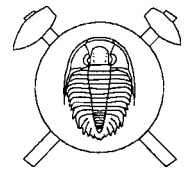


## Joachim Barrande and the Paleontology of Paleozoic in Anjou (Armorican Massif)

(1 text-figure)

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South-East of the Armorican Massif, the Anjou area, represents a region distinguished by a special development (H. Lardeux and P. Cavet, 1994). The various Structural units that compose it, are considered to be separate, delimited by faults of W-NW/S-SE strike, having only few common features (Fig. 1).

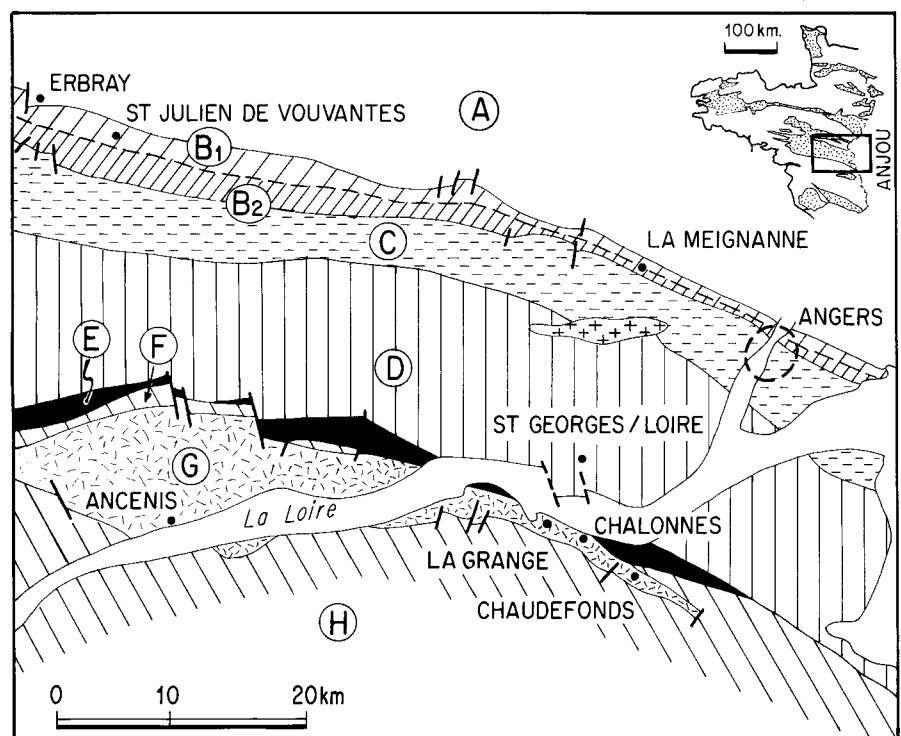
Fossiliferous outcrops are known for a long time and some of them are famous due to their peculiarities, richness of fossils or are significant from the view of history of science, as they were studied by famous scientists. This is the case for the pelites with *Paradoxides* of Middle Cambrian age from Cléré-sur-Layon whose facies and fauna remind us of the classic Skryje outcrops in Bohemia. It is also the case for the black limestones of La Meignanne near Angers (Ludlow–Přídolí), containing many Bohemian bivalves, or for the Erbray Limestone (Pragian–Emsian) brought to fame by the significant monograph by Charles Barrois. This occurrence markedly reminds the Bohemian Koněprusy Limestone. The same is true of the La Grange Limestone, near Chalonnnes, of Emsian age, which shows a typical Bohemian facies and which is remarkably rich in conodonts, goniatites and tentaculites (dacryoconarids).

At the time when paleontologists from Angers started their research (for example G. Ferronnière, later J. Péneau to mention only the first two), they used the remarkable “Système Silurien du centre de la Bohême” by Joachim Barrande. However, they used also, a precious collection of Bohemian fossils determined and donated them by Joachim Barrande. One can still admire the perfect calligraphy of the labels of this collection containing beautiful samples.

The inventory list that accompanied the collection offers five kinds of information: the label number, the fossil number, the fossil’s name, the locality and the stage. In total, there are 310 “label numbers” virtually corresponding to 310 species and 705 samples. There are thus 106 species of trilobites, 70 species of cephalopods, 30 species of gastropods, 45 species of brachiopods, 13 species of bivalves, 8 species of graptolites, 12 species of echinoderms.

Thanks to Ivo Chlupáč (1983 and 1999), it is possible to establish the correlation between Barrande’s “stages” and the formations recognised today. Ivo Chlupáč’s work also makes it possible to update the name of several classic Bohemian localities.

