

9/21269/0017

DE BEERS  
A DIAMOND IS FOREVER



08 August 2007

Department of South African Heritage Resources Agency  
**POLOKWANE**  
0700

Attention: Mr. Donald Khathutshelo

Dear Sir

**APPLICATION IN TERMS OF REGULATION 22(B(i) OF GOVERNMENT NOTICE NO. R 385 IN TERMS OF CHAPTER 5 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) FOR THE RAISING OF THE SCHRODA DAM WALL BY 2M WITH A CAPACITY OF ONE MILLION CUBIC METERS AND INCREASING THE SURFACE AREA BY 5.0 HECTARES WITHIN MUSINA LOCAL MUNICIPALITY: VHEMBE DISTRICT OF LIMPOPO – YOUR REFERENCE - 16/1/N-V83.**

Your letter received on the 05<sup>th</sup> April 2007, discussions and presentations made between Venetia Mine representatives and your office at Schroda Dam Mapungubwe Park concerning the raising of the Off Channel Storage (OCS) Dam (Schroda Dam) to support continued mining operations at Venetia Mine refers.

Please find attached the completed necessary documentation as required - the Basic Assessment Report together with the relevant appendices and supporting documentation.

Please contact the undersigned or Setenane Nkopane at 015 – 575 2710 if further information is required in this regard.

Yours faithfully

A handwritten signature in black ink, appearing to be "H Van Dyk".

**H VAN DYK**  
**OPERATIONS MANAGER**

VENETIA MINE

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DC Noko (Managing Director), SM Brown, Ms C A Carolus,  
SEO Dietrich, Mrs DA Farnaby, JME Oppenheimer, GPH Penny, B Peterson. Secretary: MJ Ward

A HERITAGE IMPACT ASSESSMENT  
OF THE AREA AFFECTED BY THE  
RAISING OF THE SCHRODA DAM WALL  
VHEMBE DISTRICT, LIMPOPO PROVINCE

Report Prepared

for

DE BEERS CONSOLIDATED  
(The Venetia Diamond Mine)

by

E.O.M. HANISCH

Department of Anthropology

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May 2005

Report 2005/6

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## **1. EXECUTIVE SUMMARY**

A heritage impact assessment was carried out along the shoreline of the Schroda dam in the Mapungubwe National Park, Limpopo Province. The original archaeological impact assessment was done by myself, and a report handed in during 1998. At that time no archaeological sites of any significance were found. However, the late Professor James Kitching found fossil remains in the valley where the dam is presently, most of which he considered not to be of great value. A skeleton of a *Massospondylis* was removed and taken to the University of the Witwatersrand.

During the current survey, again nothing of archaeological significance was found. However the planned raising of the dam wall will bring the full supply level very close to areas where fossils are eroding out.

No further investigation or action is required on the archaeological side, but attention should be given to the removal of the fossils that are eroding out, as these will be damaged by large game like elephants and rhino that will walk across those fossils that are eroding out of the soft sandstone and mudstone beds.

## **2. AIMS OF THE SURVEY**

For the long term safety of the water supply to the Venetia Diamond Mine, the off-channel storage dam at Schroda was built. This was before the farm Schroda was incorporated into the Mapungubwe National Park. However, with increasing needs of the mine for water, it has been recommended that the existing wall of the Schroda dam be raised. The survey was undertaken to confirm whether any heritage sites that might not have been involved during the first survey, could possibly now be affected.

## **3. TERMS OF REFERENCE**

The terms of reference were to identify any archaeological, palaeontological, or other cultural resources that might be found along the shoreline of the dam, and to attach a level of significance to them.

## **4. DEFINITIONS**

### **4.1 Cultural Resources**

These are all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.

