

**METALLURGIC SLAGS OF THE LAST CENTURIES AS A TRACER IN ARCHAEOLOGICAL
AND PALAEOGEOGRAPHICAL STUDIES IN ARDEN (BELGIUM)**

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In Arden (Belgium), at the end of XIV century, iron metallurgy moved near rivers to take advantage of hydraulic energy. With this energy, a new technique of production started (Walloon method) and the production of iron increased. In the same time, large quantities of slags produced in primitive furnaces were piled onto the floodplain, often very close to rivers. Actually, these big concentrations of slags are often the only trace in the morphology to localise metallurgic sites, because other traces have disappeared or are under sediments.

Another method to localise these sites is to study the longitudinal evolution of slag size in rivers. For example, in this way, we have localised more than ten old furnaces, which have functioned between the XIV and the XVII century (Houbrechts & Petit, 2003).

Moreover, studies of slags size in river allows us to determine effective stream competence of rivers (because slags are subject, since several centuries, to the same hydrological and trapping conditions as natural elements of the rivers) and to evaluate the speed of bedload progression (if we have datings of the metallurgic activity).

Finally, slags present in fine sediments of floodplains can also be used as a stratigraphical tracer to estimate rates of deposition, lateral migrations, variations of bed level, and changes in sedimentation pattern. In Arden, it seems that these changes in sedimentation could result mainly from deforestation, in relation with the metallurgic and agricultural activity and secondarily from probable climate fluctuations during the Little Ice Age.