AUSTRALIAN NOTES

By WARWICK DEACOCK

Probably the most indicative sign of development in Australian mountaineering is that a magazine called *Thrutch* has now finally found its feet in Sydney and reaches all States, thus giving a central theme to the sport which had hitherto been a parochial affair. Climbers now go on inter-State pilgrimages to do each others' climbs and exchange techniques. Sandstone is probably the predominant rock in the eastern States, and techniques have now been developed to safeguard the leader on this rather friable substance. Although statistics are hard to come by there have been few deaths of late, but a number of falls that certainly would have resulted in death had it not been for bolt belays—that is, if the climbs on which the falls occurred could have been made at all before the advent of bolts. John Davies, President of the Sydney Rock Climbing Club, has contributed a note on bolts which appears below.

At the Warrenbungles, a crowd of up to a hundred climbers from Tasmania, Queensland, New South Wales, Victoria and South Australia meets each Easter vacation to climb the blade-like basalt crags such as the Breadknife, which rises 700 ft. although never more than 30 ft. in width. Climbers operate at their own risk, since they must get up at dawn if they are not to be caught by the park rangers who object to tourists getting hit on the head by the rain of basalt. Every summer now sees a large movement to South-west Tasmania, where the horizontal scrub guards such splendid peaks as Federation, the Arthurs and the Annes—climbing of a high degree which requires planning techniques not dissimilar to those of the New Zealand scrub-trampers. Air drops are used extensively, and with the coming of hydro-electric works Federation Peak may yet be reached by canoe—such is the march of progress.

On returning from Heard Island in 1965, I and some friends set up a camp in the Kangaroo valley, and at this base we are conducting a sort of antipodean Ogwen cottage, giving an introduction to most of the creative and adventurous activities. Resulting from this is an association known as Ausventure that undertakes annual expeditions of an adventurous and educational nature. This December will see fifteen schoolboys aged between fifteen and nineteen and a half taking part in a three-week adventure course at the Himalayan Mountaineering

Institute at Darjeeling, after which they will be setting off on some moderate 'walkabouts' of their own. Meanwhile expeditions are planned to Kinabalu in Sabah and to the Japanese Alps.

From Adelaide in South Australia comes a move for an Australian Mountaineering Federation—not before its time, for suddenly on the scene are quantities of scouts, Duke of Edinburgh's Award holders and young people looking for adventure in the hills, but with as yet no standards to assist them in safe pursuit of the sport.

It is going to be interesting in these coming years to see the effect of 'diggers' arriving in Europe and England, where their ambitions to see the home of the sport may reveal for the home team some very fine climbers and interesting techniques.

Mr. John Davies writes:

Bolts

Sydney is surrounded by sandstone cliffs and crags. We have hundreds of miles of these, varying from 200 ft. to 1,200 ft. in height. Some of this is soft and some devoid of holds, but those parts that are climbable are usually hundreds of feet high and have no natural belays. Until recently, a retreat down a 1,000 ft. sheer face was a nightmare; piton cracks were rare and the rock too soft to trust—the pitons either crumbling the rock or rolling out on the grains of sand. Channel pitons which can cut into the rock prove too expensive for most of the week-end climbers

To overcome this lack of anchors, we have developed the 'bolt': just a normal, high tension, hexagon-headed $\frac{3}{8}$ in. bolt, 3 in. long in hard rock and $3\frac{1}{2}$ in. in soft rock, 4 in. for abseiling. The bolt hole is drilled with a $\frac{5}{16}$ Sebco tap twist spiral drill (not a star drill), using a heavy piton hammer. In rotten rock we have tested these bolts and found that they usually hold 1,300–2,500 lb. Failure is normally due to the bolt bending, and crumbling the rock—eventually to break at the thread.

Usually the hole is smaller than the bolt, so that the bolts are filed partly square, the amount depending on the hardness of the rock and the neatness of the hole when drilled.

For artificial climbing a smaller bolt is used: a $\frac{5}{16}$ bolt with a hole drilled with a $\frac{1}{4}$ in. Sebco drill. In sandstone no filing is needed. These bolts hold about 600 lb. In harder rocks such as trachyte (Warrenbungle mountains, northern N.S.W.) or limestone (Bungonia gorge, N.S.W.) we use a $\frac{5}{16}$ by $2\frac{1}{2}$ in. bolt; for artificial climbing the bolt is $\frac{5}{16}$ by 1 in. and is filed square.

Abseiling needs a bolt 1 in. longer than the belay bolt. A washer prevents the sling or rope from coming off. The means of attaching the karabiner to a bolt is by a strip of steel with one end bent to about thirty degrees and a keyhole-shaped hole in the long end, so that this slips

over the bolt head and is then held firm. Bolts are sometimes recovered, although this is often hard to do.

It has taken several years to develop the bolt techniques, and since these have been perfected the standards of climbing on sandstone have risen sharply. The ensuing sport fully justifies the mechanical approach, and the costs are nothing like those incurred when using manufactured pitons.