### **4.2 Significance**

The significance of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of

preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

#### 4.3 Significance of impact

- **Low** Where the impact will not have an influence on or require to be significantly accommodated in the project design
- **Medium** Where the impact could have an influence which will require modification of the project design or alternative mitigation
- **High** Where it would have a “no-go” implication on the project regardless of any mitigation

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- a) no further investigation/action necessary
- b) controlled sampling and/or mapping of the site necessary
- c) preserve site if possible, otherwise extensive salvage excavations and mapping necessary
- d) preserve site at all costs

### 5. SENSITIVITY OF ARCHAEOLOGICAL SITES

Archaeological sites are open to abuse by the public and can be badly damaged when persons illegally remove artefacts for private collections or to sell on the black market, or smuggle overseas. The latter is a major problem in respect of Africa’s cultural heritage, to which South Africa is no exception.

Therefore, the latitude and longitude of archaeological sites are to be treated as **sensitive information** by the developers and any persons subcontracted by them and as such must not be disclosed to members of the public.

### 6. LEGAL REQUIREMENTS

Aspects concerning the conservation of cultural resources are mainly dealt within two acts. These are the *South Africa Heritage Resources Act* (Act 25 of 1999) and the *Environmental Conservation Act* (Act 73 of 1989).

#### 6.1 South African Heritage Resources Act

*Archaeology, palaeontology and meteorites:*

In terms of Section 35(4) of this act, no person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or material or any meteorite; bring onto, or use at an

archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

*Structures:*

Section 34(1) of this act states that no person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

“*Structure*” means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith;

“*Alter*” means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or other decoration or any other means.

*Human remains:*

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b) destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to the provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations.

Exhumation of graves must conform to the standards set out in the Ordinance on Excavations (Ordinance no. 12 of 1980) (replacing the old Transvaal Ordinance no. 7 of 1925). Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the Human Tissues Act (Act 65 of 1983 as amended).

## 6.2 Environmental Conservation Act

This act states that a survey and an evaluation of cultural resources should be undertaken in areas where development which will change the face of the environment will be done. The impact of the development on the cultural resources should also be determined and proposals to mitigate this impact are to be formulated and presented.

## 7. METHODOLOGY

The shoreline along the dam was walked, but it was not possible to cover the areas where cliffs extended right to the waters edge.

Areas were walked, and erosion gullies examined, as were areas that showed clear vegetational disturbance.

The 1:50000 topocadastral map used was 2229 AB Mapungubwe

## 8. WARNING AND DISCLAIMER

During any survey, only surface finds are documented. The visibility of these finds is dependant on various factors such as the thickness of the vegetation at the time of the survey, the dumping of soil or other materials on the site to be surveyed, or any other action that impedes the ability of the archaeologist to find signs of previous human activity.

### 8.1 Warning

It is always possible that cultural material and/or human remains can be found during the activities associated with the raising of the wall, such items having been buried in the ground. **Should this occur, then the onus is on the mine to halt proceedings in that area, and call in an archaeologist to advise on what the correct course of action is to be.**

### 8.2 Disclaimer

**Responsibility for any heritage finds made or damaged in areas that were not surveyed lies entirely with the mine or its contractors.**

## 9. RESULTS OF THE SURVEY

### 9.1 Archaeological sites.

A single small Iron Age site was found high in the hills about twenty metres above the present water level. This will not be affected by the raising of the wall, and therefore will be left out. No other site, be it Stone Age, Iron Age or rock art, will be in any form of danger.

## 9.2 Palaeontological sites.

The sandstone and mudstone beds are known to contain fossils in the broader area of the Limpopo Valley. These fossils are not generally considered to be of any major significance, as they are generally poorly preserved. However, in the rock outcrops on the eastern side of the dam, numerous bits and pieces of fossil are eroding out of the rock. While they are generally going to be above the full supply level of the dam when the wall is raised, the danger comes from the animals that have subsequently been introduced into the National Park, and come down to the waterside to drink.

At the time of the survey, three elephants came down to the water, and it was obvious how their weight damages the soft sandstone rock. It is very likely that, given the present numbers of elephants in that section of the park, considerable damage may be done in the future.

Even though from the point of view of the professional palaeontologists that these fossils are not as valuable or significant as those in the eastern Free State or the Karroo, they are still unique in the Mapungubwe area. Consequently attention should be paid to them.

