**DISTRIBUTION OF THE TRANSSCANDINAVIAN IGNEOUS BELT IN THE BALTIC SEA REGION**

*by*

*Salin, E.1 and Sundblad, K.1*

*1University of Turku, Department of Geography and Geology, FI-20014 Turun yliopisto, Finland*

*E-mail:* *evsere@utu.fi**,* *krisun@utu.fi*

The Transscandinavian Igneous Belt (TIB) is a major magmatic complex along the western margin of the Svecofennian Domian in the Fennoscandian Shield in which several granitoid generations (TIB 0, TIB 1, TIB 2 and TIB 3) have been recognized (Larson & Berglund 1992). Recent studies have also identified the presence of the 1.77-1.81 Ga TIB 1 generation at several drill sites below the Phanerozoic sedimentary cover in the Baltic Sea region: Kvarne on southernmost Gotland (Sundblad et al. 2003), Böda Hamn and Valsnäs on northern and central Öland respectively (Salin et al. 2018), as well as E-7, off shore the Latvian/ Lithuanian border (Salin et al. 2016).

In this study, we report U-Pb zircon ages from the Precambrian basement in the Baltic Sea region at two more sites: percussion drilling material from Frigsarve (southern Gotland) and drill core D1-1 from the Lithuanian off shore region. Zircons from Frigsarve yielded a LA-ICP-MS age of 1845±4 Ma, which is comparable with the age of the TIB 0 generation in southeastern Sweden. According to crystal morphology and SIMS ages, the zircons from the D1-1 drill core belong to two generations. The larger zircon grains have an age of 1792±8 Ma which is similar to the TIB 1 generation. The smaller zircon grains are 1744±7 Ma old and are interpreted to record a later 1.73–1.68 Ga high grade metamorphic event, which is widespread in Western Lithuania (Skridlaite et al. 2014).

In conclusion, all data from previous and current studies show that the Trans-scandinavian Igneous Belt extends over vast areas in the Baltic Sea region, from Öland and southern Gotland to the off shore regions of Latvia and Lithuania.

**REFERENCES**

**Larson, S. Å & Berglund, J. 1992**. A chronological subdivision of the Transscandinavian Igneous Belt – three magmatic episodes? GFF 114, 459–461.

**Salin, E., Sundblad, K., Woodard, J. & Lahaye, Y. 2016**. The Precambrian crust in the Baltic Sea region. Bulletin of the Geological Society of Finland, 32nd Nordic Geological Winter Meeting, Helsinki. Abstract volume, p. 162.

**Salin, E., Sundblad, K., O´Brien, H., Lahaye, Y. & Woodard, J. 2018.** Age and geochemistry of granitoids in the Precambrian basement of Öland, SE Sweden – implications for the extension of the Transscandinavian Igneous Belt in the Baltic Sea region. 33rd Nordic Geological Winter Meeting, Copenhagen, Abstract volume, 76–77.

**Skridlaite, G., Bogdanova, S., Taran, L. & Baginski B. 2014.** Recurrent high-grade metamorphism recording a 300 Ma long Proterozoic crustal evolution in the western part of the East European Craton. Gondwana Research 25, 649–667.

**Sundblad, K., Claesson, S. & Gyllencreutz, R. 2003**. The Precambrian of Gotland – a key to the understanding of the geologic environment for granitoids in the Baltic Sea region. Granitic systems – State of the art and future avenues. An international symposium in honor of professor Ilmari Haapala. Abstract volume, Helsinki, 102­–106.