Ber. Inst. Erdwiss. K.-F.-Univ. Graz	ISSN 1608-8166	Band 16	Graz 2011
IGCP 596 Opening Meeting	Graz, 19-24th September 2011		

Carboniferous fossils of Mongolia

ARIUNCHIMEG, Ya.

Paleontological Center, Mongolian Academy of Sciences, Enkhtaivan evenue 63, Ulaanbaatar, Mongolia; *ariuna_ya@magicnet.mn*

The lower Carboniferous of Mongolia is characterized by marine sedimentation, and the upper Carboniferous by a dominance of terrestrial volcanic and clastic deposits. Only in the south-eastern part Carboniferous reef deposits are developed. The Carboniferous deposits of Mongolia can be divided into main four provinces. Continuous stratigraphic sections with fossils are absent there so the sporadic biostratigraphic studies have to be limited to some isolated outcrops (DURANTE *et al*. 1980, Fig.1).

Brachiopods, bryozoa and crinoids as well as conodont, fusulinaceans and corals in some provinces are of primary importance in the lower Carboniferous, while goniatite, bivalves and macroflora play a supporting role. Phytostratigraphic work for the upper Carboniferous have been well done.

In the northern part of Mongolia biostratigraphic studies on main fossil groups such as brachiopods, bryozoans are systematically undertaken in Mongol-Ochotsk province and related Orchon, Bayanchongor and Bayantsagaan basins. The fauna of Early Carboniferous of northern Mongolia include some characteristic taxa of the Siberian provinces. Terrestrial sediments contain abundant representatives of the Angaran floras (DURANTE *et al*. 1996).

Coal-bearing lower and upper Carboniferous sequences containing floras of Angarian affinities are developed along the Tsagaanshuvuut fault in Western Mongolia.

In the southern part of Mongolia the upper Carboniferous is rather well developed while the lower Carboniferous is absent in some regions. The brachiopods, bryozoans and crinoids recovered from the Lower Carboniferous and megaplants from the Upper Carboniferous. Very rare finds of ammonoids are reported from the Baruunhurai region (KUZINA *et al*.1994).

The Carboniferous of south-eastern Mongolia is dominated by a stable shallow shelf facies with Tethyan affinity. Three fusulinid zones (Serpuchovian-Bashkirian *Archaediscus-Eostaffella*, Moskovian *Profusulinella* and Kassimovian-Gjelian *Triticites*) and one coral zone (Visean-Serpuchovian *Diphyphullum-Dibuphullyum*) can be recognized in this region (SUETENKO 1968). This zone marks the boundary between South Asian domain and the Gondwana domain.

On a basis of a study of Carboniferous fossils five associations with flora (Lepidophitian-1, Lepidophitian-2, Lepidophitian-3, Pteridospermian or Angaropteridiumian and Pteridospermian-Cordaites), six with brachiopods (*Ovania*, *Scissicosta*, *Parallelova*; *Absenticosta*, *Impiacus*, *Lanipustula*, *Eolissochonetes-Sajakella-Ectochoristites* and *Jakutoproductus*) (AFANASJEVA *et al*. 2003) and eight bryozoans (*Nematopora afgana*, *Pseudobatostomella minima*, *Rhombopora simplex*, *Sulcoretepora minor*, *Paranicklesopora vera*, *Lanopora eximia*, *Mongolodictya insperata* and *Shulgapora aguiulensis*) are established (ARIUNCHIMEG 2008).

The conodonts along the Devonian-Carboniferous boundary have been reported from two localities in Southern Mongolia and following conodon zones were recognized: *sulcata-duplicata-crenulata-isostica-typicus* (NYAMSUREN 1998).

Based on reliable fossil data the biostratigraphic framework provided is a foundation for chronostratigraphic correlation of the Mongolian Carboniferous with the standart schenes for the Carboniferous system accepted in Europe and other parts of the world.