### **Recommendation**

These fossils should be professionally removed by a palaeontologist, and be placed in the Mapungubwe interpretive centre for storage and where possible, exhibited in the new displays that are being planned.

Other than the fossils, there is no other area that needs further investigation or action.

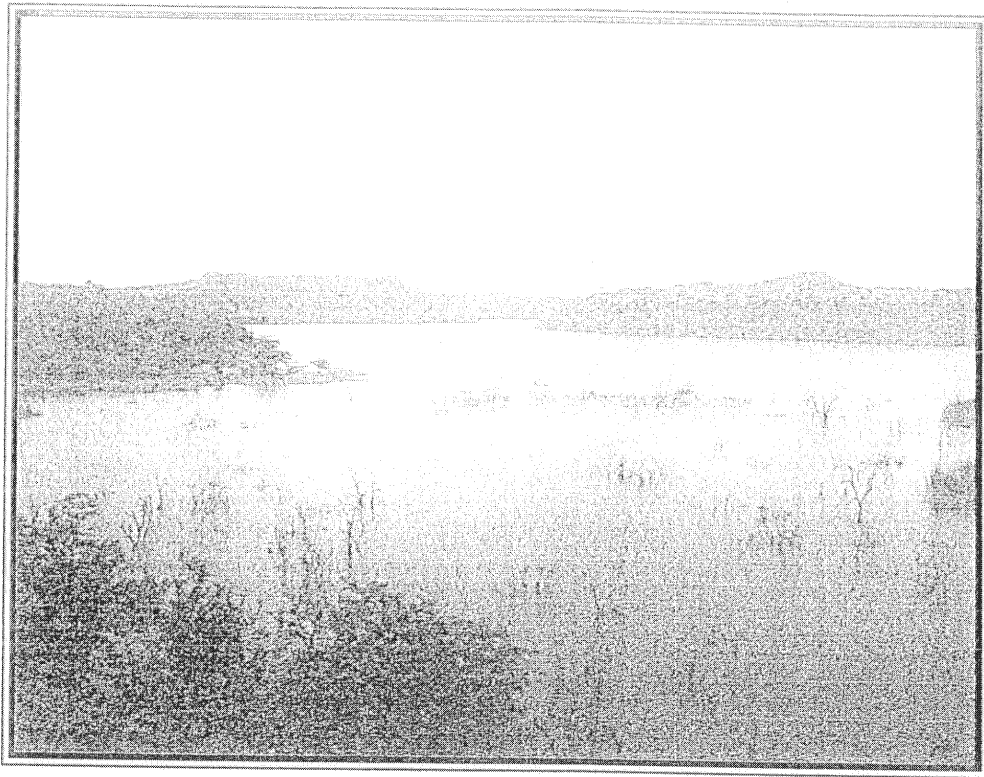




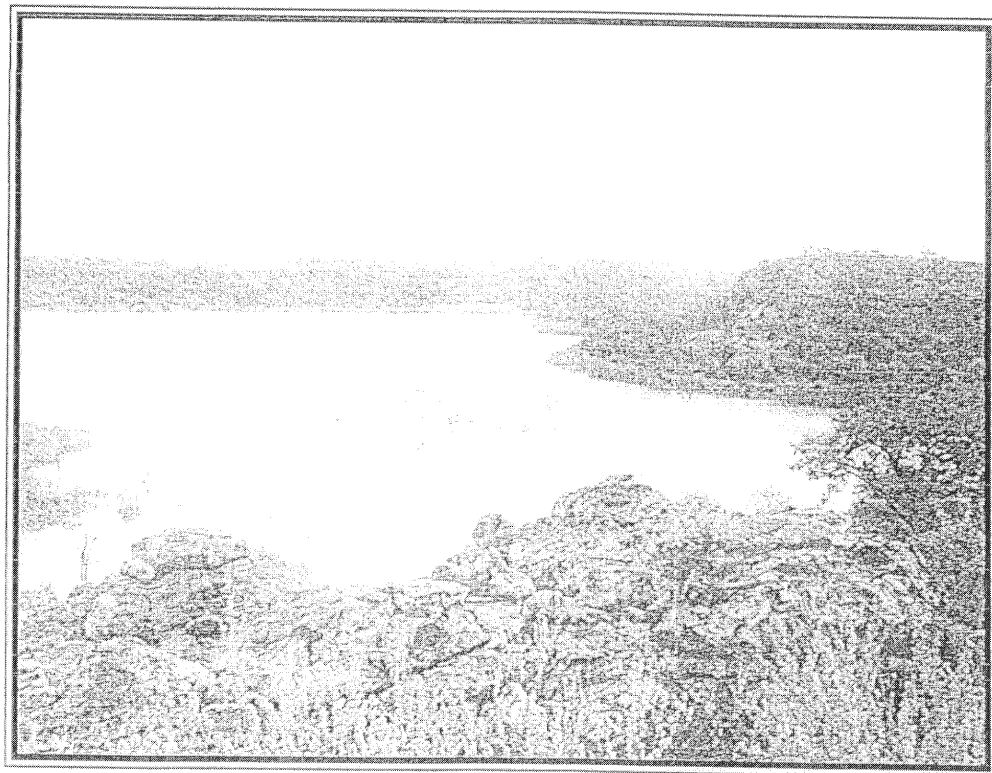
**Figure 1** A view of the Schroda dam looking northwards towards the dam wall. On the horizon on the left hand side