

Roundness, shape and lithology of the pebbles of the Cancaniri tillites in southern Bolivia: Genetic and paleogeographic implications

Frank Schönian¹, Sven O. Egenhoff² and B.-D. Erdtmann¹

¹Institute for Applied Geosciences II, Technical University of Berlin, Sekr. EB 10, Ernst-Reuter-Platz 1, D-10587 Berlin, Germany; ²Institute for Geology and Palaeontology, Technical University (Bergakademie) of Freiberg, Heinrich-Cottau-Str. 9, D-09596 Freiberg, Germany



Fig. 1: Location of the study area

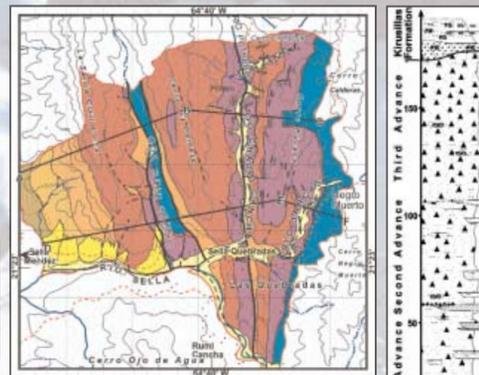
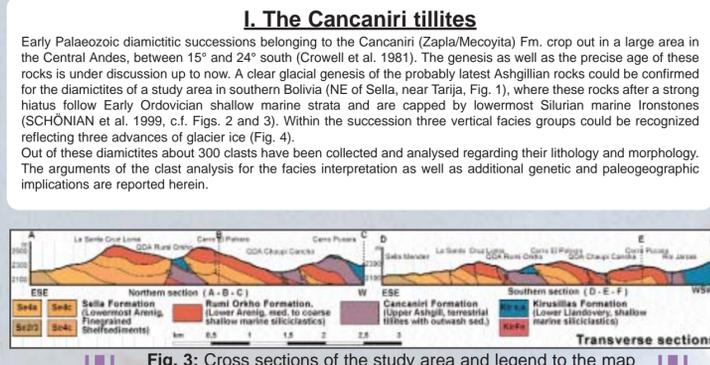


Fig. 3: Cross sections of the study area and legend to the map

Fig. 2: Geological map of the study area

Fig. 4: Generalized section of the Cancaniri Fm. in the study area

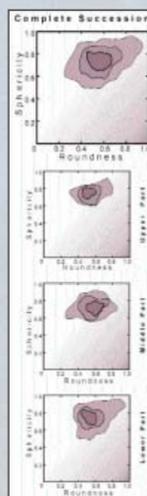


Fig. 5: Sphericity/roundness diagrams

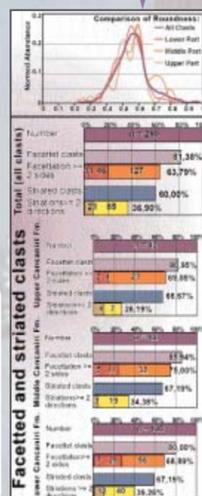
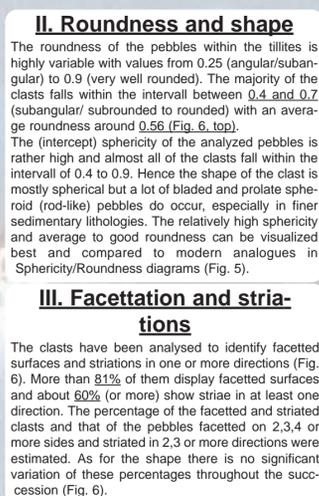


Fig. 6: Roundness and the amount of faceted and striated clasts

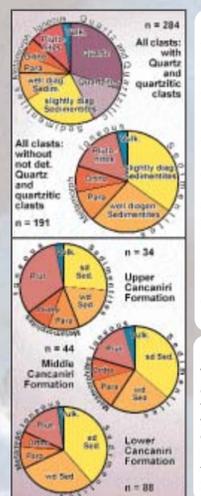


Fig. 7: Composition of the clasts in the Cancaniri Diamictites

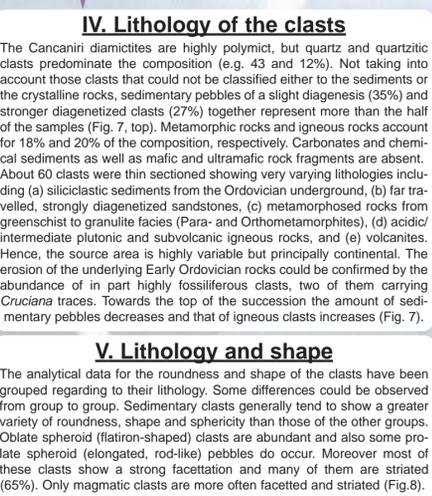


Fig. 8: Roundness/ Sphericity and Facettation and Striations after lithological classes

