

*Studia breviora*Notes on the status and application
of the Upper Toarcian *Haugia variabilis* Zone in Bulgaria

Introduced by Buckman (1888) as a subzone within Oppel's large *Jurensis* Zone, the *Haugia variabilis* Zone is apprehended in the succeeding ammonite zonal schemes as an individual zonal unit, because it incorporates clearly determinable ammonite association that has all the features to be a separate zone. It reflects an important event in evolutionary history of the Early Jurassic Ammonitina — the appearance and the radiation of some of the oldest Phymatoceratidae — the genera *Haugia*, *Chartronia*, *Denckmannia* and *Phymatoceras*.

The *H. variabilis* Zone was first employed in Bulgaria by Сапунов (1968) as the topmost ammonite zone in the Lower Toarcian. Following Buckman's original definition for the Whitbian (Lower Toarcian Substage) and the Yeovilian (Upper Toarcian Substage) (Buckman, 1910), this zone is retained here as the lowest ammonite zone in the Upper Toarcian.

In the Northwestern Europe, the representatives of *Haugia* are widely distributed amongst the ammonite faunas occurring within the zone, whereas the main role in the contemporaneous ammonite associations in the Mediterranean region falls to the taxa of *Chartronia* and *Phymatoceras*, and to the latest Dactylioceratidae. Normally, in the Southwestern Europe *Haugia* are rare. In the Northwest European successions, the boundaries, the stratigraphy and subzonal differentiation of the zone are based on the incoming, phylogenetic development and the disappearance of the genus. However, in Bulgaria *Haugia* are of smaller biostratigraphical use than in NW Europe. The beds assigned to the zone yielded occasional examples of *Haugia*. In one poorly preserved specimen, the index species has been recognized only. Thus, the range of *Haugia* in Toarcian rocks in Bulgaria is very difficult to distinguish on the available material. What is more, *Haugia* are obviously subordinate to the other co-existing species of *Phymatoceras*, *Chartronia* and *Denckmannia*, and they cannot provide exact correlation with other areas outside this country.

Representatives of the following 14 species have been established within the *H. variabilis* Zone until now: *Haugia* cf. *variabilis* (d'Orbigny), *Haugia* cf. *jugosa* (J. Sowerby), *Haugia* cf. *pigra* (Buckman), *Haugia* aff. *phillipsi* (Simpson), *Phymatoceras iserense* (Oppel), *Phymatoceras* aff. *jardense* Gabilly, *Phymatoceras robustum* (Hyatt), *Denckmannia fabalis* (Simpson), *Denckmannia* cf. *obliquata* (Young & Bird), *Denckmannia erbaensis* (von Hauer), *Chartronia venustula* Merla, *Chartronia anomalum*

(Merla), *Chartronia chelussii* (Parish & Viale) and *Chartronia speciosum* Merla. Barring the examples of *Haugia*, such cast of features of the zone has been widely recognized throughout Central Apennines in Italy.

As *Haugia* are rare in Bulgaria, it would be reasonable to reconsider the name and stratigraphy of the *H. variabilis* Zone by using some other index-species and definitive characteristics. It appears that *Chartronia speciosum* Merla might be a more satisfactory zonal index. A second alternative index that can be used is *Phymatoceras iserense* (Oppel). Such approach is probably applicable throughout the established local zonal units, but it does not appear possible to find a more suitable index species in the current state of knowledge and further work is necessary to discover the vertical range and the composition of the other Phymatoceratinae in Bulgaria. Usually the zone is very thinly developed, condensed or indicated by scattered single finds of Phymatoceratidae. A potential in this respect is an outcrop of the Boukorovtsi Member of the Ozirovo Formation in the Ponor Planina Mountain (Western Balkan Mts.), where *H. variabilis* Zone is characterized by greater thickness and clear biostratigraphic limits. A rich association of *Chartronia*, *Denckmannia* and *Phymatoceras*, accompanied by numerous late Dactylioceratidae has been recently collected there.

To conclude, the above exposed data suggest that *Haugia* cannot be employed successfully as rule taxa for the determination of the discussed zonal unit in Bulgaria. There should be no hesitation in abandoning them but further evidence is needed before this interpretation can be adopted as generally valid. In view of expressed considerations, the *Haugia variabilis* Zone is retained in the hope that more detailed data may be forthcoming.

References

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