of the photo, is the elongated hill, behind which the Schroda Early Iron Age site lies.



**Figure 2** This photo has been taken from the same position as figure 1 above, but is now looking south eastwards.



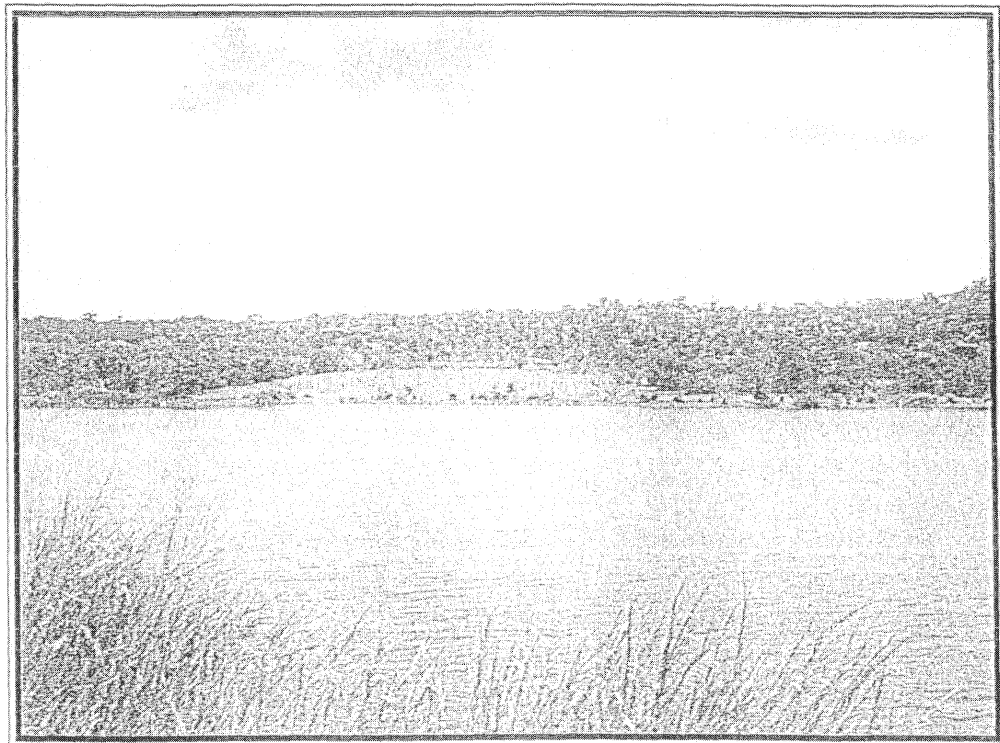
**Figure 3** This photo has been taken from the hills shown in figure 2 and looks towards the dam wall in a north westerly direction



**Figure 4** View looking north eastwards. The area where the fossil deposits are, lies behind the hill on the middle right of the photo.