Fig. 1. Paleozoic units of Anjou.  
A – Medio-North-Armorican Domain; B1 – Saint-Julien-de-Vouvantes Unit: Rhenish affinities; B2 – Saint-Julien-de-Vouvantes Unit: Bohemian affinities; C – Lanvaux – Les-ponts-de-Cé Unit; D – Saint-Georges-sur-Loire Unit; E – Sillon houiller de la Basse-Loire; F – Horst of Pouillé; G – Ancenis Basin; H – Metamorphic rocks of Les Mauges Group.



There are too many publications about Paleozoic paleontology of Anjou to list them all here. There is much to be gained by studying those devoted to general paleontological studies such as Charles Barrois (1989), George Ferronnière (1920), Joseph Péneau (1920), Dorothée Le Maitre (1934), or those devoted to fossils groups such as trilobites: Jean Pillet (1972), brachiopods: Janine L'Hotellier-Videau (1970), goniatites: Heinrich Erben (1960), conodonts: Maurice Lys and Aliette Mauvier (1965), Pierre Bultynck (1989), tentaculites: Hubert Lardeux (1969), Muriel Vidal and al. (1994).

Joachim Barrande's work has definitely played an important role in the research done later in Anjou since some geological formations, and in particular those of Devonian age in Ancenis Basin, are remarkably similar in their facies and fauna to the Bohemian units and assemblages.

We are deeply indebted to Joachim Barrande for passing on his collection. The emotion one feels when picking up a sample from his collection reminds us of the huge amount of work that went into it and how this famous scientist devoted his whole life to Paleozoic paleontology.

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#### References

- Barrois, C.* (1889): Faune du Calcaire d'Erbray. Mémoires de la Société Géologique du Nord, 3, 348 pp.
- Bultynck, P.* (1989): Conodonts from the la Grange Limestone (Emsian), Armorican Massif, North-Western France. – Cour. Forsch.-Inst. Senckenberg, 117, 173–203. Frankfurt a. M.
- Chlupáč, I.* (1983): Stratigraphical position of Barrande's paleontological localities in the Devonian of Central Bohemia – Čas. Mineral. Geol., 28, 261–276. Praha.
- (1999): Barrande's stratigraphic concepts, palaeontological localities and tradition – comparison with the present state. – J. Czech Geol. Soc., 44, 1–2, 3–30. Praha.
- Erben, H. K.* (1960): Primitive Ammonoidea aus dem Unterdevon Frankreichs und Deutschlands. – Neu. Jb. Geol. Paläont., Abh., 110, 128 pp.
- Ferronnière, G.* (1920–1922): Le Calcaire de la Grange, près Chalonnnes (M et L). – Bull. Soc. Sci. Natur. de l'Ouest de la France, 3ème série, 6, 1920, 120–139; 4ème série, 1, 1921, 1–34; 4ème série, 2, 1922, 1–37.
- Lardeux, H.* (1969): Les Tentaculites d'Europe occidentale et d'Afrique du Nord. – Cah. Paléont. du C. N. R. S., 238 pp.
- Lardeux, H. – Cavet, P.* (1994): Paleozoic of the Ligerian Domain in *J. D. Keppie* (ed.): Pre-Mesozoic Geology in France and related areas. Springer Verlag, 152–156.
- Le Maitre, D.* (1934): Etudes sur la faune des calcaires dévoniens du Bassin d'Ancenis. – Mém. Soc. Géol. du Nord, 12, 267 pp.
- L'Hotellier-Videau, J.* (1970): Rhynchonellida de quelques gisements dévoniens (Devonien inférieur et Eifelien) du Sud-Est du Massif armoricain. – Thèse 3ème cycle Université de Nantes, 220 pp.
- Lys, M. – Mauvier, A.* (1965): Résultats micropaléontologiques (Conodontes) dans le Silurien et le Dévonien inférieur de l'Anjou. – Mém. Bur. Rech. géol. min., 33, 1964, 59–60. Paris.
- Péneau, J.* (1929): Recherches stratigraphiques et paléontologiques dans le Sud-Est du Massif armoricain (synclinal de Saint-Julien-de-Vouvantes). – Bull. Soc. Sci. Natur. de l'Ouest de la France, 1928, 4ème série, 8, 300 pp.
- Pillet, J.* (1973): Les Trilobites du Devonien inférieur et moyen du Sud-Est du Massif Armoricain. – Mém. Soc. Et. scientifiques de l'Anjou, 1, 307 pp.
- Vidal, M. – Goujet, D. – Janvier, Ph. – Lardeux, H.* (1994): Micro-restes de Vertébrés du Calcaire de la Grange, Devonien inférieur (Emsien) du Sud-Est du Massif Armoricain. – Neu. Jb. Geol. Paläont., Abh., 94, 2–3, 321–341. Stuttgart.