

In the Laouni terrane, which belongs to the polycyclic Central Hoggar domain, various areas contain outcrops of formations showing granulite-facies parageneses. This high-temperature metamorphism was accompanied by migmatization and the emplacement of two types of magmatic suite, one of continental affinity (garnet pyroxenites and granulites with orthoferrossilite-fayalite-quartz), and the other of arc affinity (layered metanorites). Paragenetic, thermobarometric and fluid-inclusion studies of the migmatitic metapelites and metabasites make it possible to reconstruct the P-T-H<sub>2</sub>O path undergone by these formations. This path is clockwise in the three studied areas, being characterized by a major decompression (Tamanrasset: 10.5 kbar at 825 °C to 6 kbar at 700 °C; Tidjenouine: 7.5 kbar at 875 °C; to 3.5 kbar at 700 °C; Tin Begane: 13.5 kbar at 850 °C; to 5 kbar at 720 °C), followed by amphibolitization that corresponds to a fall of temperature (from 700 to 600 °C) and an increase in water activity (from 0.2-0.4 to almost 1). The main observed features are in favour of petrogenesis and exhumation related to the Eburnean orogeny. However, the lacks of good-quality dating work and a comparison with juvenile Pan-African formations having undergone high-pressure metamorphism, in some cases reaching the eclogite facies, do not rule out the possibility that high-temperature parageneses are locally due to Pan-African events. © 2004 Elsevier Ltd. All rights reserved