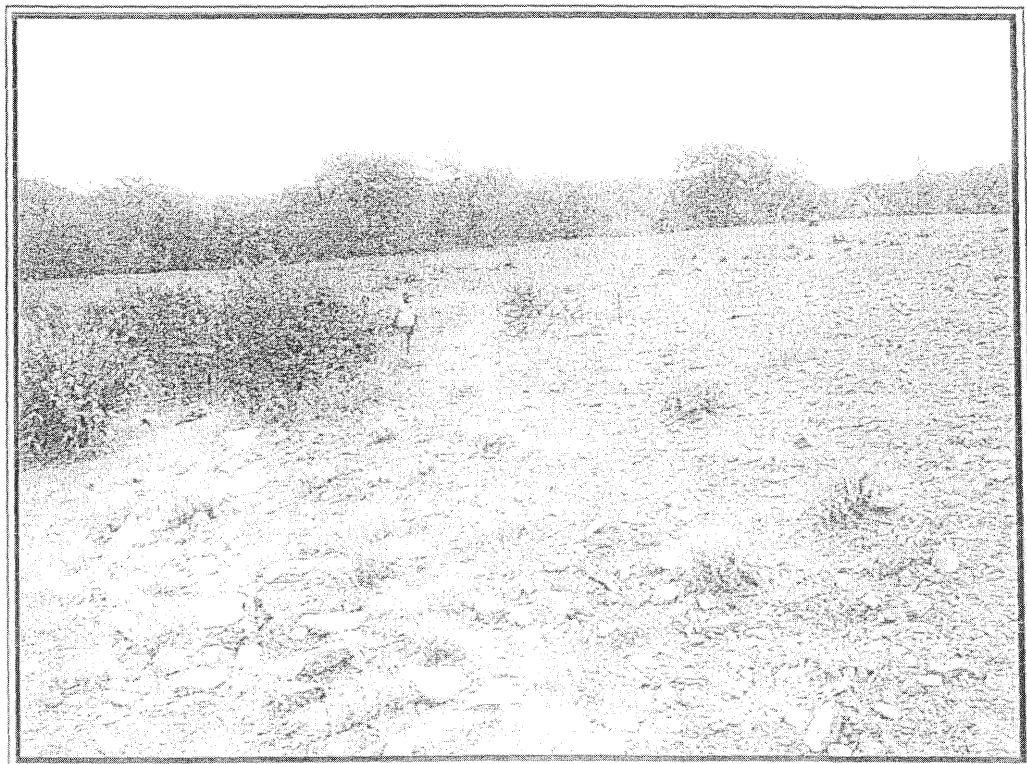
**Figure 5** Here the northern side of the dam can be seen. The photo was taken in a westerly direction.



**Figure 6** A photo taken from the northern side of the dam, looking south eastwards. The clearing seen in the centre of the picture is the beginning of the area where the fossils are eroding.



