



New Early to Middle Norian radiolarian taxa from Alakı ray Nappe of Antalya Nappes, Antalya, SW Turkey

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Moderately to well-preserved and diverse radiolarian taxa were obtained from Gkdere Formation in the slice of Alakı ray Nappe (middle Nappe) of Antalya Nappes at the west of Antalya Bay, SW Turkey. In this region, slice of Gkdere Formation is 18.50 m. in thickness and separated into four parts. From bottom to top, Unit 1 at the base is represented by thin- to medium occasionally thick-bedded, yellowish-grey to dark grey limestone lacking cherts. Unit 2 is composed of an alternation of thin to medium-bedded, grey-beige to brownish-beige cherty limestone and thin bedded, brownish yellow shale. Diverse early to middle Norian radiolarian fauna, partly pyritized, were obtained from four samples taken from the limestone beds of this unit. Towards the upper part, an alternation of thin to medium-bedded, grey to beige limestone and thin-bedded, dark grey chert with rare shale and calciturbidite intercalations is the characteristic lithology of Unit 3. Unit 4 is very similar to Unit 2 and is characterized by an alternation of thin to medium-bedded, grey to beige cherty limestone and thin-bedded, green to greenish-grey shale with rare thin-bedded, grey to beige calciturbidite intercalations.

As a result of taxonomic study, twenty-nine radiolarian taxa were determined. Within the radiolarian fauna, some of the taxa are very abundant and characteristic as *Capnodoce serisa*, *Harsa siscwaiensis*, *Xiphosphaera fistulata* and Saturnalids as *Praehexasaturnalis burnsensis*, *P. tenuispinosus*, *Stauroacanthocircus ? poetschensis* and the co-occurrence of these taxa clearly indicates the late Early Norian to early Middle

Norian age for this part of Gökdere Formation. Four radiolarian taxa (*Kinyrosphaera helicata goekcamensis*, *Nodocapnuchosphaera altineri*, *Renzium whalenae*, *Enoplocampe ? norica*) were determined as new.

The radiolarians of the Gökdere Formation obtained in this study are comparable to the faunas described from the Queen Charlotte Islands, British Columbia and Antalya Nappes, southwestern Turkey.