THE ISLAND OF ST. KILDA

A SURVEY OF ITS CHARACTER AND OCCUPANCE

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It is the personalities that we meet in our lives who make the most lasting impressions on us; the great men of our time are too big for us to comprehend. St. Kilda ranks in the geographical sense as a personality. Although tiny in dimension, it is unique; it assails the senses, captivates the mind, and leaves an impression that is deep and intimate. Grandeur and grace, brutality and beauty, isolation and homeliness—these are the elements that make St. Kilda acceptable and unforgettable.

That this rocky mass became since long past the home of human communities is probably the basis of its fascination. Numerous and varied accounts have been written relating to St. Kilda and the St. Kildans, but although many are interesting and some authoritative, they can in no wise be regarded as presenting a comprehensive and balanced account of the island and of the life of its inhabitants.[1] It is therefore the aim of this paper to place before the reader a general review of the island of St. Kilda: this is based upon a measure of geographical survey, a study of existing records, and some consideration of change through both geological and historical time.

Isolation was probably the most powerful factor governing the occupance of St. Kilda by man. The island lies 40 miles directly west of North Uist in latitude 57° 49′ north, and is 75 miles from Barra Head which must be rounded when sailing from the inner shores of the Outer Hebrides. These distances are not great in themselves and do not compare with the distances to the Faeroe and Madeira Islands. Yet from October until the end of March it was customary for no contact to be made between the Hebrides and St. Kilda, a condition directly attributable to the fury of the Atlantic storms that lash the island throughout the winter.[2] During the summer months its isolation was due more to the tiny size of the community and the poverty of its resources, so that there was little incentive for

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vessels other than the factor's boat or the mail steamer to make any call.

St. Kilda itself covers 1,575 acres and is the largest remnant of a much bigger igneous mass probably of Tertiary age (Pl. I, fig. 1). Its coastal circumference totals 9 miles and less than 2 per cent of the island lies more than half a mile from the sea (Fig. 1). The lesser islands that lie about St. Kilda are

Fig. 1—Physical Relief and Place-Names of St. Kilda.

further remnants and are all much smaller. Soay, close to St. Kilda on the west, extends to 244 acres; the Dun, to the east, covers 70 acres and is isolated by some 20 yards of water; Boreray, lying 4 miles away to the north-east, runs to 190 acres: in addition there are numerous stacks some of which like Levenish, Lee and Armin are notably striking. In every case the great foam-girt cliffs of these islands and stacks, as well as their scattered distribution, bear witness to the ceaseless, devastating onslaught of the ocean.

As the islands are reduced in size their form becomes simpler and access to them grows increasingly difficult. Stac Lee and Stac an Armin are simply precipitous rock pyramids rising to over 500 feet in height: Soay which is bigger and rises to 1,000 feet is essentially simple in outline and is bounded by cliffs in which no break is readily visible, but two small bays

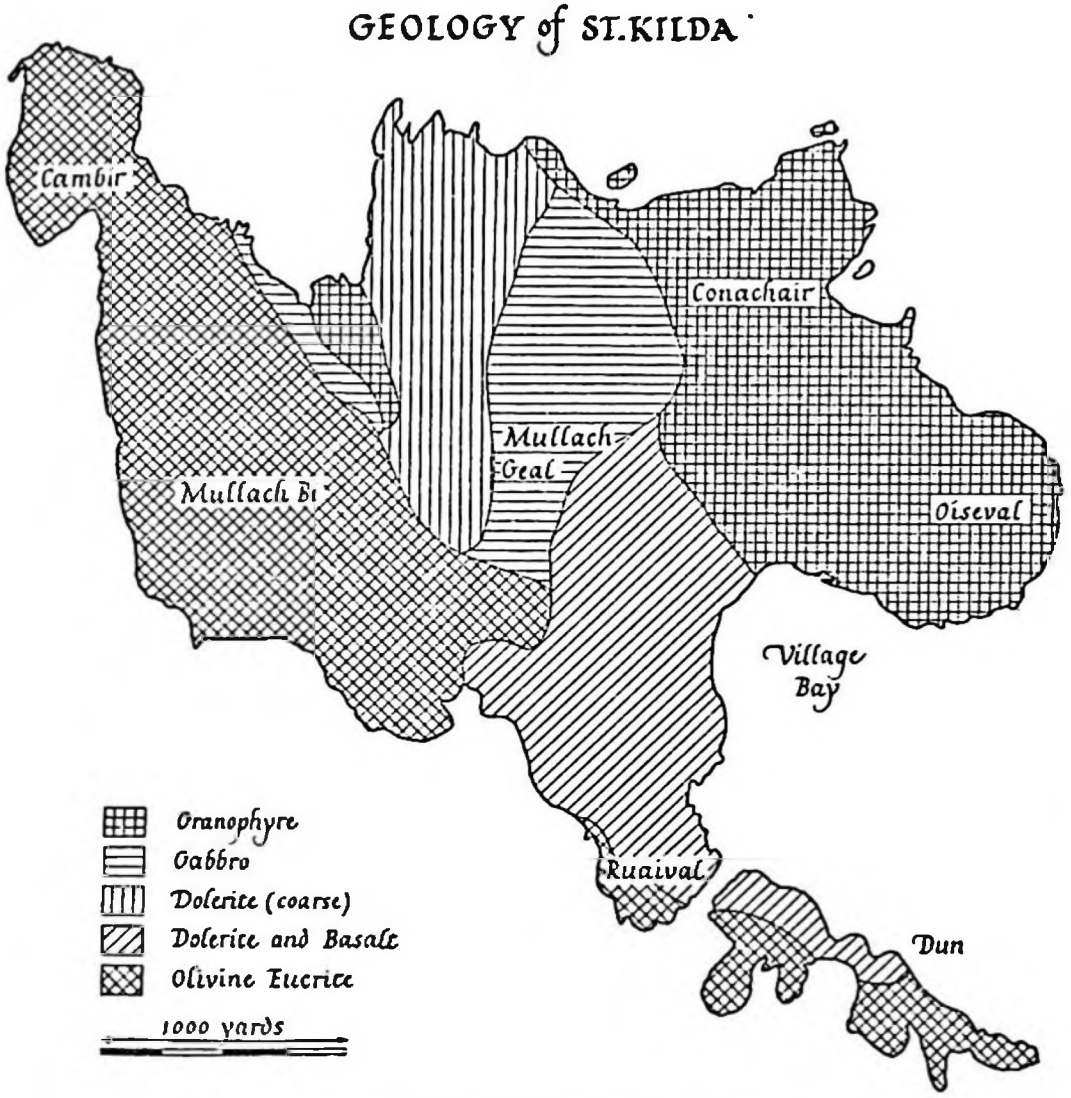


Fig. 2—Geology of St. Kilda after Cockburn (1935).

lend variety to its western side. St. Kilda also rises to over 1,000 feet, the highest summit, Conachair (Pl. II, fig. 1) falling just short of 1,400 feet, but the outline of the island is much more irregular than that of its neighbours (Figs. 1 and 3). Two well defined bays, Glen Bay in the north-western corner and Village Bay on the eastern side, make significant breaks in the cliff frontage; Glen Bay is essentially wedge shaped whereas Village Bay is attractively crescentic in form. The long coastal ridge through Mullach Bi which protects these two bays and

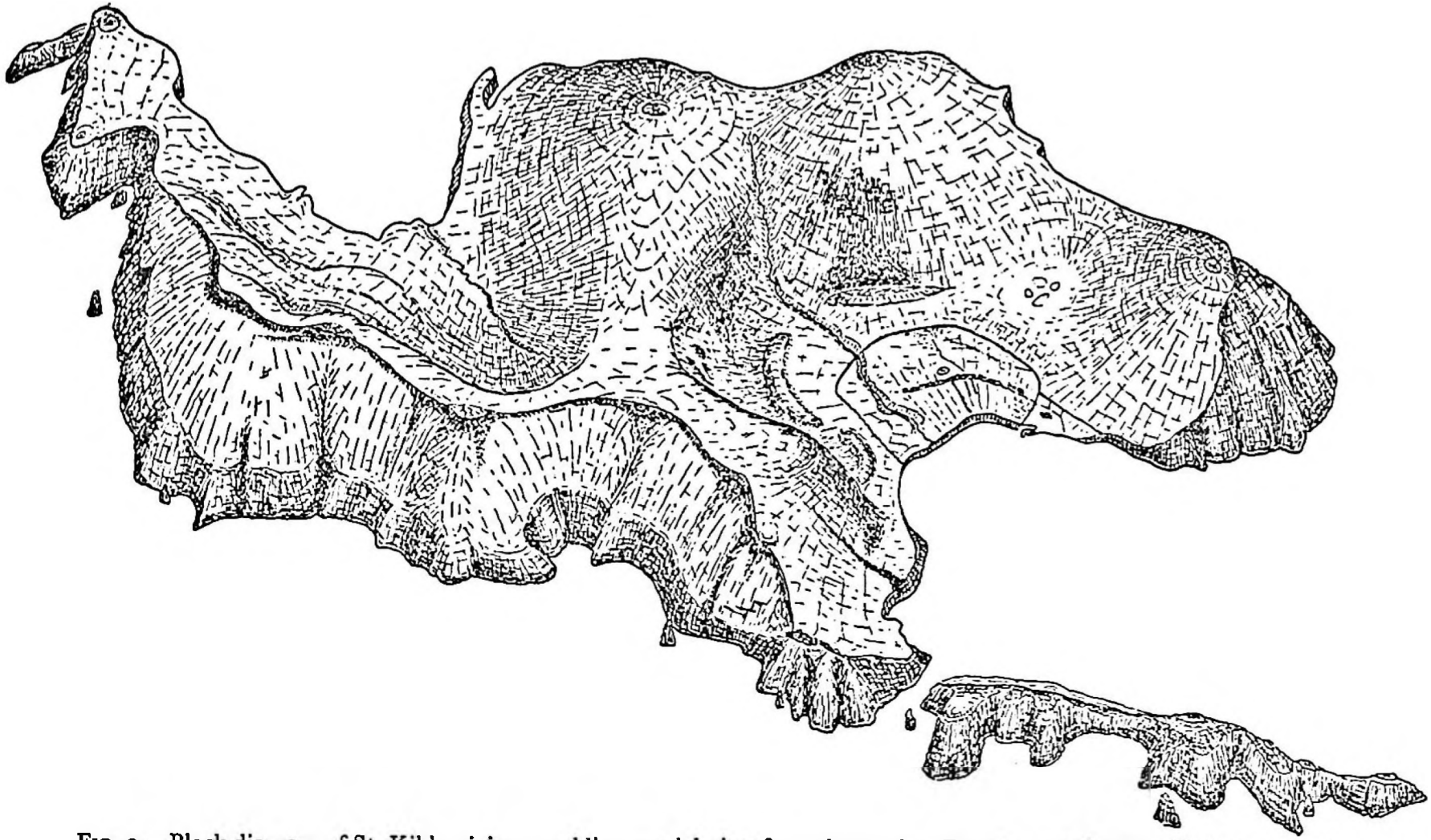


FIG. 3.—Black diagram of St. Kilda giving an oblique aerial view from the south. Features may be identified by comparing this drawing with Fig. 1.

