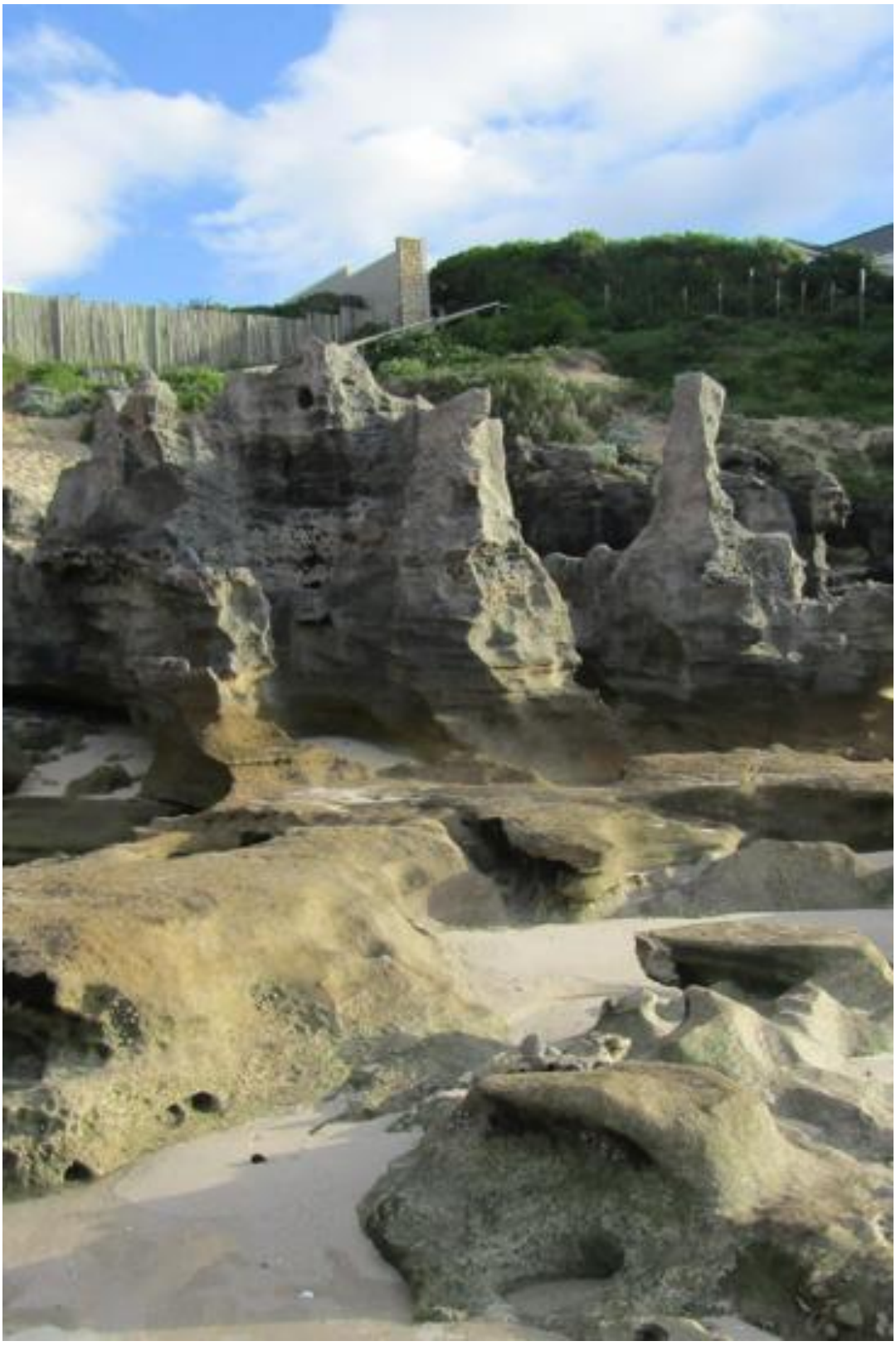
U. SHORES

Field Note U8c3. Arniston shores – Geomorphologoical features – Dissolution features



Dissolution pillars.

U. SHORES

Field Note U8c3. Arniston shores – Geomorphologoical features – Dissolution features

Dissolution of the rocks takes place in the intertidal zone, the wave spray zone above it and in the calcrete crust (where the dissolution is unrelated to sea water or wave action).

The main dissolution features of the limestone Waenhuiskrans Formation along the Arniston shores are pools, cusps, mushrooms, teeth, pillars, stalactites and pipes. Needles are formed on the sandstone Rietvlei Formation in Struis Point.

In the intertidal zone cusps and pools can form side by side (Figure 1).

