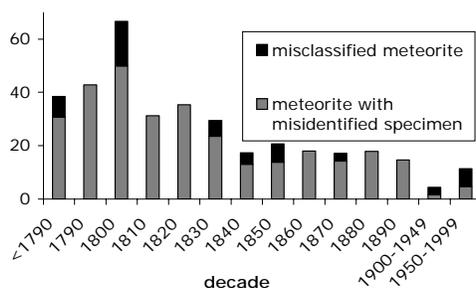


SCANNING METEORITE COLLECTIONS FOR MISCLASSIFIED/MISIDENTIFIED SAMPLES: EXAMPLES FROM SAINT PETERSBURG AND MOSCOW. P. Rochette¹, J. Gattacceca¹, N.S. Bezaeva², E.V. Obolonskaya³, J.A. Polyarnaya³, A.Ya. Skripnik⁴ and M.A. Nazarov⁴. ¹CEREGE CNRS Aix-Marseille University, France ; e-mail: rochette@cerege.fr. ²M.V. Lomonosov Moscow State University ³State Mining Institute Saint Petersburg, Russia ⁴Vernadsky Institute, Academy of Science Moscow, Russia.

Magnetic susceptibility measurements provide a rapid and non-destructive way to characterize the amount of metal (or magnetite) in a meteorite. Among ordinary chondrite (OC) falls it is a powerful way to discriminate between LL, L and H groups. We assembled a database using systematic measurements in nearly 40 major collections from Europe and America, containing data on 92% of all OC that fell before 1900, and 70% after. This database allowed us to detect 23 potentially misclassified OC falls (Asco, Karakol, Mauritius, Ploschkovitz, Yonozu for pre 1850 falls), and a number of specimens of supposedly the same meteorite that are not from the same group [1-3]. These are very likely misidentified specimens. The proportions of meteorites exhibiting misidentified specimens in our database is clearly time dependent (figure). A peak in the early 19th century likely reflects the intense activity of exchanges among state and private collections that occurred at that time, with not well established curatorial practices and limited expertise in meteoritics. As an example, misidentified l'Aigle samples were found in five different collections.

The Saint-Petersburg Mining institute (SPMI) collection is an interesting test of this hypothesis as it was essentially assembled during the 19th century. It was one of the largest state collections in Russia at that time, competing with the Russian Academy of Science (RAS) collection and the other major European collections. Now the RAS collection, which is largest in Russia, is in the Vernadsky Institute, Moscow. However there was an intensive exchange between the RAS and SPMI collections. We measured nearly all stony meteorite samples >3 g in SPMI, i.e. 182 specimens, among which 130 from 88 OC falls (all pre 1900). Seven samples from 5 meteorites appeared misidentified, while the others give data consistent with those obtained on the same meteorite in other collections, in particular from Moscow. This ratio is statistically comparable to other collections: Paris (19/356), Vatican (8/226), Madrid (7/78). Anomalies found in SPMI may also be also found in Moscow as in the case of Bachmut and Pavlograd, both L6 but showing H samples in both collections.



References: [1] Gattacceca J. et al. 2007. MAPS 42:A173-A176. [2] Consolmagno G. J. et al. 2006. MAPS 41: 331-342. [3] Rochette P. et al. 2003. MAPS 38:251-268. *Study funded by CNRS-RFFI PICS program (grant N07-05-92165).*