which presents a massive cliff face to meet southerly and westerly gales, is surprisingly regular in outline; it has, however, been breached at its southern end where the Dun lies separate from Ruaival, and at its northern extremity the Cambir forms a small but distinctive peninsula. The north coast is one of towering, blunt headlands, of open bays and stacks; here too are the highest cliffs on the island. On the east the impressive mass of Oiseval (Pl. II, fig. 2) thrusts a great shoulder into the sea thus partially protecting Village Bay.

Five main rock types have been noted on St. Kilda (Fig. 2) and these have been examined and mapped in some detail by the late A. M. Cockburn (1935): these rocks have clear bearings upon the landforms, the vegetation, and the stone constructions on the island. Occupying the west and appearing on the south side of Ruaival and the Dun is a bluish coloured eucrite; this is a finely grained rock with a block-like structure and notably basic composition, and as may be seen from the figures below it is particularly rich in alumina and magnesium. Landforms of a distinctly rugged and knobbly character are fairly typical of the eucrite area (see the Dun, Pl. IV); rock bastions often stand out as weaker dykes are eroded away, and where exposed to fierce subaerial weathering (as on Ruaival) the rock breaks up initially into an impressive jumble of great blocks. In marked contrast the eastern part of St. Kilda consists mainly of an acid granophyre. This rock is of an attractive light buff colour, it weathers uniformly to produce smooth hill outlines, but where vulnerable to shattering (as on the face of Conachair) it disintegrates into slabs measuring up to 6 feet in width and 2 feet in thickness (Pl. III, fig. 1). The granophyre produces a residual mantle of a gritty character that is in keeping with its high silica content.

Lying between the eucrite and granophyre masses the central zone of the island is composed in the main of gabbro, dolerite and basalt. These rocks resemble each other more closely than they do either the eucrite or the granophyre. They are dark in colour, fairly basic in composition, and give rise to landforms that are neither so rugged as those of the eucrite to the west, nor so symmetrical as those of the granophyre to the east. They also differ in structure, breaking down into fragments of irregular, angular shape (Pl. III, fig. 2); this is particularly noticeable around the south side of Village Bay.

These igneous rocks offer considerable resistance to erosion, but they are well jointed structurally and contain many thin,

intrusive sheets, so that numerous cracks and tunnels are formed by marine attack. Thus it is that sections of the cliffed ramparts of St. Kilda are undermined by caves and passages of up to 40 feet in height.

Chemical Analysis of Rock Types
(After Cockburn)

Rock	Silica	Alumina	Calcium	Magnesia	
Eucrite . . .	45	22	11	13	per cent
Gabbro . . .	49	18	13	...	„ „
Dolerite . .	47	15	10	...	„ „
Granophyre . .	74	13	...	...	„ „

The climate of St. Kilda closely resembles that of the Outer Hebrides, although it may be rather more moist and a shade colder at all times of the year. The absence of continuous weather records is of course a handicap, and estimates of the climate must be based mainly upon reports from a variety of sources.

Wind is surely one of the most influential elements. Periods of calm are quite common but they are generally short-lived, and from September until the end of April winds of more than Force 5 are prevalent and gales are of frequent occurrence. In fact neither rainstorms nor the ocean assert themselves to quite the same extent as does the wind: on the higher parts of the island it strips away chunks of turf and kills grass and heather by laying bare the roots; at lower elevations it often damaged crops and buildings and its cooling influence inevitably retarded growth and ripening. Walls are of little protection to cultivation plots or gardens since, in accordance with the relief of the island, air currents generally sweep down from an oblique angle. Nothing bears more powerful testimony to the strength of a St. Kilda gale than the sight of sheets of spray being hurled 200 to 300 feet high, up and over the Dun, unless it be the sheer impact of the wind itself which seems to hammer the very ground into motion. Thus in ways direct and indirect the winds on St. Kilda are a force to be reckoned with, and it is small wonder that St. Kildan architecture incorporated devices to deal with it.

Cloud and shadow also play significant parts in lowering the temperature. A distinctive feature of the island is the cloud-cap which frequently lies over it and which is associated with moist, westerly weather (Pl. II, fig. 2). Shadow is effective as a result of the height and steepness of the hill-slopes; during the

winter months the sunshine potential of the village area is considerably reduced by the great shadow cast by Mullach Sgar, but the effect is even greater in Glen Mor which lies in the shadow of Mullach Bi for approximately five months of the year. Eliminating all unstable slopes and all areas above 300 feet, the part of St. Kilda with the best insolation lies undoubtedly in Village Bay between the graveyard and the factor's house (Fig. 4). Snow is probably quite a normal feature of the climate, and the frequency and intensity of frost is confirmed by the masses of rock-scree littering the foot of Conachair and Mullach Sgar.

St. Kilda's rainfall may total about 50 inches annually. The regime is probably similar to that of the Outer Hebrides, rain falling at all times of the year and building up from September onwards to reach a maximum in December and January. Evidence from various sources seems to confirm that precipitation occurs in characteristic insular fashion, rain falling throughout well defined periods and in considerable concentration. Rain and storm together make a notable impact upon the island. There are no trees to afford shelter, the vegetation is thin in many parts, and the soil mantle is shallow except in Village Bay and Glen Mor; and these factors together with the prevailing steepness of the hillsides produce a rapid and destructive run-off. After one night of rain the island is literally running with water; white cascades fleck the slopes, dully glistening sheets of water are reflected wherever the vegetation is sparse, and the flatter parts of Village Bay around the houses lie chill and sodden. On the whole the climate of St. Kilda is discouraging to settlement and in all respects adverse to cultivation.

One of the fascinations of the island is, however, connected with the climate—it is in fact the rapidity with which the weather changes. Within a period of 24 hours a south-westerly gale may give way to sunshine with warmth and a blue calm on the bay, and this in turn may vanish as a cold front sweeps in across the ocean and north-westerly winds assail the island. Rapid changes such as these are fraught with peril for man, and particularly so where sailing, fishing and climbing were all part of the daily routine.

St. Kilda is strikingly impressive on account of the height of its hills and the steepness of its slopes. Viewed from a distance of several miles, the isolated aspect of the island is rivalled by its bold outline, and at close range the settlement in Village

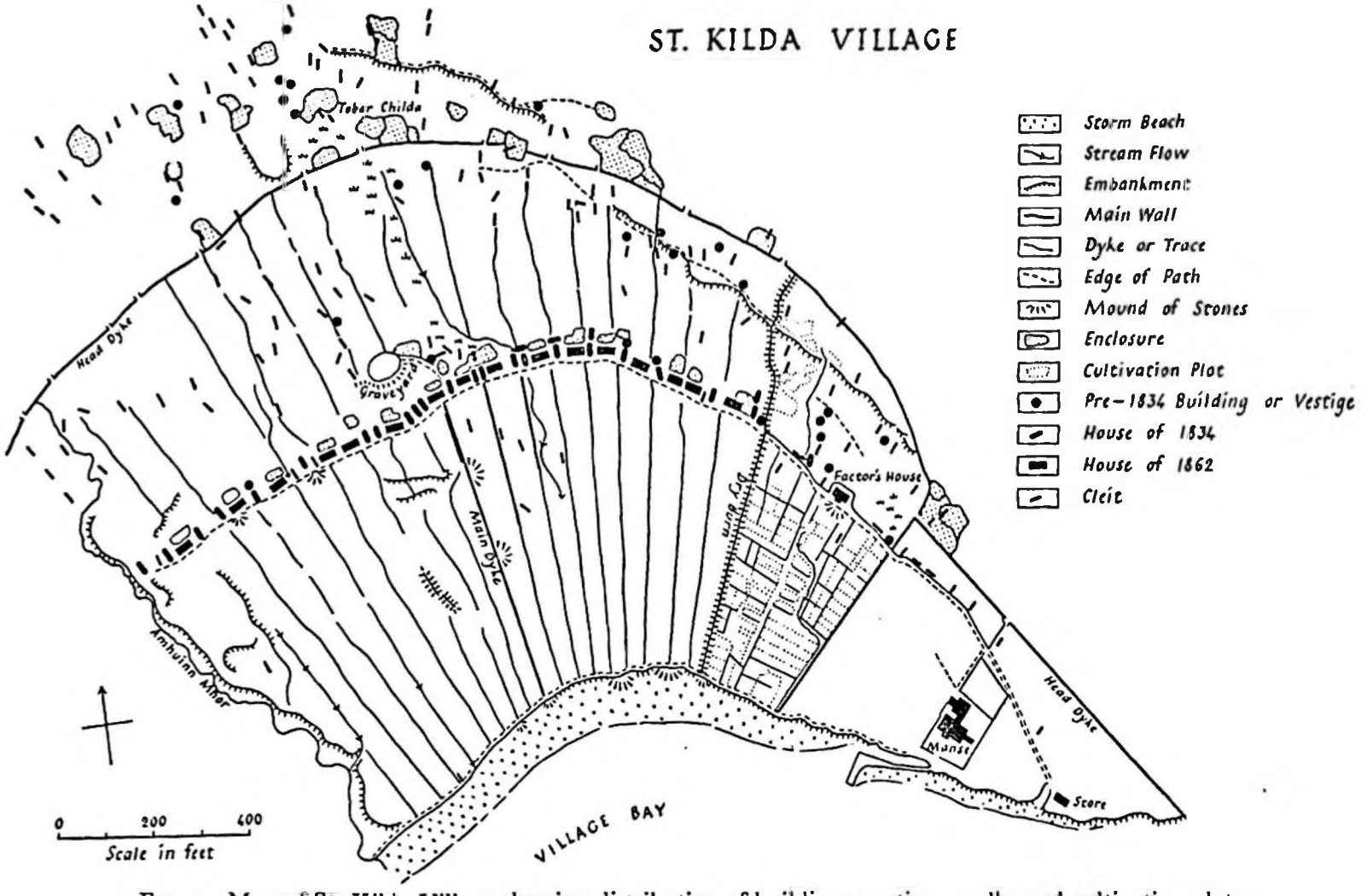


FIG. 4—Map of St. Kilda Village showing distribution of buildings, vestiges, walls, and cultivation plots.

