currents. This implies that spiny Lower Devonian plants may represent a special adaptation to frequently (or seasonally?) flooded river sides and banks. If this suggestion is correct, the relative abundance of spiny plants can reflect a repeatedly high energy palaeoenvironment in a fluvial/deltaic system.

ABOUT THE USE OF GIS FOR GEOLOGICAL PURPOSES

I. HALLEUX

ABSTRACT.- The geologist has to solve spatially distributed problems (logs description, cross-section, correlation, ore estimation, etc.), and thus requires elaborate software possibilities. He needs topological and attribute databases, for an accurate digital description of the data, but also procedures and techniques for data management and spatial analysis as well as elaborate display facilities.

The database structure, beyond the usual functionalities of structure flexibility, friendly coding, correcting and editing, etc. must be 3D architected and must offer large text facilities. Besides algorithms for data classification and selection, networking and overlay, the system has to be able to integrate soft information, to take into account the spatial reference (through geostatistics, for instance) and to propose typical geological procedures (stereographic projections, fence-diagrams, 3D models, ...).

Using Geographic Information Systems (GIS) for geological purposes is a realist solution. The young and expanding market offers global and dedicated versions, running on PC or workstations. However, for very pointed problems like the geological ones, a unique solution is uncommon, even non-existent. The softwares are fortunately open and the geologist, through the combination of well choosen programs, can find directly and fully operational systems.

At the Natural Resources Department of INIEX, GIS are commonly used for practical purposes. The example of an actual research will be given, which show the interest but also the software requirements of GIS; it concerns the thematic mapping of the exploitation potentialities of the «Petit Granit» in Belgium.

STRIKE SLIP DEFORMATION IN THE STAVELOT MASSIF

F. GEUKENS

ABSTRACT.- The Stavelot Massif can be divided into a northern part with a NE-SW (hercynian) direction and a southern part characterised by a E-W (caledonian) tectonic style.

These two parts are separated by a left hand (N50°-60°E) strike slip fault system just south to the Malmedy Graben.

The movements along this fault system can be seen in the tectonic structure of the southern part, viz.: a window structure at Falize-Ligneuville, a very complicated structure at Trois Ponts, and the typical bending of the dipping Rw5 anticline at He de Hierlot.

This strike slip fault may also be responsible for the extension of the Lower Devonian near Jevigné.

The north east prolongation of this strike slip fault passes through the seismic centre of Robertville.


RECENT CONTRIBUTION TO TEPHROSTRATIGRAPHY BETWEEN THE EIFEL AND THE FRENCH MASSIF CENTRAL

E. JUVIGNE

ABSTRACT.- Using microprobe analyses of minerals, criteria have been established for the identification of tephra which occur in Middle and High Belgium, and also in the Vosges/France: the Laacher See Tephra (11.000BP), the Eiltville Tephra (16.000BP), and the Rocourte Tephra (between 62.000 and 106.000BP).


1. Natural Resources Department - INIEX, rue du Chéra, 200, B-4000 Liège.
Since glass shards have not been found in several localities in the investigated regions, the most recent tephra was attributed either to boreal trachytic eruptions in the Chaîne des Puys (French Central Massif), or to the Allerod phonolithic eruption of the Laacher See (Eifel). The clino- pyroxene of the Laacher See Tephra are more calcic than those of the trachytic eruptions of the Chaîne des Puys. The composition of titanite is also quite different in each tephra. Therefore the only recent tephra layer in the Vosges and in High Belgium must be correlated with the Laacher See Tephra.

A basic tephra layer which was found in loess profiles of Belgium and The Netherlands was correlated previously with the Eltville tephra which is well known in central Germany. This correlation was contested using stratigraphical criteria. Recently it has been demonstrated that the clino.pyroxene and olivin respectively have identical chemical composition throughout the lobe.

For the last 40 years, enstatite is considered as the guide mineral of the widespread Rocourt Tephra. Since enstatite is only known in ultrabasic magma, its optical determination has been doubted by some authors. Microprobe analyses firmly proved the presence of enstatite in the tephra so that it can be used as guide mineral for the relevant volcanic material.

1. Paléontologie, Université de Liège, 7, place du Vineyt-Août, B-4000 LIÈGE, Belgium.
2. Paléobotanique, Université des Sciences et Techniques de Lille, URA 1365, F-59656 VILLENEUVE D’ASCO, France.

DEUX SONDAGES A MALMÉDY

Georges VANDENVEN

avec la collaboration de Messieurs
B. LEONARD (Lg) et A. SMOLDEREN (L)
et de MM.
Ph. ANCIA (Lg), F. DIMANCHE (Lg), J. THOREZ (Lg)
et M. VANGUESTAINE (Lg)

SITUATION DES SONDAGES

MALMÉDY I
INTERMILLS, route de Robertville; X = 267.851,
Y = 126.078, Z = +338,443 m, archivé 169E/379;
profondeur atteinte: 200 m.

MALMÉDY II
EMBRANCHEMENT AUTOROUTIER DE WAVREUMONT, X = 265.210, Y = 123.672,
Z = +395,256 m, archivé 160W/928; profondeur
atteinte: 200 m.

NIVEAUX LITHOLOGIQUES
TRAVÈRES PAR «MALMÉDY I»

De 0,00 à 4,00 m :
Alluvions de la Warche.

De 4,00 à 38,36 m :
Formation moyenne des Poudingue de
Malmédy (F. à galets de calcaire). Les éléments
calcaires ont été attribués au Couvinien, au

1. S.G.B.: Service Géologique de Belgique (Bruxelles); (Lg):
Université de Liège; (L): Katholieke Universiteit Leuven.