



# ARUBA: Geology and the Forensic Spotlight

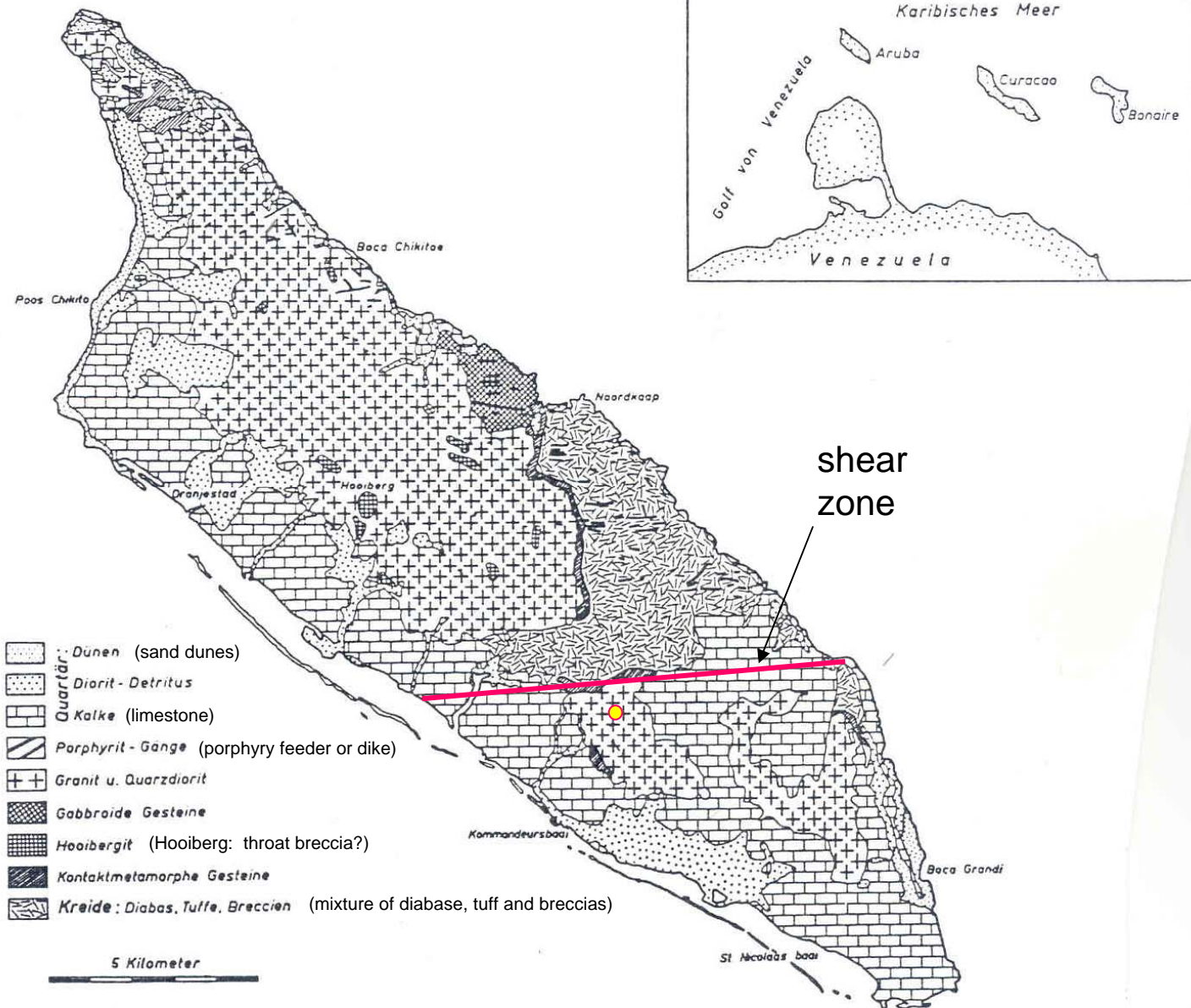
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From Microsoft Internet Explorer





Geology of the Island of Aruba (after Westermann, 1932).

## Bedrock Geology

Aruba is part of a Late Cretaceous island arc that rests on ocean crust. In a nutshell, it is a 75 mi<sup>2</sup> (194 km<sup>2</sup>) desert island consisting of uplifted reef carbonates resting on basalt that was intruded about 70 Ma by quartz diorite. In addition to carbonate material, surface rocks include what looks like ophiolite (pillow basalt and fine laminated sediment). Gold + quartz mineralization accompanied emplacement and cooling of the quartz diorite, and the island has a history of gold production dating back to the early 1800's.