Bay is dwarfed by the imposing hill-sides that rise around it (Pl. IV). Experience of the heights on the island induces at first in many a recurring sensation of dizziness, but as mind and eye become attuned to the unusual physical conditions, confidence grows and apprehension tends to be replaced by exhilaration.[3]

Three summits stand higher than 1,000 feet above sea level and five others fall just short of this height, which is quite remarkable on an island where the direct distance from the interior to the shore-line or cliff-top seldom exceeds 1,200 yards. Thus it is that steep slopes prevail throughout the island, and that around Village Bay and along either flank of Glen Mor gradients of 1 in 2 and 1 in 3 are the rule. Slopes of this nature commence generally at about 300 feet, and since 80 per cent of St. Kilda lies above this level only a small proportion of land is available for human occupation.

Symmetry is one of the island's most attractive characteristics and particularly since it takes various forms. That it exists is a consequence of several factors—the structure and strength of the igneous rocks, the homogeneity of the granophyre, the absence of severe glaciation, and the uniform action over the island as a whole of chemical weathering and vigorous rain-wash. Conachair and Oiseval on the granophyre side are conical peaks of rare attraction (Pl. II), although neither is complete since their seaward slopes have been truncated by marine action. The central ridge of Mullach Geal shows a distinct uniformity, and farther south the steep, easterly slopes of Mullach Sgar are counterbalanced by the tabular character of the summit area. For an island that is being attacked relentlessly by wind, weather and ocean, St. Kilda possesses an astonishing sense of climax. The conical summit of Conachair provides the perfect sequel to the great, upward sweep of its slopes; the tabular peninsula of the Cambir is a unique conclusion to the long, declining ridge of Mullach Bi; and what better finish to the amphitheatre of Village Bay than the shelving rampart of the Dun, its leeward slope flowing symmetrically into the hollow of the bay?

Variety is not an obvious feature of the St. Kildan landscape in which cliffs, hills and steep slopes are the dominant elements. Major distinctions may readily be made between the bays and the hills, between the granophyre summits and the ridges of eucrite and dolerite: but there are also minor variations in form that are not so obvious and yet are of significance,

and these are found mainly around the coasts and in the area of Village Bay.

The cliffs of St. Kilda differ considerably according to the interaction of rock-type, structure, marine and sub-aerial erosion, but irrespective of geology a basic distinction must be established between the cliffs as such, and the very steep slopes that surmount them. Cliffs in the sense of a wall of rock, variously broken in character but sheer (or nearly so) in profile, extend around 95 per cent of the circumference of the island and rise to heights of between 100 and 500 feet. The highest unbroken cliff seems to lie on the north side of Mullach Mor with a rise of about 600 feet. The slopes that frequently surmount the cliffs lie at angles of between 40 and 80 degrees, and may range up to 700 feet in height as on Carn Mor: the surface of these slopes is unstable and in wet weather is quite treacherous, and in some places (e.g. west of Mullach Sgar) they present a fascinating resemblance to gigantic chutes (Fig. 3). The profile of the granophyre cliffs is rather broken and complex, for here the slabs of rock form buttresses for many small ledges, by reason of which these cliffs are greatly frequented by sea-birds and in particular the fulmar.

The cliffs of St. Kilda are also impressive in that one may come upon them so suddenly. The climb up out of Village Bay or Glen Mor gives no forewarning of the surprise that is to come; the bay and the glen are enclosed in character, and attention is furthermore focused upon the steep ascent which is exacting on human energy. Then all of a sudden there is no more land, only a vast, empty expanse, a void of air scattered with swirling, soaring sea-birds and far below the sea boiling and seething against the base of the cliffs. The contrast is striking and makes an impact on the senses that is unforgettable.

The variety of landforms occurring within Village Bay[4] is full of meaning and merits careful examination. The village enclosure lies on a gently sloping shelf which extends inland up to 400 yards and covers about 50 acres. To the north and west this shelf is backed by distinctive ridges and scree accumulations, lying below the steep slopes of Conachair and Mullach Sgar; north-eastward lies the intriguing hollow of An Lag Bho'n Tuath, and eastward the shelf dies out between the sea and the steep slopes of Oiseval (Fig. 1). On the seaward side a low, earth cliff is fronted by a formidable storm-beach, and below this extends a delightful sandy beach which is exposed only at low tide.

Enclosed by the main village wall (the head-dyke) and previously utilised intensively by the St. Kildans, the village shelf (Fig. 4) may be thought of as a single homogeneous area, but in reality it contains several significant parts. The southern half which lies below the line of cottages is gently sloping and broken only occasionally by minor irregularities; the north-west quarter is generally smooth with a moderate gradient of about 1 in 8; to the north-east the ground is much more broken, and also much steeper with gradients averaging about 1 in 5, a small but distinctive feature of some importance being a bluff that runs fairly regularly just below the head-dyke and roughly parallel to it.

These moderate slopes and the thickly turfed surfaces are deceptive in that they do not reveal the virgin character of the village shelf before man began to modify it, for the area was clearly littered with rock debris derived from the surrounding heights. Big blocks of rock still lie scattered over the north-east quarter, a notably rough zone extends as a narrowing tongue from Tobar Childa to the bay, and great quantities of stone have been gathered to build houses, cleits and dykes, while at least five dumps of stone are discernible on the shore. Exposures of the soil profile along the Amhuinn Mhor and the Dry Burn show accumulations of gravel, stones and boulders that are distinctly angular in form, and it is only below the village and east of the main consumption dyke that free soil occurs with a depth of 12 to 18 inches. The crescent-shaped village shelf thus consists of unconsolidated rock material derived from the surrounding slopes; in its downward movement this material has been roughly sorted, so that while the bigger blocks have accumulated at the back of the crescent to give rough and rather steep slopes, the finer material below the village coincides with smoother, gentler slopes. In parts, however, the pattern is not as simple as this, and there is evidence to suggest that ice, as well as gravity and rain-wash, has played a part in the work of transportation. The tongue-shaped drift zone extending seaward from Tobar Childa contains granophyre boulders that must certainly have been moved into position by ice.

The geological divide between dolerite and granophyre lies just east of the Amhuinn Mhor, and accounts for certain distinct differences in the rock drift within the village enclosure. Along the Amhuinn Mhor and west of it rocks and soil are derived from dolerite, basalt and gabbro; the material is much fragmented, blocks seldom exceed two cubic feet in

size, and shapes are distinctly angular. Eastward the granophyre yields rocks of quite a different character in that they are much larger, occurring as slabs and blocks, and are subangular; the bigger blocks may range up to 20 cubic feet in size, and after creeping and slipping down the slopes of Oiseval and An Lag, they have accumulated in a zone that lies just below the lip of An Lag and along the break of slope near the foot of Oiseval (Pl. V, fig. 1). This jumble of rocks was obviously exploited to assist in the building of the head-dyke, and it has also acted as a gigantic sieve permitting only small rocks and gravel to pass down to the levels below the factor's house and around the manse. Thus although the village enclosure appears as a single unit surrounded by one head-dyke, it does in fact contain four divisions that are likely to have had bearings upon man's occupance and activity; to the west lies the doleritic zone of mixed rock debris, into the centre extends the drift tongue, and the east falls into an upper rough and rocky slope, and a lower, fairly level shelf of relatively fine material.

The distinctive ridges and accumulations of rock-scree that flank the northern and western sides of Village Bay constitute some of St. Kilda's most interesting forms. These ridges lie in two formations, one at the foot of Conachair well defined and about 200 yards long, and the other broader, less ridge-like, extending for about 500 yards along the south-western flank of Village Bay. Their rounded tops and steep sides give these ridges a humped appearance, and while they measure from 50 to 80 yards (estimated) across their base, their height is of the order of 80 feet. They appear to consist primarily of coarse rock debris, although the rock interstices are solidly filled with residual matter and soil, their rather dry nature being confirmed by a distinctive cover of heather. The peculiarity of these ridges is that they stand out from the general hill-slope—they do not lie flush with it, as for example does a rock-scree.

The feature below Conachair is clearly a pro-talus ridge of excellent formation (Pl. II, fig. 1), and not a moraine as suggested by Wager (1953:178). This ridge developed under climatic conditions which permitted the existence of a bed of ice in the partially shadowed, hillfoot hollow below Conachair, and which simultaneously allowed frost splitting to persist in open situations on the rock faces higher up; fractured rock debris would overshoot the hillfoot bed of ice or be carried across it in the surface layers, and so go to build up the pro-talus ridge which to-day lies apparently in odd isolation. The

ridges along the south-western flank below Mullach Sgar are not so obviously pro-talus in character, although they are partially so, for here the terrain is conducive to instability and the pattern of ground forms has become complicated by slumping and solifluction. In addition to the interest that these ridges offer in themselves, they are important in that they suggest that periglacial, rather than glacial conditions, prevailed upon St. Kilda during the Quaternary Ice Age; this does not, however, preclude the possibility of the relatively short-lived existence of shallow ice-sheets and small ice-flows.

