DATA REPOSITORY ITEM 2004030

Included here are details of two important features of the Rendezvous Hill terrace at Cave Hill: the dip of the floor of subterrace RH-A and bedding and faulting in Rendezvous Hill subunit rh3.

Floor of Subterrace RH-A. The base of the Rendezvous Hill subunit rh2-3-4 wedge is known to be at or close to the terrace floor at three sites: 1) where the northern margin of subunit rh4 contacts the exhumed Wanstead unit at 64+/-1 m elevation (Fig. 4); 2) between the lowest outcrop of subunit rh2 and the highest of the Lazaretto unit at 37+/-1 m (Fig. 5); and 3) at the contact between subunit rh1 and the Lazaretto unit at 31+/- 0.5 m (Fig. 5). A plane floor dipping southwest, the direction normal to local terrace trend, between sites 1 and 2 dips 7∀whereas between sites 2 and 3, the dip is 3.5∀ The floor of subterrace RH-A between sites 1 and 3 is thus concave up, steepening landward.

Bedding and Faulting in Rendezvous Hill Subunit rh3. The *A. cervicornis* facies, as thick as 17 m, is a framework of *A. cervicornis* fragments, together with isolated individuals and small lenses of *A. palmata.* The facies is a product of in-place growth and collapse, as indicated by the following evidence. *A..cervicornis*, which grows as a thin-stemmed bush and readily breaks up in sticks, occurs in subunit rh3 with three different stick fabrics (Fig. 5): 1) totally broken and well bedded sticks; such sticks are unreworked, and the fabric is unlineated; 2) mainly well bedded sticks but including scattered individual sticks aligned subnormal to bedding; and 3) unbroken bushes with growth direction subnormal to bedding above and below. Both the bedding-normal sticks, inferred to be stalks of bushes stripped of stems, and the bushes indicate partial preservation of *A. cervicornis* in growth orientation. The occurrence of the three fabrics throughout the subunit and the absence of features indicative of lateral transport of sticks in the bedded fabric indicate the facies originated by collapse in place of A. cervicornis colonies.

The *A. palmata* facies of subunit rh3 contains *A. palmata* mixed with minor head coral; *A. cervicornis* is minor or absent. This facies occurs in beds and lenses up to 4 m thick that are interlayered with *A. cervicornis* facies (Fig. 5). The growth orientation of head coral indicates that *A. palmata* collapsed in place.

Further, the dip of bedding in subunit rh3 is smoothly arcuate from horizontal to 18∀N dip in two increments of the University Drive roadcut, one 25 m and the other >100 m in width parallel to the

section (Fig. 5). Both arcuations have horizontal, east-trending axes and are post-lithification. The arcuation is attributed to folding because the dip changes are gradual, the stratification is unbroken, and the axes of the two arcuations are colinear. Such characteristics imply that folding followed lithification and that an origin by synsedimentary slumping is improbable. Further, there are no intercalations of plane and deformed beds, as expected with slumps. The dip changes are unlikely to be depositional because the south dip of the terrace floor denies the existence of a north-facing seabed required for primary north dips of plane bedding. The dip changes, moreover, are not cross bedding because most of the sediment of subunit rh3 underwent no lateral transport. We explain the folds as rollovers in the hangingwalls of normal faults that cut steeply through subunit rh3 (Fig. 5). The rollover origin requires that the steep faults are ramps of an unexposed detachment with top-south slip that lies within or below Pleistocene limestone. The detachment is inferred to extend in the subsurface landward of subunit rh3 to a breakaway ramp that forms the linear depression on the denuded tread of subterrace RH-A (Fig. 2). The depression is thus explained as a half-graben