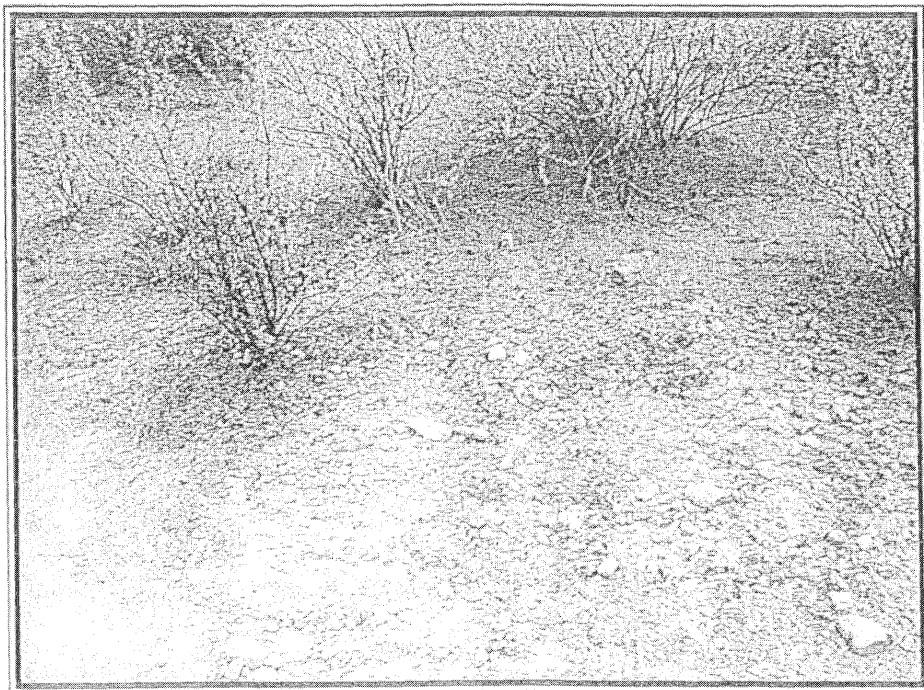
**Figure 7** One of the sandstone outcrops where the fossils occur. A game track is clearly visible on the centre right of the photo.



**Figure 8** An area where fossils occur that was damaged by earthworks during the building of the dam.



**Figure 9** When looking back to the present water level, the edge of the water appears to be far away. However, at this point the slope to the water is very shallow, and when the new full supply line is reached, then the water's edge will be very close to where the photographer is standing.



**Figure 10** An area where a lot of fossil bone is eroding out. More appears to be visible that at the time of the original survey.

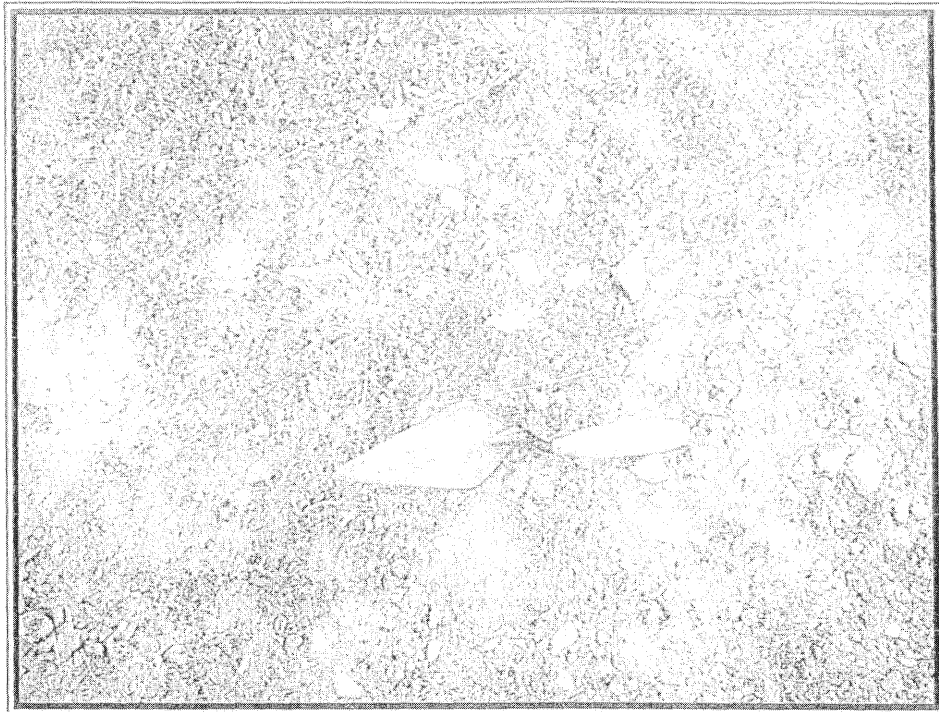


Figure 11 A closer look at some of the fragments that are breaking up.