The hollow of An Lag Bho'n Tuath, lying to the north-east of Village Bay, is another distinctive feature lending variety to the landscape. It is in some respects suggestive of a corrie, but there is actually no evidence to show that it originated from ice action, although it was probably modified by this. The floor is roughly oval in shape, covers in all about 7 acres, and consists of a sedimentary infilling of stones, gravel and soil derived from the adjacent hill-sides. It would appear that this material lies in a rock hollow, since the vegetation on the floor of An Lag is notably green and lush, and since in wet weather the whole floor becomes quite waterlogged; nor does the Dry Burn flow with water until An Lag has become saturated right to the surface, thus suggesting that the hollow operates as a natural sub-surface reservoir. Across the mouth of An Lag lies a low and rather wide barrier of rock debris and gravel, which may reasonably be regarded as a terminal moraine, so that in conclusion An Lag may be described as an ice-deepened hollow, terminated by a moraine, and infilled by the downward creep of gravel and soil, and by the decay and accumulation of moss vegetation.

The only other piece of evidence that seems to bear conclusively upon the glaciation of St. Kilda is the drift tongue extending to the shore from the foot of Conachair. Wager (1953:179) seems to have suggested that this may be lateral moraine deposited by ice flowing from Creagan Breac, but the dominance of granophyre rock and the scarcity of gabbro and dolerite would seem to invalidate this view. Giving due consideration to topography and rock material, it seems probable that this drift tongue was deposited by ice flowing down from the slopes of Conachair: rocky drift was in fact scattered all across the village shelf as has been pointed out, but here in this central zone there must have been a greater concentration and faster flow of ice than elsewhere.

There is no evidence to suggest that St. Kilda was glaciated by the continental ice-sheet during the Quaternary Glaciation, and the few foreign rock elements identified on the shore by Cockburn (1935:544) were probably transported there from the Hebrides by floe-ice or as ship-ballast. During the Ice Age it does seem likely, however, that St. Kilda was completely shrouded in snow and ice, and that small local glaciers developed of which the fastest and most active was that flowing from the steep southern face of Conachair; then at a later stage the pro-talus ridges were formed with ice lying in shadowed hollows, and shattering, sapping and slumping proceeding vigorously elsewhere; the latter processes seem to have worked effectively on the north-facing slopes of Glen Mor and Mullach Sgar. At the present day the landward slopes of the island are everywhere receding on account of weathering, soil-creep and slumping; wherever rock-faces exist, they are subject to rapid shattering as the scree below Conachair clearly shows. A fascinating and puzzling feature occurring on the rock scree below Mullach Sgar, consists of a series of parallel, horizontal terraces. These are notably regular in their alignment, and existing on a slope of about 33° that consists of angular blocks of dolerite, they measure about 2 feet in width and have a vertical interval of 4 to 5 feet. The fresh nature of the scree suggests that these terraces are of contemporary formation, but careful study will be necessary to determine the manner of their formation. No such terraces appear on the granophyre scree which has a steeper slope, is less mature, and which consists of blocks of rock that are considerably larger than in the case of the dolerite.

The storm-beach of St. Kilda is both impressive and intriguing. It consists of a great jumble of boulders stretching for 500 yards along the centre of Village Bay; its width is about 30 to 40 yards, and at low tide it stands some 16 feet above the level of the sandy foreshore. The eastern half of the beach is composed of granophyre boulders that are massive in size and attractively buff-coloured; the western half presents a clear contrast since the doleritic boulders are distinctly blue in colour and rather smaller in size. The boulders that form the storm-beach are derived from either side of the bay in its inner reaches, and having been transported laterally toward the centre, they are there pounded together and built into a rampart that protects the loosely accumulated rock debris and gravel of the village shelf. It is noteworthy that only upon

the beach of St. Kilda (as a result of marine action) are rounded stones to be found; nowhere else is there any evidence of rocks being moulded and smoothed by the influence of water or ice. The storm-beach has evidently been growing seaward for some time and is continuing to do so, but at a very slow rate. The advance depends upon the speed with which fresh material is supplied from the sides of the bay, and the power of the winter storms to push this fresh material up on to and over the existing beach: the existence of patches of "dead" beach, containing vegetation, indicates that at points the beach has attained a maximum height, and must henceforth grow seaward—a remarkable situation on an island such as this! The strength of the barrier depends, however, upon the mass and compactness of the boulders of which it is made, so that interesting changes may well occur in consequence of the breach made by the Royal Air Force when establishing a beach-head in 1957. Glen Mor contrasts markedly with Village Bay for here there is no beach; the valley ends abruptly where a rocky bluff plunges into fairly deep water, and in further contrast to the sandy shelf that underlies the shallows of Village Bay, the waters of Glen Bay are rendered hazardous by the presence of partially submerged reefs.

In consequence of the nature of the island, the drainage of St. Kilda is simple and immature. Much of the rainfall percolates downhill through the surface layer of gravel or trickles along innumerable streamlets, most of which have no established course. The main streams lie in the only two catchment areas of any consequence, in Village Bay and Glen Mor. None of the streams ranks as more than a burn, the Amhuinn Mhor and the Amhuinn Ghlinne Mhoir being each just over 1,000 yards in length and easily crossed by jumping at any point. In addition there are perhaps six or seven lesser burns of several hundred yards in length. The streams of Glen Mor are direct and fast-flowing, their pattern disintegrated, and their channels quite minor; conditions are similar on the east of the island except that the Amhuinn Mhor shows some tendency to meander, in consequence of which its lower course lies in a small gully, which cuts some 10 to 15 feet into the drift of the village shelf. The only other streams to have made any comparable incision, are the steeply graded Amhuinn Ruaival, and the Dry Burn where it falls over the lip of An Lag. The salient conclusion is that the present stream courses are all post-glacial in age; their direct alignment, their narrow,

trenched, transverse profiles, and the minutely etched form of their channels, all testify to a condition of youth. It may indeed be conceived from the evidence available, that normal erosion was completely halted on St. Kilda during the Quaternary Glaciation.

The sub-soil of varying thickness that overlies St. Kilda is of great importance in relation to water-supply, for this layer acts in places as a natural reservoir on an island that possesses no extensive catchment area. The Amhuinn Mhor flows from the saddle between Mullach Mor and Conachair which is the location of St. Kilda's peat-bog, and in consequence it seldom dries up altogether although its flow varies considerably throughout the year. By contrast the Dry Burn issuing from An Lag is notably intermittent; the walled channel constructed by the St. Kildans was obviously designed to contain the force and volume of the Dry Burn when An Lag overflows, and yet for days on end in summer this same channel does in fact lie quite dry. But this in nowise means that the water-supply of St. Kilda Village was intermittent, for a whole series of springs issues from the foot of the pro-talus ridges and morainic debris that lie about the village enclosure; of these, the two most important with a constant flow, are Tobar Childa which issues near the foot of Conachair, and the Minister's Well which lies close to the church; the latter probably derives its water from An Lag by seepage between the base of the moraine and the solid granophyre. Other lesser springs of an intermittent character occur at scattered points around Glen Mor and Village Bay, but an interesting detail is associated in particular with those that issue from the pro-talus deposits below Mullach Sgar. Here the flow of water is insufficient to cut out a stream channel, and instead a series of hollows and humps develops as a result of the slumping of the sodden subsoil: these spring hollows cover approximately 50 square yards in area, are oval in shape and are distinctive by their greenness.

In view of the smallness of the island's streams it is not surprising that marine erosion is proceeding faster than normal erosion. Only in Village Bay behind the protection of the storm-beach does the Amhuinn Mhor flow down normally to sea-level; everywhere else the streams end abruptly where they disappear over the edge of cliffs and bluffs.

St. Kilda is a grassy island entirely void of trees or bushes. In summer the prevailing colour is green into which is mingled

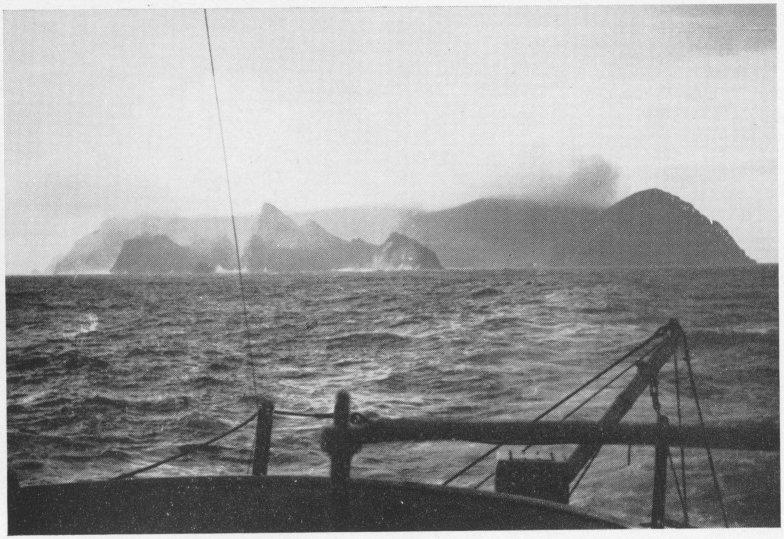


FIG. 1—St. Kilda viewed from the sea.

FIG. 2—Typical specimen of a cleit.