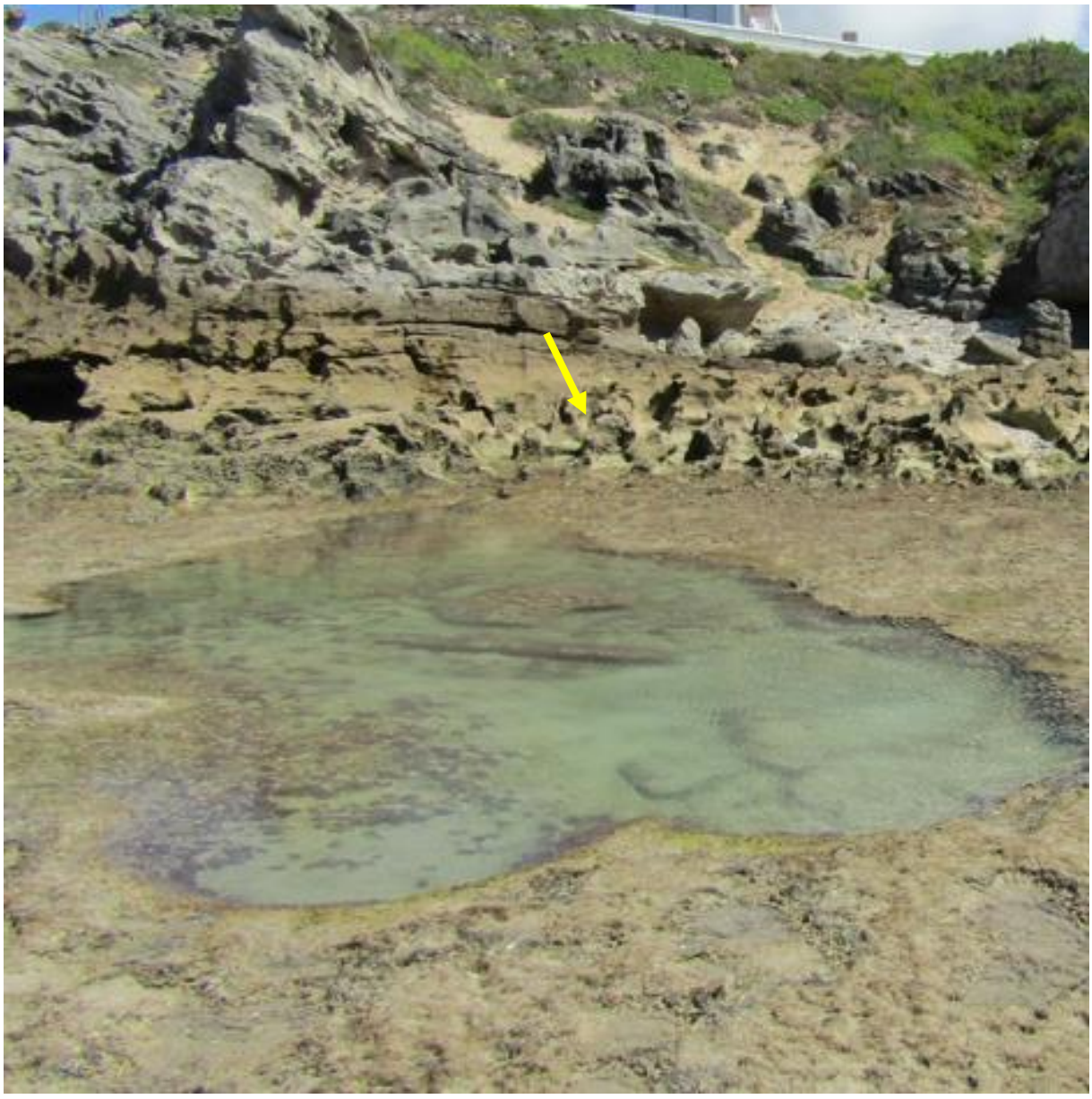


Figure 1. View on an abrasion table at the foot of a sea cliff. Pools are formed on that part of the table which is washed by the tide. The cusps at the back (arrow) form along that part of the table, which is less frequently under water.

Pools

There are several dissolution pools, varying in size and shape on the abrasion tables (Figure 2).

Figure 2. Top and bottom – dissolution pools on abrasion table. These pools are further eroded and enlarged mechanically by the waves, which swirl the pebbles, which area trapped in them.

Cusps

Sharp dissolution cusps form above the high tide level (Figure 3).

Figure 3. Top and bottom - sharp cusps form above high-tide level.

Other cusps have been weathered and rounded (Figure 4).

Figure 4. Top and bottom – weathered, rounded cusps. The boxed area in the top photo is enlarged at the bottom photo. Note the miniature dissolution features forming pitted surfaces.

Mushrooms

Mushroom is a rock of a certain strata of the Bredasdorp Group in the intertidal zone, the base of which is eroded more than its top (Figure 5).

