Vertical vents produced by escaping gases and vapors occur in various places. Secondary montmorillonitization (yellow colors) can be observed at the contact to the Bunte Breccia and withing an area of the northwestern wall of the quarry. Fresh samples of suevite, glass bombs and crystalline rock inclusions in all stages of shock metamorphism can be best collected in this outcrop.

7. Polsingen. Small old quarry in "red suevite", S of the village of Polsingen near the crater rim, 5 km north of Wemding. The socalled "red suevite" of Polsingen is unique in composition and texture. It consists of a reddish, vesiculated matrix of devitrified glass which includes a large number of mineral fragments and fragmental crystalline rocks, up to about 30 cm in size. These show various stages of shock metamorphism but all are strongly recrystallized in contrast to the inclusions in the normal suevite. Coesite is still present in some of the inclusions. Fragments of sedimentary inclusions have not been observed. The whole mass is similar to a pseudovolcanic impact melt as known from deeply eroded Canadian and Scandinavian impact sites. Except at Amerbach, 3 km S of Polsingen, no other occurrence of this kind of rock is known.

8. Hainsfahrt, Aumühle qarry. Old suevite quarry, 2.5 km NNE of Öttingen, 1.5 km NE of the rim. Suevite overlies Bunte Breccia, which shows a hummocky relief. The chilled zone at the base of the suevite, containing non-devitrified glass bombs is about 1 m thick. In the north-eastern part of the quarry the suevite has a more yellow color and contains fewer and smaller rock fragments and glass bombs.

9. Maihingen, Klostermühle—Langenmühle. Outcrops of crystalline shattered masses and of a polymict crystalline breccia, near the northwestern rim, about 10 km north of Nördlingen. The main volume of this crystalline area consists of a huge block of gneiss with biotite, hornblende, and garnet which is not brecciated but highly fractured showing no typical shock effects. It must have been uplifted as a whole at least 500 m from the pre-Ries crystalline basement. A dike of polymict crystalline breccia up to 1 m thick cuts through the gneiss mass subvertically. Fragments consist of biotite gneiss (58%), granite (18%), amphibolite (18%) and hornblende-gneiss (6%) with variable degree of shock (stage 0: 27%, stage I: 10%, stage II: 61%, stage III: 2% (?)) (ABADIAN, 1972). These rocks are strongly affected by montmorillonitization and hence are friable in contrast to the country rock.

10. Lehberg. New quarry in a large block of crystalline rocks near the western rim, 2 km SW Marktoffingen. The whole unit consists of biotite gneiss and garnet-cordierite-gneiss with some amphibolite which are in contact with a biotite granite. All rocks are weakly shocked (stage 0 and, rarely, stage I), but heavily shattered. Most conspicuous is a set of parallel thrust planes which are oriented about 108°/20—30 °N. Some polymict Bunte Breccia occurs on top of the crystalline unit, and as thin intrusive-like dikes cutting through it in a similar way as it is observed in the lower part of the drilling core of Nördlingen.

11. Zipplingen. In a road cut north of Zipplingen suevite breccia is exposed which forms an exceptionally hard rock. Fragments of crystalline rocks are very abundant. Gneisses of dioritic and quartzdioritic composition and amphibolites prevail over granitic rocks. Most of the glass bombs are fresh, especially in the upper portion of the outcrop which represent a chilled zone of the suevite layer. Some 55% of the inclusions in the 4—32 mm size class are glasses. The lower contact of suevite and Bunte Breccia is no longer exposed. The suevite displayed a lower chilled zone at this contact.

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