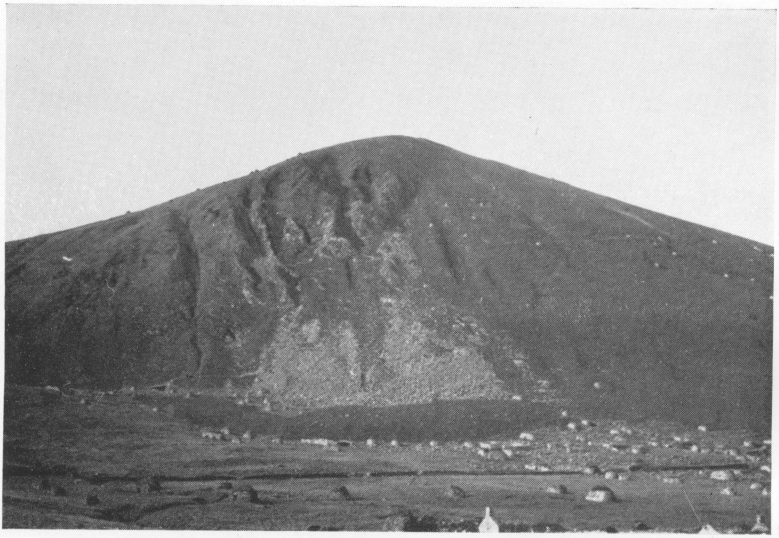
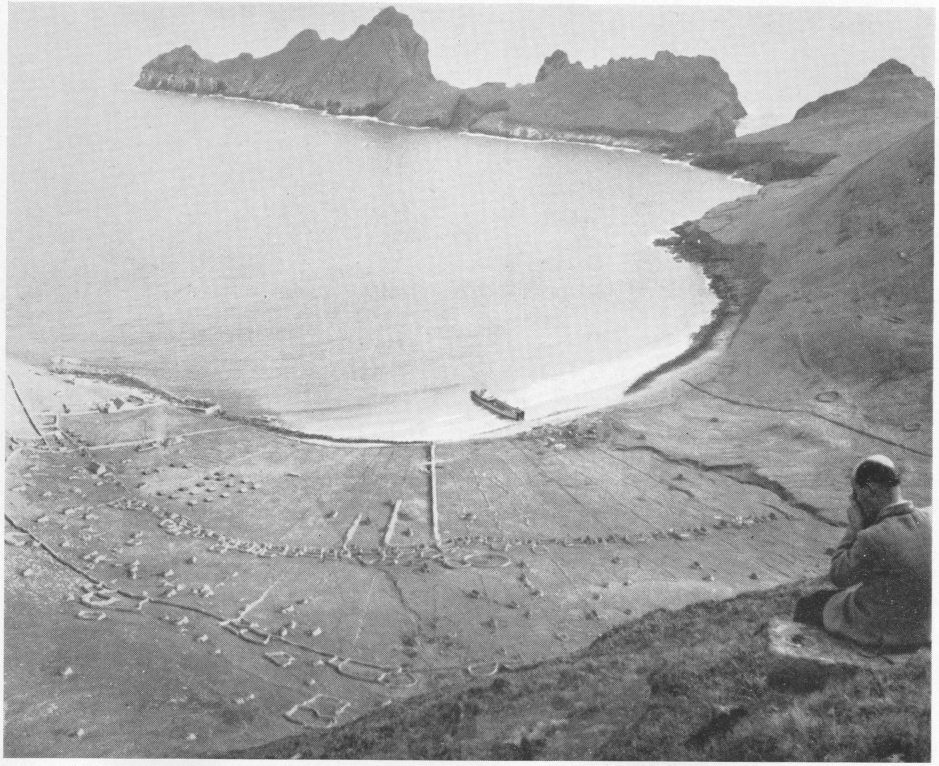


FIG. 1—Conachair showing scree and pro-talus ridge.

FIG. 2—Oiseval and Village Bay with Conachair capped by cloud.

FIG. 1—Granophyre slope on Oiseval.

FIG. 2—Dolerite scree below Mullach Sgar.



View of the village enclosure, Village Bay and the Dun. Compare with Fig. 4, observing village, head dyke, consumption dykes, Amhuinn Mhor to the right, and manse to the left.

FIG. 1—Glebe enclosure wall with surveying pole for comparison.
Note cleits and rocks beyond.

FIG. 2—Remains of pre-1834 house in locality of Tobar Childa.
Cleits and enclosures beyond.

the purple hue of heather, but from October until April the island is markedly brown. There is a rich variety of grasses but the two most prominent are tussocky matgrass and tufted sheep's fescue; heather is the third major element in the botanical complex. The distribution of the vegetation shows a clear response to geology in that sheep's fescue and heather occur in some concentration upon the granophyre hill-sides of Conachair and Oiseval, whereas elsewhere on the basic rocks matgrass prevails. The vegetation cover is on the whole dense and strong where it has not been interfered with by man, but the St Kildans cut heather and turf for fuel over a long period (some hundreds of years), and the patchiness of the vegetation on the slopes around An Lag bears witness to this form of exploitation. On the higher and more exposed situations, it is interesting that it is the heather that gives way first in face of the onslaught of wind. In such situations and particularly on the basic rocks the heather plants attain only a few inches in height; as the plant matures and expands it leaves exposed a thin, decaying, central core, and this point of weakness is attacked by wind and rain; the roots at the centre are thus laid bare, and thereafter it is only a matter of time until the whole plant is destroyed. This process is concomitant with deflation, and considerable patches can be seen on the summit platform of Mullach Sgar that are bare of both vegetation and soil; only a pavement of shattered rock fragments remains.

A distinctive type of vegetation appearing only on the western and southern promontories of St. Kilda is plantago sward. It is found notably on the Cambir and on the lower slopes of Ruaival, and a limited stretch also exists toward the eastern point of Glen Bay: thus the plantago distribution lies below 600 feet on slopes that are gentle to moderate, and in positions accessible to air heavily impregnated with salt (Petch 1933:100). The plantago sward is much grazed by the Soay sheep and is thus very short, and in appearance is pleasingly smooth and green.

Probably the most interesting ecological change that has occurred since the island was evacuated, is the way in which heather has come to dominate the vegetation on the granophyre areas. In 1931 Petch (1933:92-4) observed that the growth of heather was markedly suppressed, and that it rose above turf level only where it was inaccessible to sheep: Petch anticipated an increase in heather at the expense of the various moorland grasses, consequent both upon the withdrawal of

the island's Blackface sheep and the cessation of turf-cutting, and in this it appears that he was right. Heather now dominates one fifth of the area of St. Kilda. This change also suggests that the grazing habits of the Soay sheep differ from those of the Blackface, and observations made in 1957 certainly indicated that the former breed were little attracted to the heather areas.

Another feature of interest concerns the contrast in vegetation existing between the slopes of Ruaival and the northern face of the Dun, areas which are separated only by the narrow sea channel of Caolas an Duin. In 1931 Petch (1933:96-7) noted that the slopes of the Dun were dominated by creeping soft-grass (*holcus mollis*), which thrived along with chickweed and annual meadow-grass because of the concentrated occurrence of puffin droppings. To-day, presenting a contrast to the smooth plantago sward of Ruaival, the Dun bears what appears to be a dense, tangled mass of greenery, which is probably the accumulated growth over three decades of long, rank, creeping soft-grass. The absence of sheep on the Dun accounts for the height of the contrast.

Finally one must surely remark on the scarcity of bracken on St. Kilda! It was noted as being present in 1931 (Petch 1933:98) but only in small patches beside walls, and it has made little or no headway in the intervening years. Low temperatures and lack of shelter may be the crucial factors restricting the growth of this plant, but this is uncertain: expert investigation might throw useful light on the factors influencing the growth of bracken and thus assist mainland farmers in their fight against this blight.

The most interesting feature of the island as revealed by pollen analysis is that trees did certainly exist at one time. There is clear evidence of occupance by alder, birch and Scots pine with the alder generally dominant, and there is also fragmentary evidence of the one-time existence of elm and oak. Insufficient soil samples have been taken to allow for any conjecture as to tree distribution, but it is remarkable that the highest count of tree pollen (18 per cent) was recorded near Mullach Mor at a height of 1,000 feet; in this case alder and birch were dominant. Macaulay (1764:26) recorded the fact that tree trunks were frequently found buried in the ground on the lower parts of St. Kilda, but the author has as yet found no material or documentary evidence to confirm this claim. There is thus no good reason to suppose that trees have grown on St.

Kilda within the last 2,000 years, nor to suggest that the island could carry tree cover under present climatic conditions; wind, low temperatures and salt impregnated air are all powerful deterrents, and only in the sheltered hollow of An Lag Bho'n Tuath might it be possible for rowan, birch or spruce to gain a grip.

Pollen analysis is also very helpful in the identification of areas of previous cultivation, and it reveals too the condition of the village enclosure before it was occupied by man. To-day it is smothered in coarse bent-grass, but originally it was an area dominated by heather which to-day remains in exclusion beyond the head-dyke. This in fact is altogether expressive of the atmosphere of St. Kilda which is essentially one of contest—contest between the elements, the island, the plants and man.

OCCUPANCE AND UTILISATION

To any community in any age St. Kilda offered restricted opportunities. It is isolated, small, notably hilly, and deficient in fuel and shelter, but on the other hand its isolation and nature offer a measure of security, its territory forms a natural grazing ground for sheep, there is an abundance of building stone, a constantly assured water supply, and fish are to be had in plenty in the sea around the cliffs. To these attributes is added a multitude of sea-birds, but the effective use that the St. Kildans made of these creatures simply confirms the meanness of their resource base as a whole.

The settlement and field pattern established by man about 1830 and existing thereafter in occupation for a century is deceptive in appearance. Since the evacuation of the island in 1930 the village enclosure has inevitably suffered damage and decay, the houses being mostly roofless and the infield overgrown with rank grass: yet the neat alignment of the cottages, the systematically constructed consumption dykes, and the orderly arrangement of the field enclosures are all features that catch the eye; the peculiar buildings called cleits are in remarkably good condition; and the man-made channel containing the Dry Burn shows neither disintegration nor blockage. In consequence it might well be assumed that the St. Kildan community had been fairly prosperous, and that it had established itself securely with a strong measure of control over its environment. Only a careful examination of the economic

and social organisation of St. Kilda can provide a reliable assessmen .

The history of the settlement of the island can be written properly only after some archæological evidence has been obtained. Nevertheless there is a fair amount of fragmentary evidence confirming that St. Kilda was occupied by man long before the construction of the "modern village", and indeed long before the first detailed account was written by Martin Martin in 1698. What is unfortunate is that the many travellers' reports are generally of an imprecise and romantic nature, and that in successive stages of culture the St. Kildans inevitably destroyed or modified earlier buildings in order to accommodate contemporary needs. Lacking archæological evidence, it would be rash and untimely to attempt to present the story of the peopling of St. Kilda, but it may be interesting and useful to discuss such evidence of habitation as has been noted to date.