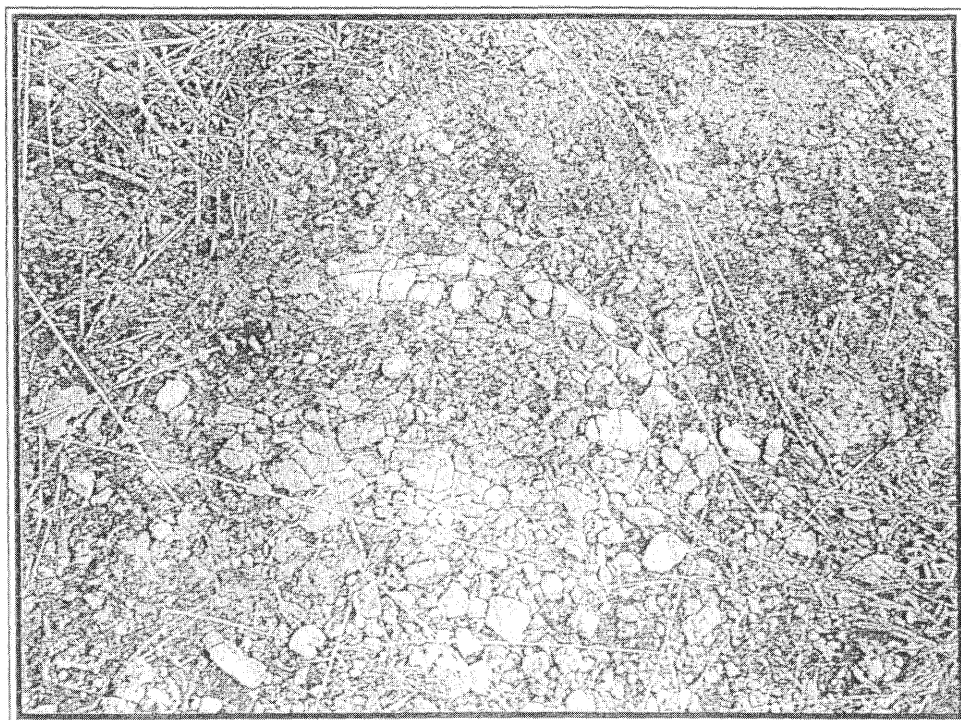
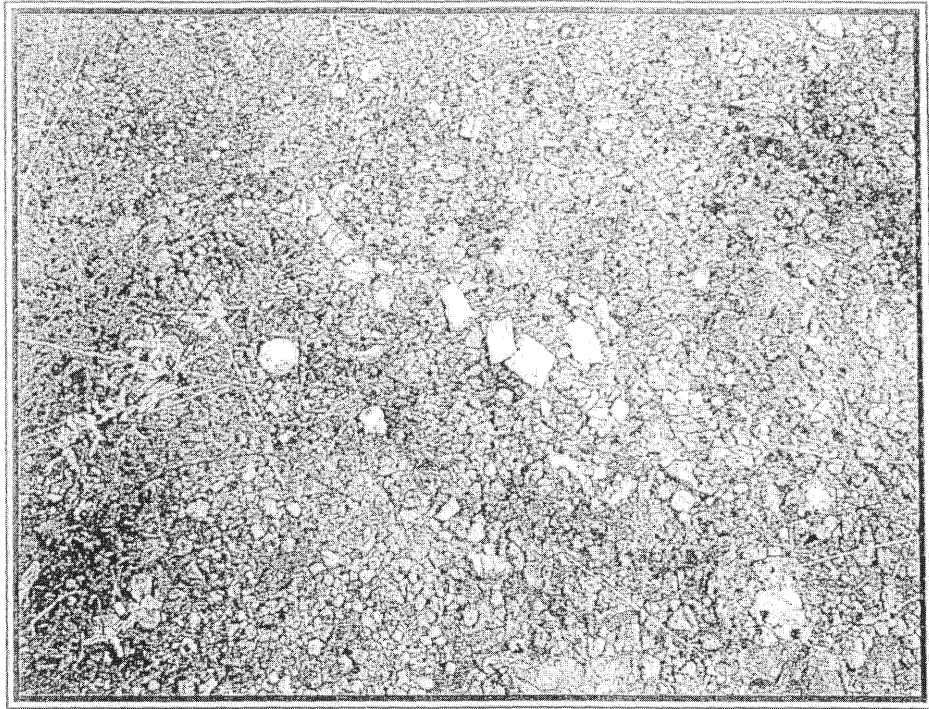
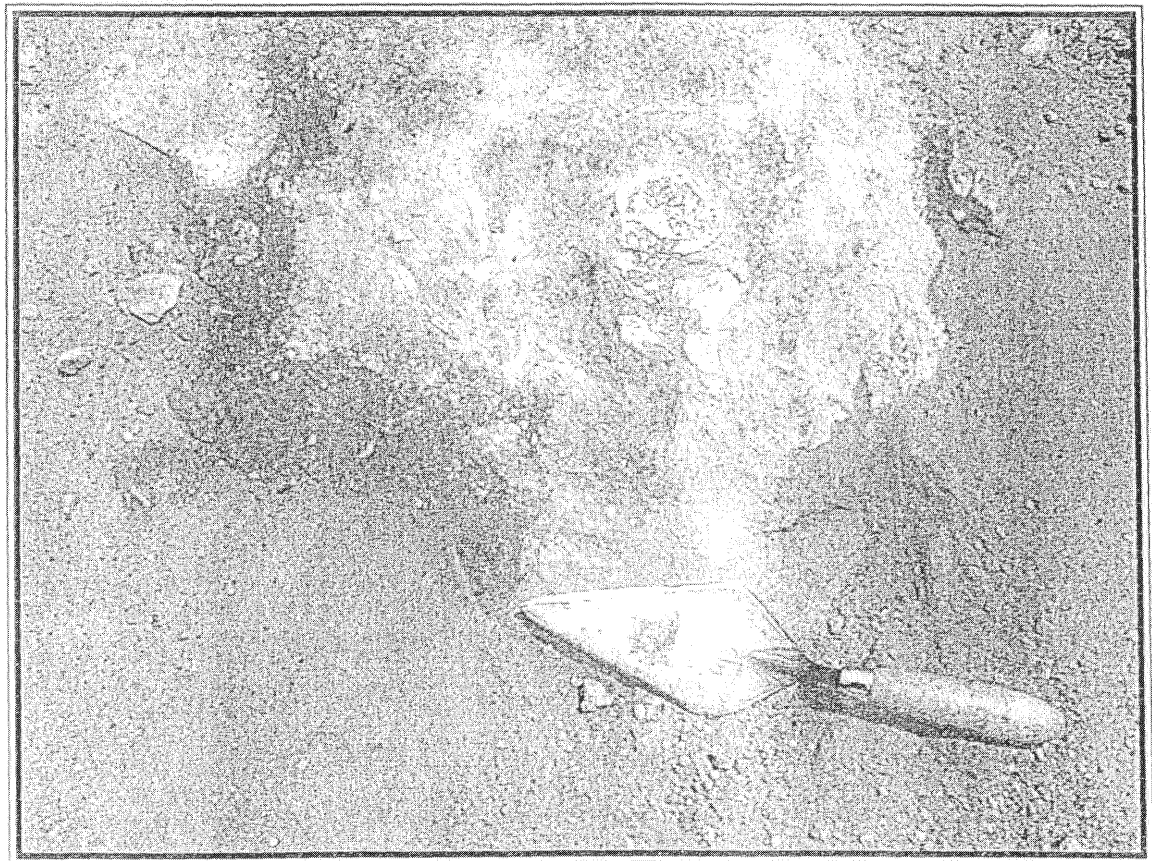


Figure 12 A piece of fossil rib can be seen in the centre of the photo.



**Figure 13** Fragments of at least two legs bone are extruding from the sandstone.



**Figure 14** Parts of a *Massospondylis* skeleton are still visible in the rock. There is still at least one other similar skeleton eroding out from the rock least