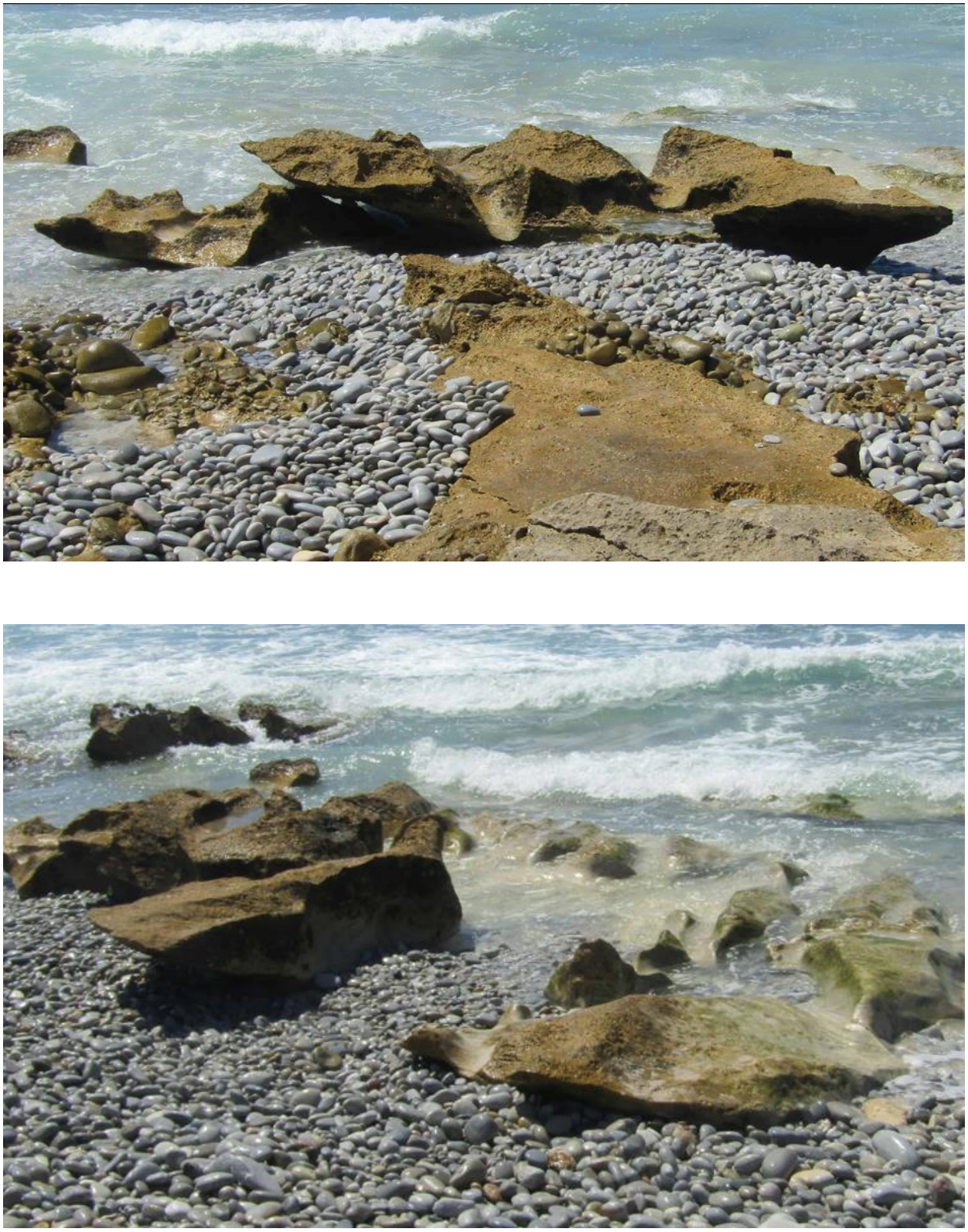


Figure 5. Top and bottom – mushrooms along Arniston shore.

Teeth

Sharp dissolution teeth form along the zone, which receives the sprays of the breaking waves (Figure 6).

Figure 6. Top and bottom – sharp dissolution teeth form along that zone of the cliffs, which receives sea spray.

Pillars

Spectacular, >3 m high dissolution pillars were formed on the East Shore (Figures 7 to 10).

Figure 7. Top and bottom: dissolution pillars along the East Shore.
Person for scale – a passer-by.

Figure 8. Top and bottom – a dissolution pillars along the East Shore.

Figure 9. The bases of dissolution pillars on Arniston shore.

Figure 10. isolated, cumbered dissolution pillar on Arniston shore.

Stalactites

Karst stalactites under the calcrete layer can be seen along the cliffs (Figure 11).

Figure 11. Top and bottom – calcrete 'stalactites' at the bottom of the calcrete layer along the Arniston cliffs.

Pipes

Dissolution features occur on top of the calcrete layer (Figure 12).

Figure 12. Top and bottom – dissolution features (the tops of karst pipes) on the calcrete layer (see Field Note on karst pipes).

Needles

Rounded needles form on the Rietvlei Formation rocks near Struis Point (Figure 13).

Figure 13. Top and bottom – needles on the Rietvlei Formation (sandstone) rocks.