In all, six different types of house architecture may be distinguished on the island with a varying measure of assurance in each case. In possible time sequence, they are as follows:— underground dwelling, Norse house, corbelled house with beehive and cleit variations, small black-house, improved black-house, and traditional Scottish cottage.

There are only two known examples of underground dwellings. One is situated in the small central enclosure behind the glebe and has been walled up by a slab of granophyre since about 1830; it was discovered in the time of the Rev. Neil MacKenzie when improvements were being made to the infield area. The other remains open and distinct; it lies 50 yards N.N.W. of the graveyard and is elongated and tunnel-like in shape with stone-lined sides and a roof of rock slabs. It is noteworthy that the shelving nature of the Village Bay area and the abundance of granophyre slabs would together facilitate the construction of primitive tunnel dwellings, and in this connection it should be observed that there are also a number of indeterminate mounds scattered about the stony ground on either side of the main consumption dyke; these may simply be consumption piles, but in alignment and form some of them are oddly uncharacteristic, and their investigation might possibly prove interesting. The tunnel dwellings may well have been constructed by the original inhabitants of St. Kilda, who were probably Neolithic colonists who branched away from the main stream that moved along the Scottish west coast:

a small number of finds apparently of Neolithic age have in fact been made on the island.

That the Norsemen visited St. Kilda is sure from the evidence of Norse elements in place-names, as in Oiseval, Ruaival, Geo, Soay, and Bradastac. The mixture of Norse and Gaelic names also indicates that there must at some time have been a measure of co-existence between the two races, resulting possibly from shipwreck. The only material evidence as yet discovered that suggests Norse settlement are house foundations, two probable vestiges being located to the north and within 50 yards of the factor's house. Buildings of a later period have been placed on these foundations but the latter have not been obliterated.

The building that is most characteristic of St. Kilda is the stone cleit (Pl. I, fig. 2). There are at least several hundred of these constructions scattered over the island and on the whole they all look very much alike. The essential features are that they are rather small, are constructed entirely of stone and turf, and that they fully exploit the advantages of the granophyre slabs that litter the eastern part of the island. These slabs provided natural building stones which were easily fitted into a corbelled or overlapping structure, either domed or arch-like in shape, and capped by flat slabs topped with turf. Such structures require no timber, and if need be the walls can be packed with earth to keep out the ever present wind; nor do they use thatch which requires the existence of an agricultural economy. In accordance then with the conditions and resources of the environment, the cleit style of architecture may well have developed when man sought out drier sites and began to raise his dwellings above ground level. It may easily date back to the Dark Ages (and earlier), and the present cleits are perhaps simplified versions of a style of house that prevailed upon St. Kilda until medieval times.

Examination of the cleits and cleit-like structures reveals that certain of these are quite distinct in character from all others; two notable cases are located close to Tobar Childa, with a possible third lying approximately half-way between these and the factor's house. These are strongly built structures, roughly oval in shape, and measuring perhaps 20 feet in length with a height approaching standing room. The walls are thick and solidly packed with dirt, and the doorway low as in cleits proper. Their most interesting feature is, however, the arrangement of small, low, circular chambers, that have been thrown

out from the main walls. These have been referred to by Williamson as beehive chambers (1958:46-9). They are reached by passing through the main dwelling, and it is reasonable in view of their small and snug character to suppose that they served as sleeping quarters; they may also have had some storage function. The people who built these corbelled structures certainly carried out the work with skill and care, and designed them fittingly to withstand the wind and rain of St. Kilda: their selection of the Tobar Childa site is also interesting and significant.

Buildings of a roughly similar type are found too in Glen Mor, where there appear to be about twenty distinctly separate structures: being relatively isolated they have not suffered the same modification and destruction as those of Village Bay, but they are nevertheless in very disordered condition and seem to be smaller than the Tobar Childa specimens. Size and condition have probably been influenced in part by the available building stone, building being more difficult in Glen Mor where there is not the same abundance of flat slabs as in Village Bay. Williamson has examined these remains with some care and his description of them is as follows (1958: 48):—

> Each is approached between curved 'horns' of dry-stone walling which converge on the narrow gateway of a small, open 'court', again of dry-stone walling and in some cases still 5 feet high. Around this court, clover-leaf fashion, are usually three beehive-shaped chambers, skilfully corbelled towards the top and finished off with a few broad lintels, the whole being originally roofed with turf. Access to these is gained from the court by squirming through an aperture seldom more than 1 foot 6 inches square, and rather less than 3 feet above the ground. The courts are roughly circular, appear to have been paved, and have a drainage channel piercing the wall at its lowest point. A number also have one or two recesses in the wall, each with a sill and lintel like the beehive entrances, and similar in size.

These structures were certainly used by the St. Kildans after 1700 as summer shielings, when the cattle were moved to the pastures of Glen Mor and the opportunity taken to obtain milk from the sheep. The question that arises is whether these court and beehive structures were fashioned as permanent dwellings by a medieval (or earlier) community, or whether they were always just summer shielings: Williamson tends to

hold the former view but admits that more evidence must be obtained to support his case.

Glen Mor is not in fact an "obvious home" (Williamson 1958:49) for any St. Kildan community even should it be of a pastoral character. The exposure of the glen is north-westerly which lays it open to the coldest winds in this part at any time of the year, and it receives scant protection from the small Cambir peninsula against westerly gales. It possesses no beach, and if boat management was difficult in Village Bay (as indeed it is), it would be doubly so in Glen Bay; in view of this one cannot consider the pasture of Soay to be an asset since it would be practically inaccessible. The geological and physical nature of Glen Mor also causes water to accumulate on the valley floor, which is a distinct disadvantage in view of the amount of shadow that lies over the glen in winter; whatever the weather conditions may be, a full two-thirds of the valley floor receives no sunshine at all from mid-November until mid-February. The inferior supply of building stone (already referred to) would constitute another disadvantage. In aggregate these are factors that would certainly discourage the establishment of permanent settlement in Glen Mor.

Examination of the beehive structures themselves does not conclusively support the theory of permanent occupance. It is difficult to accept the absence of a stout, central chamber in that part of St. Kilda where it would be much needed. One feels that Williamson may have misinterpreted the function of the court and beehive structures with their characteristic horns, for it is difficult to conceive of the sheep being driven into the horned enclosures, since the enclosures never appear to have been high enough to have retained the agile St. Kildan breed. It is perhaps likely that these enclosures were designed simply for penning calves and lambs, so combining the functions of the calf-pen (cro nan laogh) and the lamb-pen (cro nan uain), both of which were features of the shielings in the Hebrides. Thus by penning lambs and calves, the St. Kildans would be certain of keeping the ewes and milking cows within easy reach, milking itself taking place either close to or within the enclosure. Milk was taken from cows and ewes and used for making cheese, the whey being retained for drinking, and it is highly probable that the beehive chambers were used as store-places as well as sleeping-quarters.

The fact that Glen Mor seems to contain about twenty of these structures may also be significant. It might reasonably be

assumed that if these belonged to a community independent of that inhabiting Village Bay, then in early medieval times St. Kilda maintained a population twice as large as that of later centuries, and with a less well-developed resource base to support it; this in fact is unlikely. An alternative point of view notes that the Glen Mor structures are very similar in number to the improved black-houses of the 1830-40 decade, and to the number of cottages that succeeded them: in consequence they may always have existed as summer quarters or shielings for the Village Bay folk. If there is anything in the supposed matriarchal tradition that might be associated with Glen Mor on account of the name "Amazon's House", it could well have come about simply because the shieling work was primarily women's work. In any case, a name of true matriarchal significance would surely be recorded in Norse or Gaelic.

Returning to Village Bay it is useful to examine the ground pattern of buildings and vestiges that may date back to medieval times. These appear to lie mainly along a zone extending from Tobar Childa to the factor's house (Fig. 4); they are thus situated on rising, relatively dry ground, with a good, sunny exposure, and those near Tobar Childa have the advantage of an assured and readily accessible water supply. The best preserved buildings and vestiges do in fact lie about the spring area, but this may only be due to their position outside the village enclosure, where they were protected from modification in the nineteenth century. There are also stone formations around Tobar Childa that appear neither to be natural nor to form part of the later stone enclosures, and in the centre of this locality lies a grassy platform in the shape of a tongue, and covering about 1,000 square yards, which also appears (at least in part) to be of human construction. There is much here to be subjected to archæological inspection. Tobar Childa may well mark the site of the first nucleated settlement on St. Kilda, and from here settlement may have migrated south-eastward to give the village the rough street pattern of which Macaulay wrote in 1764 (Macaulay 1764:42): a move toward cultivable ground could reasonably account for a migration from the rocky locality at Tobar Childa, but it is hard to affirm (without further evidence) that such a move ever did take place; nevertheless the ground evidence of beehive dwellings around Tobar Childa, and the ground and documentary evidence of an "old village" removed from Tobar

Childa, are certainly suggestive of a pronounced geographical change.

Unfortunately the eighteenth century writings and maps are vague concerning the position and lay-out of the "old village". Martin (1698) says little as to the precise location of the village at that time, stating only that it was small and poor, lay a little way from the landing rock (this lay close to the store shown on Fig. 4), and that it was near Tobar Childa; but he does indicate in his map (Martin 1698) that the village ran obliquely uphill somewhere on the northern side of Village Bay. Macaulay (1765:42) describes the village as lying in a regular form with two rows of houses situated a quarter of a mile from the bay; measured from the bay this would place the village at Tobar Childa, but if taken from the landing rock the site would appear to lie in the vicinity of the Dry Burn between the village street (nineteenth century) and the head-dyke (Fig. 4): of the two possibilities the latter is the one which is in keeping with Macaulay's map (1764), although the map itself is inaccurate in many respects. Finally Macculloch presents a map (Seton 1878:70) in which the village clearly seems to lie on the north side of Village Bay just below the broad lip of An Lag Bho'n Tuath. There is thus some measure of agreement between these various accounts and maps as to the site of the "old village" (1400?—1830), but further light can be thrown on the problem by the consideration of field evidence and the adoption of a geographical approach.

