ONE HUNDRED MINERALS FOR ONE HUNDRED YEARS (DEDICATED TO THE CENTENNIAL OF THE GEOLOGICAL INSTITUTE OF ROMANIA)

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There were investigated mainly three types of mineral occurrences: **I**. The Mn-Fe occurrences in Romania, *i.e.* (A) the Răzoare Fe-Mn deposit, Preluca Mountains; (B) the Bistriţa Mn belt, Bistriţa Mountains; (C) the Delineşti Mn-Fe deposit, Semenic Mountains; (D) the Răscoala Fe-Mn deposit, Sebeş Mountains. **II**. The Ditrău carbonatite alkaline intrusive complex (DCAIC). **III**. There were also investigated the slags of Galaţi blastfurnace.

I. A. In the Răzoare Fe-Mn deposit, besides manganoan ferrosilite and fayalite, all the members of the manganoan humite series were detected; very rare minerals, wustite and pyroxferroite, good indicators of redox conditions, were also identified. B. In the Bistriţa Mn belt a suite of new minerals for the area was discovered, such as bannisterite, benstonite, barytocalcite, kozulite, brokenhillite, caryopilite, kellyite, manganpyrosmalite, nelenite, natronambulite, parsettensite, pennantite, pyrophanite, ribbeite, schallerite, nambulite, thorianite, mcgillite, minnesotaite, winchite, xonotlite, yoshimuraite, *etc.*, thus being one of the most complex Mn deposits of the world. The mineralogical richness of the Bistriţa Mn belt as well as their complex mineral equilibria, help us to reconstruct the P, T, X, f_{CO2}, f_{O2}, f_{Cl}, f_{H2O} conditions of the ore, thus completing the data on the country rock, strongly influenced by retromorphism and thus more difficult to decipher. The established metamorphic evolution of the Mn ore, achieved through repeated and superimposed metamorphic events, explains the complex mineralogy, each metamorphic events being a source of new minerals. C. In the Răscoala Fe-Mn deposit, among others, a rare Ba-Mn mica, kinoshitalite was identified. D. In the Delineşti Mn-Fe deposit pyrophanite, senaite, neltnerite were discovered, just to mention the more rare minerals.

II. The main mineral groups (halides, sulphides, oxides, carbonates, phosphates and silicates) of the DCAIC were investigated optically as well as by SEM, EPMA and XRD; our work was focussed on REE, Nb-Ta and (REE + Nb-Ta) minerals. Among the halides gagarinite (?) and cryolite (?) were identified. In addition to bastnäsite-(Ce), bastnäsite-(La), parisite-(Ce) and parisite-(La) other REE carbonate species were determined: ancylite-(Ce), calcioancylite-(Ce), cordylite-(Ce), synchysite-(Ce), synchysite-(Y), hydroxylbastnäsite-(Ce), hydroxylbastnäsite-(Nd), burbankite. Beside ceriopyrochlore, uranpyrochlore, bariopyrochlore and plumbopyrochlore other oxides were also determined: aeschynite, betafite, calciobetafite, fergusonite, loparite-(Ce), latrappite, microlite, strüverite, tapiolite, zirkelite. New sulphides for the area were identified as well: lautite, arsenosulvanite, tungstenite, kesterite, hemusite, geerite, gallite, briartite, renierite. Besides monazite-(Ce), monazite-(La), new phosphates were also found: REE apatite, crandallite, florencite-(Ce), carbonate-fluorapatite, goyazite, rhabdophane. Rare silicates, such as aenigmatite, lamprophyllite, pectolite, wairakite, zeophyllite or rare silicates with Zr, Zr-Ti or Nb-Ti such as catapleiite, eudialyte, kupletskite, rosenbuschite, hiortdahlite, götzenite, låvenite, fersmanite, lovozerite, and murmanite were identified. REE-silicates such as cerite, nordite (?), yttrialite were also determined.

III. Many artificial minerals, such as fayalite, metallic Fe, melilite, wüstite and oldhamite were determined in the blastfurnace slags at Galaţi.

References

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