ON THE SPLIT QUARTZ CRYSTALS FROM DASHKESAN, AZERBAIJAN

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With 3D Mineral Photos on CD

Specimens and photos:
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The beauty of nature invokes the idea of its total perfection. Every small item is perfect in its world.
A more attentive glance, however, would make you think otherways. It is just an imperfection that makes its own important contribution to the beauty of a mineral. Imperfection, as a whole, is a fundamental property of the Mineral Kingdom, and you would easily find a confirmation of this in every specimen from your own collection, as well as in every exhibit of a mineralogical museum. In nature, there are practically no flawless crystals. Moreover, imperfection in a general sense is a source of the wonderful diversity of the Mineral Kingdom: an ideal is unique and single, but deviations are endless.

Nature does not conceal its flaws: it demonstrates them clearly. It does this so elegantly that the idea of a "flaw" itself becomes questionable. What is the ideal and what is the flaw? No more than provisional symbols, which we invent ourselves to sort out the constructions of nature by our standard methods. Remember some collectors of the elder generation who used to refer blandly to their favorite scepters, gwindels, twins, etc. just as "my freaks", "my monsters".
Good examples of this kind are also spherulites and roses, as well as other split crystals that occupy the borderland between mineral individuals and mineral aggregates (Godovikov, Stepanov, 2003; Kantor, 1991). It often happens, unfortunately, that these "borderland" natural formations are mistakenly referred to mineral aggregates, the origin of the latter being caused not by the evolution of a sole crystal but by "*the number of crystal nuclei that have appeared initially or in the course of time*" (Lieber, 2006).
Especially in split crystals, which are oversaturated with defects, the flaws of crystal structures are obviously an aesthetic factor. For an inquisitive collector they offer, in addition, some intriguing puzzles.
Split quartz crystals, "Sheaves" (Photos 1 and 2) and "bundles" (Photo 3) are some favorites of collectors. As to the physics and mechanisms of splitting, there is no principal difference between both forms (Grigoryev, Zhabin, 1975; Krasnova, Petrov, 1997; Kantor, 2003). Nevertheless, within the limits of the same area, sheaf-like quartz crystals usually occur much less frequently than bundle-like ones. This can be easily explained by the fact that the choice between a "bundle" and a "sheaf" is only determined by the initial position of a crystal nucleus upon the matrix. In the case where the nucleus "lies" on the matrix, i.e. its c axis is parallel, or almost parallel, to it (Fig. 1, a), crystal idiomorphic growth, as well as isolation of subindividuals are possible and proceed simultaneously at its both terminations – and a sheaf-like crystal grows up. The crystals of stilbite (Photo 4) are classical examples of such a shape, which was marked with its former name "desmin" – sheaf. In the case