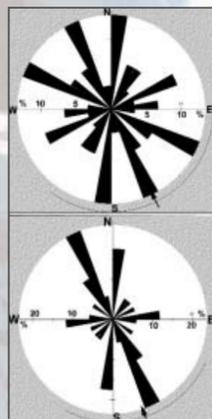


Fig. 9: Orientation of clasts in the Cancaniri Fm. (complete succession and lower part)

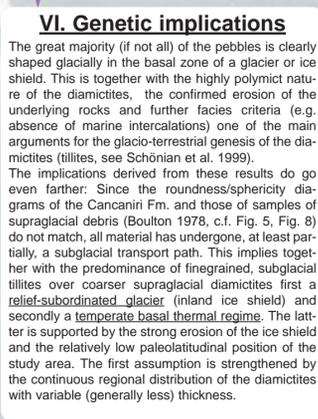


Fig. 10: The discussed source areas in their regional context



Fig. 11: The suggested source area

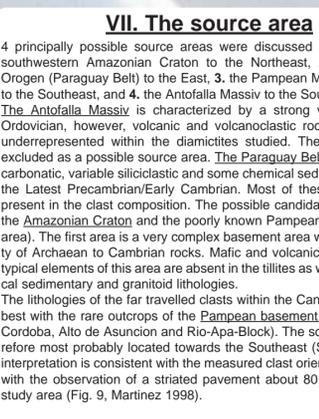


Fig. 12: Paleogeography relations in the latest Ashgillian

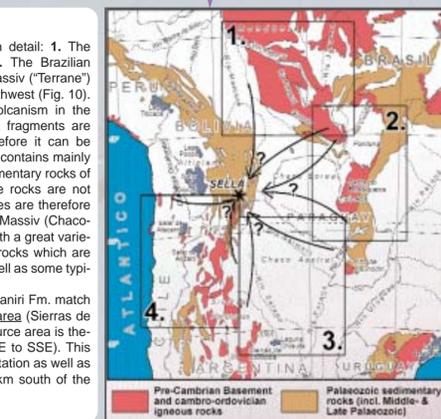


Fig. 10: The discussed source areas in their regional context

The Moun Pucara (= "castle" in Quechua) in the study area (see Fig. 2) and the largest clast found (near Negro Muerto)

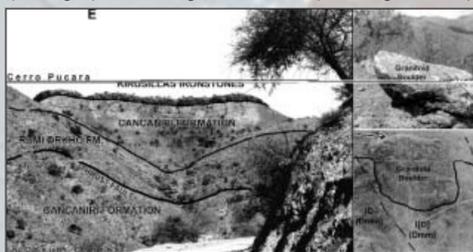


Fig. 11: The suggested source area

VIII. A Pampean Ice Shield in the Late Ashgill - preliminary results -

The results reported herein in concordance with recently published data (Buggisch und Astini 1991, Astini 1999, Martínez 1998) lead to the conclusion of the existence of an independent (?) Latest Ordovician ice shield on Western Gondwana which has been responsible for the deposition of tillites from western through northwestern Argentina to southern Bolivia (Don Braulio, Zapla/Mecoyita and Cancaniri Fms., Fig. 11). Regarding the available data about transportation indicators it could have possibly been centered somewhere in the present day Southern Chaco between the rivers Río Salado, Río Bermejo and Río Paraná. A candidate for this glacial center could be the mutual southwestern continuation of the Brazilian Foldbelt (Paraguay Belt) beneath the Phanerozoic cover of the Chaco plain (Fig. 11, c.f. Fig. 12). In this context an interesting finding is the match between the threefolded glacial succession and the assumed temperate thermal regime in southern Bolivia and western Argentina (c.f. Astini 1999). This and the lowermost Silurian ironstones, occurring in all of the discussed localities, make a connection of these depositional areas even more plausible. More data are needed to determine the extent of the ice shield in western to northern Argentina as well as its northern continuation into central Bolivian realms of the Cancaniri basin (c.f. Fig. 12).

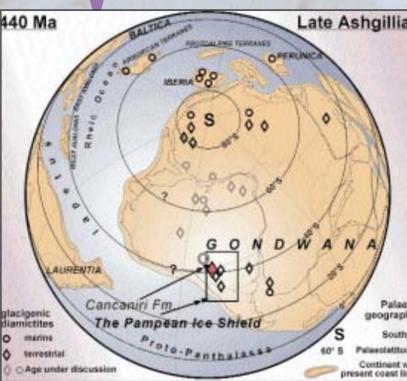


Fig. 12: Paleogeography relations in the latest Ashgillian

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