. M. Gočev and by C. N. Dabovski) which follow the modern trends in geodynamics, and attempt to place vital problems of Bulgarian geotectonics within the wider frame of the geodynamics of the Balkan Peninsula, and the whole Alpine-Himalayan belt. These newly published (but accepted for publication at end 1988) papers follow in general the same lines as reviews already published by Boňčev (1987), Gočev (1986), Boyanov et al. (1989) and Dabovski et al. (1989) but in much more details and with better defined concepts. Modern views on the geodynamics of the region (e.g. Robertson, Dixon, eds., 1984; Dercourt et al., 1986; Dewey et al., 1986; Şengör, 1986) are compared and discussed, and alternative solutions are considered. A major handicap is the publication in Bulgarian but the short English abstract and the abundant illustrations with English captions facilitate to some extent the foreign reader unfamiliar with the Slav languages.

The paper by Gočev (Гочев, 1991) is focused on the development of the Tethys (considered as a narrow intercontinental structure) and its transformation into the Alpine orogen. Tectotypes with African, European and mixed development are outlined, and the orogenic collage is centered as in former papers of the same author, around the ophiolitic suture of the Vardar (Axios)—Izmir—Ankara Zone. The Alpine orogen is a newly-formed global disharmonic tectonic structure superimposed both over the Variscides and the Caledonides, on Meso-Europa and Meso-Africa. The Alpine orogen was formed gradually through a vertical and lateral (horizontal) orogenic growth, with the Cimmerian-Alpine Moesian platform as a foreland. The Early Cimmerian (Late Triassic) and the Austrian (Mid-Cretaceous) collisions formed the Cimmerides and the Palealpides, and from this moment onwards the orogenic structure possessed a continental character, continuing its development with the closure of a system of small oceans (Neotethys), marginal seas and island arcs. The post-collision ("neotectonic") stage began with the Priabonian when after the first Pyrenean phase the Carpatho-Balkan orogenic arc became blocked and almost immobilized in respect to its European hinterland. This was the Mediterranean orogenic stage which began in the Balkans earlier than in the Mediterranean, and formed the neoautochthon. Two types of collisional orogens are outlined. The first one (collisional block-orogens) is due to collisions between continental plates (e.g. Iberia with Aquitania). The second type (the Alps, the Balkan orogen) formed as central-type orogens through collisions between the ocean structure of the Tethys, Neotethys and the Mediterranean Sea with the continental margins of Eurasia and Africa, with subduction, obduction and thrusting, and typical continental collision of an island-arc type.

Dabovski (Дабовски, 1991) starts with the different reconstructions of Pangaea, and with Şengör's views on the Paleotethys and Neotethys. The most important chapters deal with the ophiolitic belts and sutures, the metamorphic belts, and the igneous belts. The existing models about the evolution of the Tethys and the Alpine orogen are thoroughly discussed, and an own concept (in English versions already published by Boyanov et al., 1989; Dabovski et al., 1989) about the development of the Alpine orogens and tectonic collage is outlined. The tectonic structure of the Balkan Peninsula is regarded as a part of the active continental margin of Eurasia, the principal suture being the ophiolitic belt of Vardar—Izmir—Ankara, and the main thrust belt being represented by the southwestvergent thrust (and northeastward subduction) at the eastern boundary of the Vardar Zone. The model is close to the Himalayan-Tibethan type of Dewey et al. (1986), the Rhodope Massif playing the role of "plateau", and the fold belt of the Balkanides, this of "retrocharrriage belt". A number of collage units of different origin accreted on the continental margin (Fig. 11). The Alpine orogen on the Balkan Peninsula (at least, in its eastern part) represents in fact the result of a disharmonic superposition of several more or less independent orogenic structures of Late Triassic, Mid-Cretaceous, Late Cretaceous, and Mid-Eocene age.

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