



# Mineral Deposits of the Tethyan Orogen: Spain to Indochina 1915–2015

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## Preface

The 7,000-km-long Tethyan orogen stretches from Spain on the west to the Indochina countries of Malaysia, Thailand, Cambodia, and Viet Nam on the east (Fig. 1). Formed since the Paleozoic, the orogen hosts a range of ore deposits that produced metal to support, over thousands of years, a range of civilizations including the Lydian, Etruscan, Trojan, Greek, Persian, Roman, Ottoman, Chinese, Champa, as well as the present-day countries that are crossed by the orogen.

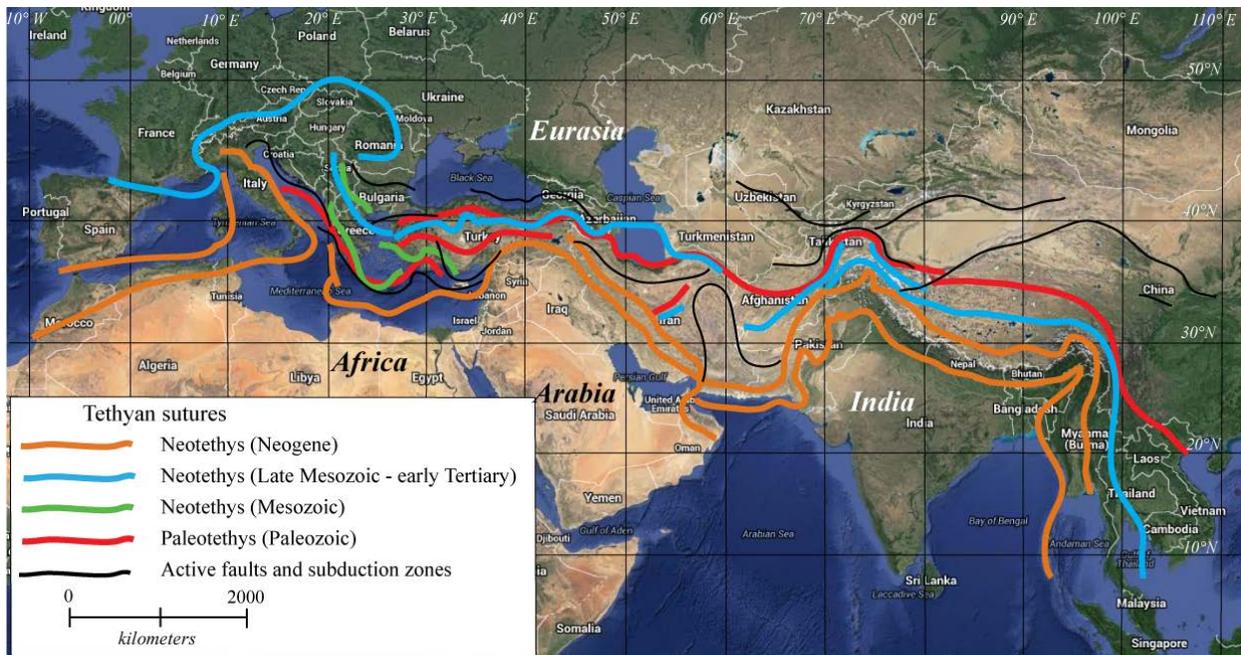


Fig. 1. Map of the Tethyan orogen showing distribution of major suture zones. Modified from Richards (2015 and references therein), and Schettino and Turco (2011). Hans Braxmeier generated base map as a layer for Google maps (available at Maps-For-Free.com).

The complex geologic history of the Tethyan orogen (Fig. 2) encompassed opening, closure, and suturing of various Tethyan ocean basins, subduction of oceanic plates, and large-scale oroclinal bending beginning in the earliest Mesozoic and continuing to the present with the ongoing collision of the African, Arabian, and Indian continental plates with the Eurasian plate and active subduction along the Andaman Sea, along the Makran arc-trench system, and in the Mediterranean Sea. Further complicating the complex Tethyan geology are microcontinental fragments formed during opening of the Paleo- and Neotethyan oceans as well as subduction-related magmatic arcs such as the Kokistan arc currently embedded in the Himalayan Mountains and the Apuseni-Banat-Carpathian-Dinaride-Pontide arcs embedded in the Balkan countries and Turkey. Currently, most of the Tethyan orogen forms a major suture zone between continental plates, with active subduction being present only along smaller segments of the orogen.

Accompanying formation of the complex geologic history along the Tethyan orogen are a plethora of ore deposit types reflective of the complex and shifting geotectonic environments. Deposit types found along the orogen include ophiolite-hosted chromite, sedimentary rock-hosted Cu-Pb-Zn, iron-oxide copper-gold (IOCG), orogenic gold, volcanic-hosted massive sulfide, tin-tungsten, borate, marble, magnesite, porphyry Cu(-Au-Mo), vein, skarn and replacement, and epithermal systems, many of which are mined for clay used in the ceramic industry.

