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PROGRAMME WITH ABSTRACTS

2021 Virtual Annual Meeting of IGCP 653

International Geoscience Programme Project 653
The Onset of the Great Ordovician Biodiversification Event

2021 Virtual Annual Meeting of IGCP 735

International Geoscience Programme Project 735
Rocks and the Rise of Ordovician Life – Filling knowledge gaps in the Early Palaeozoic Biodiversification

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Akidograptus ascensus at Dob's Linn, Scotland. However, the Cambrian-Ordovician boundary age is now estimated at 486.9 ± 1.5 Ma and the Ordovician-Silurian boundary at 443.1 ± 0.9 Ma. The new best estimate for the duration of the Ordovician Period is 43.8 million years. The largest differences from the GTS2012 timescale are a 1.5 Myr older Tremadocian base (C/O boundary), a 1.3 Myr older Dapingian base, and a 2.1 Myr older Darriwilian base. The estimated duration of the Hirnantian Stage has increased from 1.4 Myr to 2.2 Myr. Several new and expanded sections on chemostratigraphy, cyclostratigraphy, and understanding uncertainty in timescale construction are included in the chapter. Finally, for the first time an independently time-scaled global CONOP9 composite conodont range chart is included to compare with the graptolite-based timescale and facilitate the application of the timescale to carbonate facies sections.

Keywords: Ordovician, timescale, graptolite, conodont, CONOP9

Late Ordovician palynomorphs from the basal strata of the La Chilca Formation, Central Precordillera, Argentina

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Abstract

The first record of Late Ordovician palynomorphs is documented in the basal strata of the La Chilca Formation, Hirnantian–early Wenlockian in age, in the Poblete Norte section, Talacasto area, Central Precordillera of San Juan Province, Argentina. This unit unconformably overlies Early Ordovician shelf limestone of the San Juan Formation, and in turn is paraconformably overlain by shallow-water deposits of the Los Espejos Formation of middle Wenlockian–Pridolian age. In Talacasto area, palynologic works carried out in the La Chilca and Los Espejos formations at Quebrada Ancha and Baños de Talacasto sections were published by several authors. In the Poblete Norte section, the basal cherty pebble conglomerate of the La Chilca Formation is not recognized. Instead, a ferruginous reddish matrix-supported sandstone level, with a low carbonate cement content, occurs. Overlying in sharp contact there is a ferruginous reddish matrix-supported sandstone level bearing phosphate nodules and pebble-sized clasts of chert. This bed followed by a shaly siltstone layer with scattered ooids passing to a Fe-phosphate oolitic bed in sharp contact with the base of the Cuarcitas Azules Member. It is noteworthy that the Hirnantian–Rhuddanian graptolite-rich siltstones and shales of the Salto Macho Member have not been recognized in this section. From this oolitic bed, a diverse assemblage of well-preserved palynomorphs composed of ten species of chitinozoans, seven acritarchs and six cryptospores are documented. Several age- diagnostic of the late Ordovician are recorded such as an acritarch *Cheleutochroa diaphorosa* Turner and chitinozoans *Ancyrochitina* sp. cf. *Ancyrochitina merga* (Jenkins), *Armoricochitina* sp. cf. *Armoricochitina nigerica* (Bouché), *Calpichitina*

lenticularis (Bouché), *Conochitina minnesotensis* (Stauffer), *Euconochitina lepta* (Jenkins), *Lagenochitina deunffi* Paris, *Spinachitina bulmani* (Jansonius). This association of chitinozoans and especially the presence of the Hirnantian *Armoricochitina* sp. cf. *Armoricochitina nigerica* allows the confirmation of a late Ordovician age (Hirnantian), mostly related with Gondwana-Perigondwana regions, in accordance with the dating of the studied interval based on graptolites from the *M. persculptus* Zone in the Talacasto area (Baños de Talacasto section). In Talacasto area, the Silurian species *Armoricochitina nigerica* and *Crassianguilina tessellata* Jardiné *et al.* emend. Wauthoz *et al.* are forms of the *Atavograptus atavus* Graptolite Zone (early–mid Llandoveryan) at Baños de Talacasto section, and of the Llandoveryan–Wenlockian of the top of the La Chilca Formation at Quebrada Ancha section, respectively. *Quadraditum deunffi* Pöthe de Baldis has been mentioned in the lower Member of the Los Espejos Formation of the Precordillera region (Los Azulejitos section). The temporal distribution of these species has been modified recently, therefore, a review is recommended to rule out reworking on the younger sediments.

Keywords: palynomorphs, Hirnantian, La Chilca Formation, Precordillera, Argentina

First possible record of the Hirnantian glaciation in the Caparo region, Venezuelan Andes

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Abstract

Studies of the Ordovician rocks of the southern Andean flank have focused on the lithostratigraphic and biostratigraphic description of the Caparo Formation, the first descriptions of this unit assign it an Ordovician age, later that, three faunal levels were recognized whose age did not reach the Late Ordovician. In oil exploration projects, stratigraphic successions on eight localities of the Caparo region were reviewed, obtaining a composition of siltstones and sandstones intercalated with conglomerates for the Caparo Formation, and presence of Late Ordovician trilobites, brachiopods, corals, crinoids, bivalves, bryozoans and sponges, dated as Sandbian by the graptolite fauna of *Nemagraptus gracilis* Zone recorded with the assemblage. Overlying the Caparo Formation, a thick Silurian succession (early Llandovery to Wenlock) was defined, having yielded prolific brachiopod assemblages dominated by genera such as *Meifodia*, *Eostropheodonta*, *Eocoelia* and *Antirhynchonella*. The stratigraphic contact between the Ordovician and Silurian strata was proposed to be a hiatus involving the apparent absence of Katian to Hirnantian sedimentary record. However, the detailed study of three localities along of Uribante-Caparo dam reservoir (Paso Caparo, Caparito and El Cambur creek sections) has allowed to record a relatively thin (<50 m) sequence of conglomerates, lenticular sandstone bodies and possible diamictites below the early Rhuddanian fossiliferous sediments of El Horno Formation. The new