Interestingly, the east end of the island is transected by a zone of shearing that may be transcurrent faulting related to adjustments in the Caribbean Plate. From an exploration standpoint, rocks with the greatest gold potential lie parallel to the shear zone -- rocks there exhibit shear foliation, and the gold and quartz apparently were mobilized from the mafic volcanics during deformation.





Topographic low along shear zone that transects east end of the island of Aruba. Caribbean in background (photo by D.E. Pride).





Bob Salna at Manasa vein system - thickness 12 feet (photo by D.E. Pride).





Ruins of Kadoeshi gold mill, four miles northeast of Oranjestad (photo by D.E. Pride).



# Hiding Places

- On Shore - in sediment at least three feet deep

*beach sand*

*dune sand*

*stream sediment*

*mill tailings from gold workings*

- On Shore - in mine openings and trenches



Manchebo Beach along hotel row, south shore of Aruba (photo by D.E. Pride).





Rooi Arikok showing alluvial material - wind winnow pile in foreground (photo by D.E. Pride).

DATE 1/22/91

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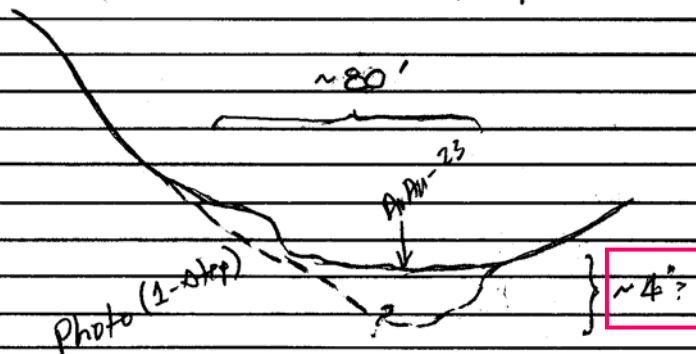
Stream Valley in Shear Zone

ArAu-23

→ Places sample in stream  
that "flows" down the shear  
zone

→ checking the places  
potential here, as town map is  
quite good, and R.S. reports  
 Nuggets in stream piles from  
both valleys here.

- sample from ~ 2' depth



med-gr sand + frags of  
green-black mafic rx, up  
to ~2" x diam. in sample;  
small # of qtz frags also  
present.





Balashi mill east of Oranjestad - tailings as much as six feet deep sampled with hand auger (photo by D.E. Pride).

Belashi Mill Tailings

Samples ArAu-11

12

13

14

description - fine sand to silt size, pink  
to cream white color; quartz +  
small number of dark grains  
(FeOx) → quartz, hematite  
(99+%) (quartz + feldspar);  
no Au obvious in hand spec  
examined

1 lrg bag

ArAu-11

- composite from 6' deep,  
4" diameter auger

1 lrg bag (~20 lbs)

ArAu-12

- Same as above; these  
two samples are from the  
area where the tailings  
are thickest, and richest.

1 lrg bag (~20' wet)

ArAu-13

- "red" tailings, similar  
to top portion of 11, 12 →  
FeOx stained qtz, feldspar,  
+ black FeOx (?) material;  
fine to med. sand size.  
- 6' + deep here; deeper  
than previous sample  
map shows for here.





Open cut for Kadoeshi vein, north Aruba (photo by D.E. Pride).





Bob Salna and caved concrete cover for Calabasa shaft, north Aruba -- cross from 1935 death to his right. Near-death experience for Salna and Pride, especially Salna, when the slab gave way as we stepped onto it, a slab that we both were walking around on two days previous. It's 40+ feet down to water (photo by D.E. Pride).





Trench #10 across Asiboca vein system - south of major shear zone at east end of island (photo by D.E. Pride).

# Hiding Places

➤ Off Shore - in deep water

*beyond fringing reef along the south side of the island*





Vegetation and habitations on fringing reef southeast of Oranjestad (photo by D.E. Pride).



"Atlantis" submersible - used to view fringing reef to a depth of 90+ feet (photo by D.E. Pride).





Submarine life along face of reef, from portal of Atlantis submersible (photo by D.E. Pride).

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CONCLUSION: at least two local residents were involved.



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- The most obvious place to hide something is the deep water beyond the fringing reef south of the island - water deepens dramatically beyond the reef, which is no more than a half mile from shore. And, it isn't far from the "party action" on the island.

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**CONCLUSION:** Miss Holloway likely was taken south of the island and placed in the water.

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**CONCLUSION:** police records should be examined for similar incidents, perhaps involving local women who are assumed to have run away from home, or that disappeared in some other manner.



Altavista chapel at sunset, north Aruba (photo by D.E. Pride).