containing 47 per cent, 33 to 34 per cent. The difference is due to the
presence of the small quantity of sulphur previously mentioned.

The spelter works deliver about 65 hundredweight of metal per day to
the rolling-mill, where it is remelted in a reverberatory furnace and run
out into shallow moulds of various sizes according to the gauge of sheet
metal on which the mill is running. After passing through the rolls till
reduced to the proper thickness, and having been previously annealed and
trimmed, the sheets are packed in casks containing 1200 lbs. each. (Drinker,
1871.)

**Distribution of the ore**

Zinc ore has been found in paying quantities only in an extremely
restricted area in the immediate vicinity of Friedensville and about
half a mile northwest from that place. Considerable prospecting has
been done over a much larger area throughout the Sauer Valley and
elsewhere in the Allentown region, but without success. Reports of
zinc from other places have been circulated at many times, but have
never been confirmed. Traces of zinc have been found in some lime-
stone drill cores about one mile west of Friedensville, in the limonite
iron ores about 1½ miles west of that place, and in the Hellertown
cave.

**Character and composition of the ore**

The zinc ores first worked in the Friedensville region consisted
almost entirely of calamine, together with some smithsonite mixed
with the residual clay formed by the decomposition of the Beekman-
town limestone. With increasing depth of mining the calamine and
smithsonite decreased rapidly and zincblende (sphalerite) intimately
associated with pyrite and marcasite became more common.

The calamine was found in irregular segregations in the clay, in
fissures in the limestone, or in the porous, partially silicified limestone,
often in botryoidal or stalactitic forms. Sheets or plates from 2 to 3
feet square and from one-eighth to a quarter of an inch thick are
said to have been found in crevices in the limestone. These masses of
calamine were coated with small crystals of the same mineral. The
crystals of calamine are small but clear and lustrous, and range from
colorless to yellowish and greenish-blue.

The smithsonite was usually inconspicuous and occurred as white
scales or granular masses coating the calamine or blende, or on the
walls of the limestone fissures, or as yellowish-brown porous masses.
The larger part of the smithsonite mined was amorphous and occurred
in botryoidal, stalactitic, or laminated masses. Occasional plates of
small clear crystals with vitreous to pearly luster were found. White,
gray, or colorless crystals are most common, but greenish-white to
greenish-yellow crystals are found. The yellow crystals probably
contain greenockite. Druses of smithsonite coating crystals of
aragonite and quartz have been found, showing the later deposition
of the smithsonite.

The smithsonite and calamine were formed by oxidation of the
sphalerite, but the depths at which the sulphide was encountered in
the different mines were not uniform. In the Ueberroth mine, for
example, calamine was found to the depth of 200 feet from the sur-
face; a mass weighing 8,200 pounds from that depth was exhibited at
the Centennial Exposition. During the prospecting by diamond drill,