References

ARIUNCHIMEG, Ya. (2008): Compleksy paleozoiskich mshanok Mongolii I ich characteristika. - Tr. Ins-ta Geologii i min. resursov, vyp., 18: 66-93. [in Russian]

AFANASJEVA, G.A., ALEKSEEVA, R.E., GRUNT, T.A. *et al*. (2003): Paleontologiya Mongolii. Tom Brachiopody. - M., Nauka: 254. [in Russian]

DURANTE, M.V., GOLIDENBERG, V.I., DERGUNOV, A.B., LUVSANDANZAN, B. *et al*. (1980): Stratigrafiya camennougolinych otlojenii Mongolii. V kn.: Biostratigrafiya nijnego kembriya I carbona Mongolii. - M. Nauka, Trudy SSMNIGE, vyp., 26: 192. [in Russian]

DURANTE, M.V., LAZAREV, S.S. & PAVLOVA, E.E. (1996): The Carboniferous of the world, vol. III. The former USSR, Mongolia, Middle Eastern platform, Afghanistan, and Iran: 409-441.

KUZINA, L.F. & LAZAREV, C.C. (1994): New early Carboniferous ammonoids from Mongolia. - Paleontological Journal, 28 (1A): 157-171.

NYAMSUREN, G. (1998): Biopstratigraphiya I conodonty devona-nijnego Carbona yujnoi Mongolii. - Moskva, PIN. Avtoreferat dis. Kand. geol-min.nauk: 22. [in Russian]

SUETENKO, O.D. (1968): Pervye nachodki foraminifer v yugo-vostochnoi Mongolii. - Dokl. AN SSSR,T., 180 (3): 691-695. [in Russian]

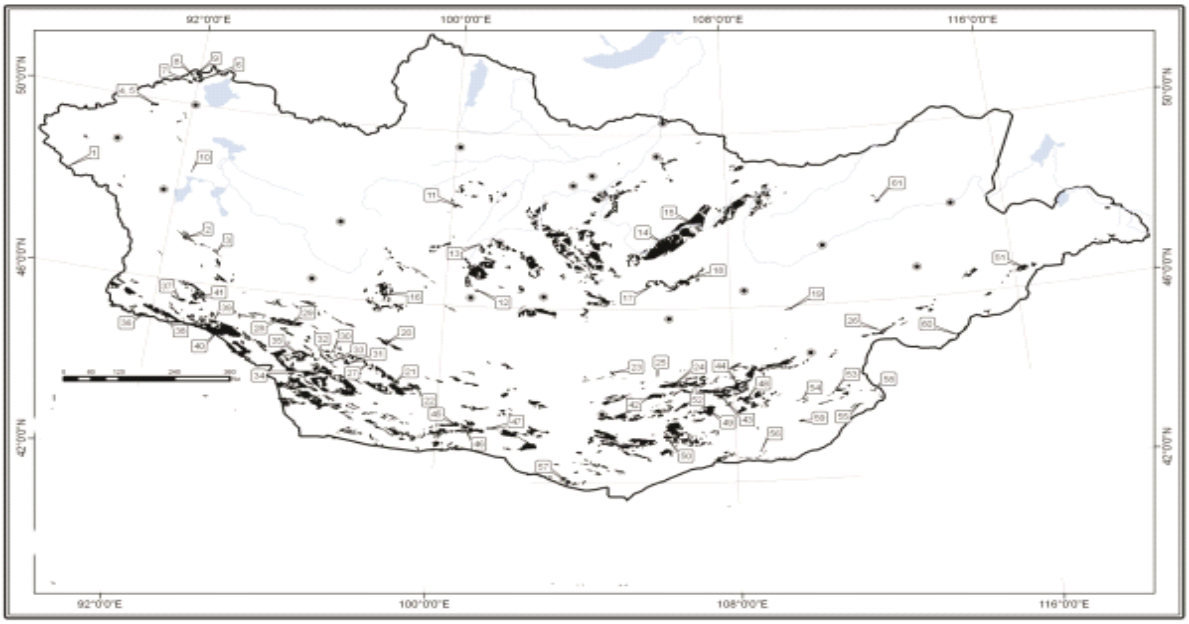

Fig.1: Map showing the distribution of Carboniferous outcrops and studied sections.