

MORPHOLOGY AND COMPOSITION OF THE GOLD GRAINS OF THE GALLIKOS AREA, NORTHERN GREECE AS COMPARED TO SOME GOLD GRAINS OF THE RHINE VALLEY, F.R.G.

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The present study reports for the first time results on the morphology and the chemistry of placer gold of the Gallikos River area. Special attention is given to the trace elements in the gold grains of both areas.

The Gallikos River and its tributaries, including Spanos (25 Km), Megalo-Potami (18 Km) and Xiropotamos (15 Km) are situated in Central Macedonia in Northern Greece, 40 Km north of Thessaloniki. Geotectonically the source area belongs to the Vertiskos Series of the Serbomacedonian Massif. The gold is hosted by Miocene to Pleistocene alluvial sediments.

The investigated gold grains show characteristic differences in their morphology due to differing distances. Likewise, characteristic variations of composition are revealed by electron microprobe analyses. The following table displays averages of 257 analyses for the Gallikos area and 100 for the Rhine River.

	Au	Ag	Cu	Pt	Os	Ir	Hg	Te	Se	Mo	Total
Gallikos	89.2	10.3	0.20	0.10	0.08	0.10	b.d.	b.d.	b.d.	b.d.	100.0
Rhine	92.2	7.2	0.20	b.d.	b.d.	b.d.	b.d.	b.d.	b.d.	b.d.	99.6

In detail the individual analyses reveal several differences regarding the Au-, Ag-, Cu-, and PGE-group contents. These differences reflect different primary sources of all three tributaries probably but still larger contrasts in regard to the source areas of the Rhine River.