Firstly, one may consider the type of building belonging to this period, two examples of which can still be seen on the ground to-day; one stands 30 yards from Tobar Childa, and the other 40 yards N.N.W. of the factor's house, the latter apparently occupying the site of a possible Norse house. These are small and solid, measuring some 10 feet by 7 feet, and having thick walls, a low doorway facing east, and no window (Pl. V, fig. 2); the roof was probably of thatch and beam supports appear to have been collected from the shore or obtained from unseaworthy boats. Between these two houses and lying along a line that runs obliquely and gently uphill from the factor's house to Tobar Childa, there is a significant number of vestiges of circular middens and ash pits; these lie along the edge of a natural embankment which seems to have been followed as a line of movement, and this therefore may be the location of the old village causeway or street (Fig. 4). One further building that may belong to this period lies 40 yards

south-east of the factor's house; it is larger than the other two buildings referred to above and was probably the early wool and feather store.

Secondly, the pattern of cultivation plots and walled enclosures merits examination (Fig. 4). Mapping has revealed a notable concentration of cultivation plots of the lazy-bed type on the strip of land that lies between the factor's house and the beach, and these small plots contrast markedly with the extensive nineteenth century field-strips to the west. Above the factor's house, and again running obliquely uphill toward Tobar Childa, is a scattered but distinctive collection of further small plots of varying size and shape, and it was probably these that Macaulay referred to in 1764, when describing plots ringed with stone and lying "compactly within the precincts of the village" (1764:27 and 30). The distribution of plots thus appears to support the conception of a pre-nineteenth century village straggling obliquely uphill north-westward of the factor's house. The houses were probably concentrated somewhat more to the east where the plots are more numerous, and where they would be nearer to the compactly arranged lazy-beds on the lower infield. The cluster of large, high walled enclosures north of the head-dyke must also be examined in this context (Pl. IV); the existing walls are clearly in the nineteenth century style of building, but the enclosures are probably of earlier date since in several cases they are transected by the regularly aligned head-dyke which was built in the 1830's. Rig patterns and pollen analysis confirm that in some cases at least these enclosures were at one time cultivated, and they may well be pre-nineteenth century cultivation plots that were later walled and used both for growing hay and retaining stock.

Thirdly, if it is supposed that the pre-1830 village lay scattered along a zone between the factor's house and Tobar Childa, what would be the attractions of such a site? It may at once be affirmed that probably the most habitable stretch of land on St. Kilda lies around the factor's house, and from there north-westward for about 300 yards. The chief attraction of this locality is its sunny exposure, whereby it receives more sunshine than any other part of St. Kilda of similar elevation; it is also the most sheltered part of the Village Bay area excepting only the floor of An Lag, for the surrounding hills break the main force of northerly and westerly gales, and the southern shoulder of Oiseval deflects the force of the easterly winds. It

is a relatively dry, well drained area, the flow of water from the hills behind being largely concentrated into the hollow of An Lag, from whence it escapes either underground or along the course of the Dry Burn; waterlogging of the surface soil occurs below this area along and below the line of the "modern village".

There are thus powerful reasons for believing that the "old village" lay somewhat scattered above the line of the later nineteenth century one. There is no reason to suppose that it was in any way enclosed, and with its tiny houses numbering not more than about twenty-five, it must have looked very small and mean (Martin 1698:13). Yet it was this very village that housed the population of St. Kilda when it was at its peak, for Martin believed the total number of persons to be about 180 at the close of the seventeenth century (Martin 1698:99). Man had established himself firmly on the island; his dwellings, although small, were possibly stouter and better finished than those in the Hebrides; and the cultivation of many small plots was an established feature of the economy. Both in the siting of the village and in the orientation of the houses, man showed a sound appreciation of the environmental conditions. Nevertheless it is also clear from the records of the eighteenth century, that life on the island was precarious and very mean. Wintering in the tiny, dark houses where space was shared with the cow, and where rubbish and dung and ash were allowed to accumulate from October until March (Macaulay 1764:42-7), imposed a critical strain on physical health: thus following on the social and agrarian improvements being effected generally in Scotland after 1750, it is not surprising to find St. Kilda the scene of similar improvements during the first half of the nineteenth century.

Some of these improvements were revolutionary in character, and certainly the most imposing was the reconstruction of the village in the 1830's. This work was carried out under the stimulating influence and direction of the Reverend Neil MacKenzie who was minister on the island from 1829 until 1843 (MacKenzie 1911:21-3), and it resulted in the appearance of an entirely new, planned settlement. A remarkable measure of order was introduced into the cultural scene, and still to-day the symmetrical pattern of buildings and field-strips stands out in contrast to the natural litter of rock lying outside the head-dyke.

The village shelf was enclosed for the first time as one unit and established as the infield. The head-dyke which was built

extends for just under one mile, and encloses an area of about 50 acres; it is of dry-stone construction, substantial, and averages 5 to 6 feet in height with considerable stretches still standing intact (Pl. V, fig. 1). Within the enclosure much effort was obviously devoted to the clearing of stones; many of these went to the building of houses, walls and cleits, a huge surplus was disposed of in three large consumption dykes that occupy the centre of the lower infield (Pl. IV), and others still were tipped in heaps on to the beach. The area was organised for settlement on a tripartite basis. A triangle of ground on the east was set apart as the glebe enclosure, in the centre of which the manse, church and school, had previously been erected, 1825-7; it is probable that the excellent dry-stone walls of the glebe enclosures were meant as model examples for the St. Kildan folk. Between the glebe and the Dry Burn little modification took place, for the higher part of this area probably contained the eastern end of the "old village", and the lower part was occupied by cultivation rigs: the dominating feature to-day is the factor's house built in the mid-nineteenth century. Between the Dry Burn and the Amhuinn Mhor the new village was laid out, the houses lying in an open crescent roughly half-way between the head-dyke and the beach (Pl. IV), and being linked by a stone pathway some 6 feet wide that led down to the factor's store east of the manse. The new village alignment constituted a complete break with the past, for the houses now stood regularly spaced and at an elevation of about 90 feet above sea-level; those to the east were the sunniest and most sheltered, those to the west lay most in shadow and were also liable to waterlogging, and those in the centre stood on very stony ground. Possibly for the first time since St. Kilda's pre-history, excavation of earth again became necessary as a preliminary to house construction.

The houses in the new village totalled about thirty in number, and map and ground evidence suggest that none has disappeared since the time of building (1834-6). The houses were of stout, dry-stone construction, their thick walls being infilled with gravel and soil to render them wind-proof; the roofs were composed of turf or thatch laid on wooden beams, and were so finished by bedding them into the house walls as to eliminate eaves and achieve a streamlined form. As a further protection against the wind, the houses lay with their somewhat rounded gable-ends toward the bay and their low doorways facing east. Three types of house are distinguishable as probably

belonging to this particular phase of building. First of all there are eighteen large houses measuring generally about 22 feet by 10 feet; all but one of these had a single, low doorway and a small window set in the eastern wall, and all appear to have contained a cattle-stall at the southern or doorway end of the house; no chimney was provided and the fire seems to have burned in an open hearth against the northern wall. Such houses were essentially slightly improved black-houses. Secondly there are seven houses of a similar type but much smaller, generally about 16 feet by 7 feet, and these lie in close proximity to the larger houses either facing them or set end to end on the landward side. Although they were subsequently used as byres and tool-sheds, their primary purpose was doubtless the housing of single persons and elderly couples. Finally there are five houses, also of a small size, built on to the landward end of large houses; but they are a little puzzling in that while all are oriented eastward, two are in the style of the new houses and three in the pre-1830 style without windows: these latter ones may simply represent a carry-over of the old style of architecture and therefore probably do not rank as genuine pre-1830 building.

In the majority of cases the "1834 houses" thus stood in pairs, but it is interesting that the positioning of the pairs changes along the length of the village street; in the first seven pairs the little house lies to the landward end of the big house, then on to number thirteen the rule is face to face, and thereafter to the western end of the village there is no single rule. These differences cannot with confidence be attributed to the nature of the topography, and it seems possible that they may represent changes in fashion at different stages in the construction of the new village. Associated closely with the houses, sometimes behind them and in other cases alongside, lay small, walled, cabbage gardens, tiny fuel huts, and pit middens of circular shape: clustered in concentration around the houses, these features emphasised the regular, crescentic form of the new village. Further order was added to the scene by the division of the infield into field-strips; averaging about 25 yards in width these ran up from the beach to the head-dyke, were demarcated by low walls of stone and turf, and totalled about eighteen in number (Fig. 4). Houses and holdings thus seem to confirm that at this time there were eighteen households upon the island, with perhaps about twenty single or old folk in addition.

There are just over one hundred cleits within the village enclosure, and their condition suggests that they too were built or rebuilt about this time. Their distribution seems to be clearly related to the availability of stone, although other factors such as the value of land and the movement of daily traffic would also be of some account. A concentration of about forty cleits in the steep north-eastern part of the infield occurs where stone is abundant, and following the line of the "old village" both within and without the head-dyke, it is likely that many of these cleits are occupying the sites of earlier cleits and houses. A further thirty-five cleits are clustered within the morainic tongue in the centre of the village where stone was again readily available, and it is only in this locality that a group of cleits is found below the line of the village; here they lie in close proximity to the three consumption dykes previously mentioned.

Perhaps the final part in the reconstruction of the village was the walling of the enclosures that lie beyond the head-dyke. It has already been suggested that these might have been tillage plots belonging to the "old village", and at least half of them appear to antedate the head-dyke itself. Their size varies between one quarter and one sixteenth of an acre, but in all cases the walls are substantial and high, and are constructed with a sheer inner face with the presumable intent of effectively retaining livestock; this would imply that about this time their function became pastoral instead of agricultural. Walls, houses, cleits and field-strips, all are representative of a period of reorganisation and unusual activity, the improvements thus made and the pattern established being due very largely to the vision and the drive of the Rev. Neil MacKenzie. In the space available and in the conditions then prevailing, it is difficult to conceive a better or more artistic village plan.