This CD-ROM compiles 178 articles published by the Society of Economic Geologists since 1915 in their flagship journal, *Economic Geology*, as well as in SEG Guidebooks and Special Publications. Most of the articles have been published by the Society since 1960, with only a handful of articles published prior to then. The chronologic emphasis likely reflects global political constraints as well as the increasing international impact and scope for the Society.

The articles on the CD are divided by country, beginning with Spain and proceeding from west to east along the orogen, ending with Malaysia and Thailand in Indochina. In a few cases, several countries are combined into a region to facilitate the compilation. In addition, articles that are regional in scope are separated and placed in a distinct section. However and unfortunately, the collection of articles does not do a complete justice to the range of ore deposit types and their host geology that is present in the Tethyan orogen, as copyright laws prohibit the inclusion of articles published in other professional society journals or in government publications.

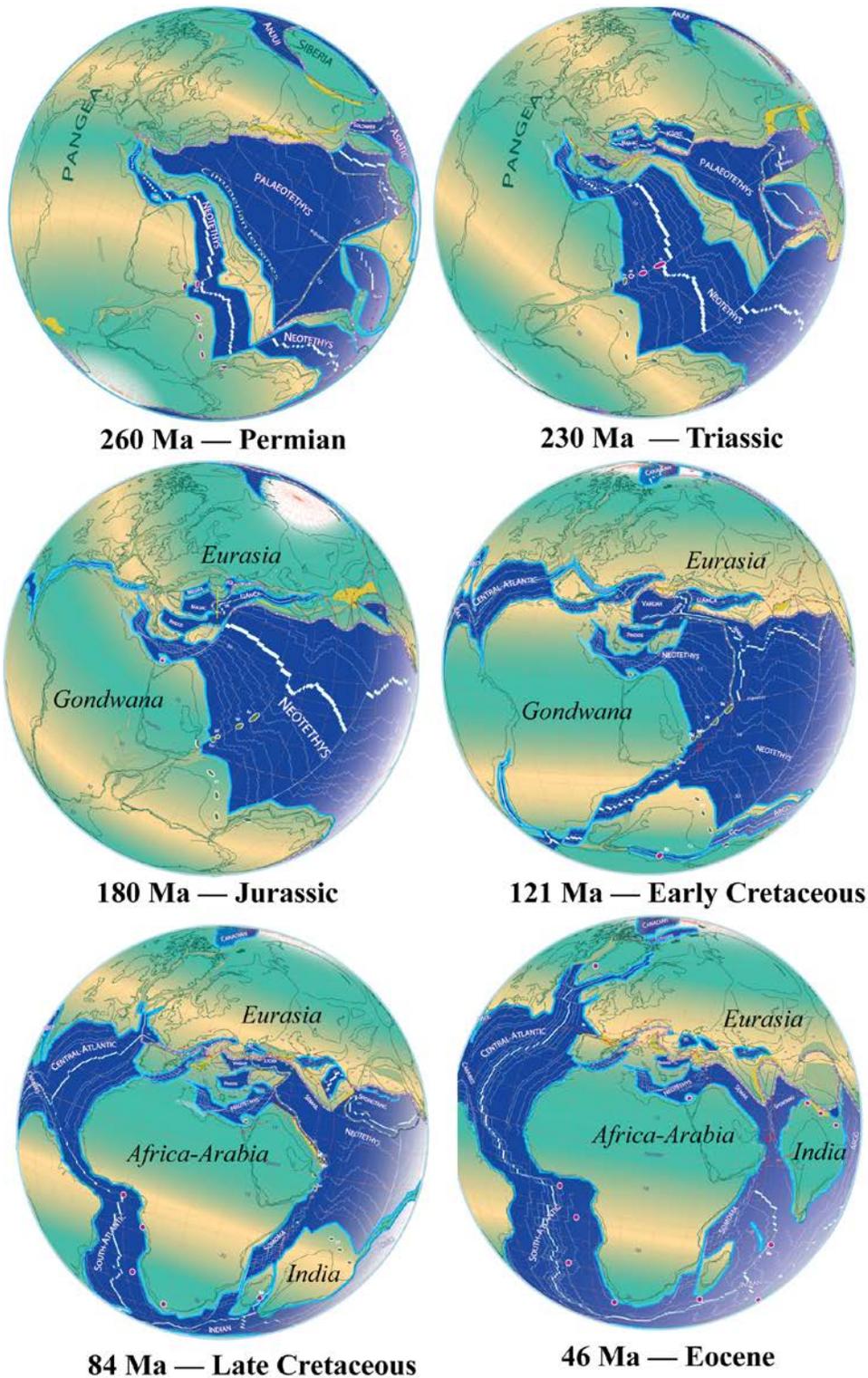


Fig. 2. Plate reconstructions for the Tethyan orogen between the Permian and Eocene. Reconstructions provided by Stampfli and Borel (2002, 2004) and accessible at <http://www.unil.ch/iste/en/home/menuinst/recherche/geology-and-geodynamics-of-mountain-belts/gerard-stampfli.html>. See Figure 1 for current plate configuration.

## REFERENCES

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