

1. Layers of magnetic and non-magnetic metal were found in the piece. Both layers proved to be steels.
2. The magnetic metal had a composition similar to specification AISI 50B20, a 0.2% carbon steel with a small amount of chromium and containing boron.
3. The non-magnetic metal was an austenitic manganese steel containing less than one per cent of chromium. Similar steels are produced in the Province of Quebec.
4. The microstructures of both steels were typical of those found in cast metals. There was no evidence that the metal had undergone severe deformation.
5. Both steels contained numerous inclusions and holes.

From the above results it can be concluded that the metal is not meteoritic.

The two steel types found in the piece are in common use, the low-carbon steel as a structural or automotive steel, and the manganese steel in the form of castings for machine parts subject to heavy abrasion such as linings for rock crushers, ball mills or excavator buckets. The steels are not high-strength aircraft materials nor are they suitable for service at high temperatures. Because of their properties their use in aircraft or space vehicles is most unlikely because other materials are available that will better meet the conditions that can be envisaged in such structures.

From the shape of the piece, the layered structure and the composition of the steels, the most probable conclusion is that it is a foundry residue, produced by pouring excess ladle metal into a sand mould or, less likely, a furnace "skull". Its most likely source was a foundry in the Province of Quebec.

Though it is not possible to locate, for certain, the source of the material, there is nothing unusual about its composition or structure that would suggest that it is in any way extra-terrestrial and, unless some new startling independent evidence is uncovered, I feel there is little point in carrying out further investigations on the material in this laboratory.

Comments

The following comments are not a result of the examination of the material itself but result from discussions that have taken place on the subject. I feel they are pertinent in that they may help to explain some of the observations made on the piece.