From 1830 onwards increasing attention was focused on St. Kilda, and throughout the Victorian period measures were taken repeatedly to improve the lot of the tiny community. Thus the improved houses of MacKenzie's village had stood for only twenty-seven years, when they were replaced (1861-2) by sixteen new cottages of the traditional Scottish "but and ben" type (Seton 1878:107-14); these were sited along the main street, but in every other respect they departed from St. Kildan custom. Stone-built and cemented, they were rectangular in shape, sharply angled, had ridged roofs of zinc later to be covered with felt and tar, and faced directly

out toward the bay; orientation and style accordingly combined to make them very vulnerable to easterly and southerly gales, and the roofs subsequently had to be lashed to the masonry with wires and iron staples. The central doorway channelled draughts into both rooms of the house, these being already aired by the two gable-end chimneys for which little fuel was ever available. In every case a considerable amount of excavation was necessary to level sites for these houses, and in fourteen cases the walled cabbage garden was reduced in size to make way for the new house. Measuring 33 feet by 15 feet, these "1862 cottages" gave the St. Kildans roomier and more hygienic houses than they had ever previously known, but it is doubtful whether they were in every respect more comfortable than the improved black-houses. The new cottages could only be built and maintained with outside aid, and their appearance marked the beginning of a distinct and ever increasing tendency on the part of the St. Kildans to rely upon outside help. In this connection it will be noted that sixteen houses were a considerable decrease from the total of thirty in Neil MacKenzie's time, and between 1841 and 1861 the population did in fact fall from about 105 to 78 (Seton 1878:143).

The resource base of the St. Kildans was at all times meagre and limited, and the effective use of it varied from generation to generation depending upon the moral and numerical strength of the community. Land use and work activity probably reached a peak in the decade 1840-50 when the population just exceeded 100, and the community also seems to have thriven in Martin's time when it numbered about 180: depressions occurred when the island was ravaged by smallpox in 1724 (Seton 1878:48) and when thirty-six people emigrated in 1856 (Seton 1878:144). To face the truth, however, whatever the strength of the community, the wonder is that it continued to survive for centuries on an island so small and weather-beaten; that it did so was due in part to periodic immigration from Lewis, and also to the unique economy developed by the St. Kildans in which the trapping of seabirds played a major part.[5]

Farming seems to have been an important aspect of St. Kildan life throughout historic time, the emphasis as a whole being upon pastoral activity. In the eighteenth and nineteenth centuries St. Kilda carried a flock of some 700 to 800 sheep, and Soay and Boreray several hundred more (St. Kildans concealed the precise numbers in order to reduce their dues

to the proprietor), and these animals provided the community with mutton, milk, pelts and wool: the number of cattle (mainly cows) fell from 90 in 1697, to about 40 in Macaulay's time, and remained at that number until the middle of the nineteenth century; cows were the most prized of all animals on account of their production of calves, milk, meat and hides. Ponies, of which there were 18 in 1697, were employed to carry fuel and hay, but they were scarcely used by 1841 (Seton 1878:128) when there were only 3 on the island. Stock management was ever a primitive business, and the sheep were virtually left to run wild except at lambing and shearing time in the spring, and at killing time in the autumn. The cows were much more carefully tended, being kept indoors in the winter, herded in Glen Mor in the summer, and permitted to graze the infield area in autumn after harvest; in fact, remembering that the St. Kildans were as much hunters as farmers, the cow held quite a privileged position, and not the least reason for this was the supreme value of cow-hide for making climbing ropes (Martin 1698:105). The scarcity of winter feed was of course a critical handicap which made the rearing of beef cattle (in addition to cows) impossible, but while the cows grew very lean and weak in the winter (Martin 1698:112) they thrived quickly during the summer, achieving standards above the Hebridean average (Macaulay 1764:29). The maximum livestock that could be maintained on St. Kilda by St. Kildan standards probably totalled about 50 cows and 1,000 sheep, or some equivalent combination of these; and Seton (1878:129) does in fact indicate that the entitlement granted by the proprietors of the island was 1,200 sheep and 50 head of cattle.

The growing of crops was a hazardous business yielding little profit: the weather was all against it, the amount of space available was very limited, and the people had scant knowledge of land management. The importance of manuring the ground was understood, however, and each winter's accumulation of dirt, rubbish, ash and dung, was cleared out of the houses and midden pits in spring and spread on the land (Macaulay 1764: 34). But there is no evidence of sheep being folded on the land, nor was seaweed available as a fertiliser on account of the lack of shallow water around the shores of the island. Estimates of the extent of cultivated land vary widely from time to time, and in the main seem to be too large. Until about 1835 cultivation was carried on in small plots lying about the village, on the rigs below the village where run-rig prevailed, and on

various favourable patches of enclosed land around the perimeter of the village shelf. Organised thus, it is very unlikely that the cultivated area exceeded 20 acres, although 80 is the figure quoted by Macaulay in 1764. After the construction of the head-dyke, all the infield east of the Amhuinn Mhor might be regarded as having been arable, but since the steeper, upper half of the infield (15 acres) was probably used mainly for hay growing, the maximum crop acreage could not have exceeded 30 acres; in this respect it is interesting to note that Seton gives a total arable figure of 40 acres in 1877, i.e. about forty-five years later when the community was in decline. Barley and oats were the only crops ever to be grown in quantity, and of these two, barley was the more favoured, probably on account of its ability to grow and ripen fast in the months of May, June and July: according to Martin (1698:28) and Macaulay (1764:38) the barley was much better than any in the Hebrides, a condition that might be attributed primarily to the availability of soil on St. Kilda. Nevertheless the St. Kildans seem to have been disinclined to place any reliance upon crop cultivation (and understandably so); they did bake and consume barley-cake and oat-bread, but neither featured in their diet to the same extent as mutton, eggs and sea-birds, and whereas in Macaulay's time (1764:38) they might export some 5 tons of barley to Lewis annually, by the mid-nineteenth century it appears that the amount of corn being grown was quite inadequate for the needs of the community (Seton 1878:99-100). The other crops grown were cabbages and potatoes, the former in very small quantity and the latter not with success, and these were produced within walled plots close to the houses, and in the case of potatoes also farther afield in isolated enclosures. The inadequacy of St. Kildan agricultural produce made itself evident in several ways; unbalanced feeding undoubtedly contributed to the terribly high rate of infant mortality (Seton 1878:216), several records speak of dire shortage of food in the months of February and March, and after 1850 the chief imports of the island were oatmeal, salt and potatoes.

The other forms of food on which the St. Kildans relied were of course mainly the flesh and eggs of sea-birds, the thorough way in which they exploited this source of provender contrasting markedly with their rather ineffective farming. The sea-bird of greatest importance was the fulmar, which supplied the St. Kildans with meat, feathers and oil, but

gannets and puffins were also taken, the former from the neighbouring stacks and the latter in huge numbers from the cliffs of St. Kilda. In 1697 Martin estimated that 100,000 puffins and 25,000 gannets were taken annually (Martin 1698:106 and 115), and one may deduce from the St. Kildan diet that at least 30,000 fulmars were caught each year: puffin and gannet eggs too were collected in huge numbers, and the fact that the community could so prey on the island's bird life year after year is indicative of several important conditions. The St. Kildan group of islands houses an enormous bird population which the St. Kildans hunted with great skill and daring, and although the vast number of birds present rendered any system of conservation unnecessary, it is worth remarking that the St. Kildans' quiet and deceptive methods of hunting in no way frightened the birds from their traditional haunts (Kearton 1897:80-120). Puffins, gannets and fulmars were hunted as soon as they returned to St. Kilda in the months of March, April and May; when these birds began to lay, efforts were then directed to the collecting of eggs, and at such time (approximately mid-May until the end of June) the gannets and fulmars were not molested. Fulmar eggs were not taken on account of their undesirable flavour, and this certainly helped to maintain the numbers of the St. Kildans' most valued sea-bird, especially too, since the fulmar lays only one egg: on the other hand, however, large numbers of young gannets and fulmars were taken in August before they could leave the nest, the young gannets being prized for their flesh and feathers, and the fulmars for their flesh and oil. It is interesting to note, that by taking eggs systematically from the gannet and puffin, the St. Kildans were able to delay the departure of a proportion of these birds and so prolong the fowling season (Martin 1698:41-2). The eggs and flesh of the various birds were kept in great quantities as provision for the winter months, both being stored in cleits, and a small proportion of the carcasses also being salted and kept in casks; the latter method was unusual, however, the restricted supply of salt being more profitably used for preserving mutton. Feathers and fulmar oil ranked as the island's two chief exports, something of the order of 400 gallons of oil being sent out annually after about 1830 (Sands 1878:59).

The waters around St. Kilda abound with fish which of course provide food for the teeming numbers of gannet, puffin and guillemot, but the St. Kildans never seem to have

exploited this resource as they did the sea-birds. There would appear to be a number of reasons for this: boats and fishing equipment required to be imported, bait was scarce upon the island due to the small intertidal area, and sailing in such exposed waters was undoubtedly a hazardous business, and was rendered even more so by the difficulty of embarking and disembarking in heavy surf. The St. Kildans were not boat-builders, and it is significant that no mention occurs anywhere of boat maintenance; in fact Macculloch observed in 1819 that the one boat on the island was being left to rot, and toward the end of the nineteenth century, Connell and Heathcote each remarked separately upon the ineptitude of the men as boatmen and fishermen. Contrary to this view, however, it must be allowed that the St. Kildans handled their boats with skill when landing on Soay and the isolated rock stacks (Macaulay 1764:188-91), and in 1875 it is recorded that fish accounted for 12 per cent of the value of St. Kildan exports (Sands 1878:59). There would thus appear to be some truth in the assertion by Kearton that the St. Kildans regarded fish as being tasteless and therefore in their view valueless: boats would be utilised primarily as a means of gaining access to the cliffs of neighbouring islands, and fishing seems to have become important only in the nineteenth century, when the export of dried and salted fish was necessary to help pay for a growing volume and variety of imports.

The business of providing clothing and warmth occupied a large part of the islanders' time. Using the coarse wool that was plucked crudely from the cross-bred sheep on the main island, the women in the community carried out the cleaning, combing and spinning, whilst the men did the weaving and tailoring; the products of the coarse tweed (blankets and rough clothes) were unattractive and inevitably of a grey or black hue, since the people lacked any skilled knowledge of dyeing. The men spent long hours at this work during the months from November to February, and as time advanced even more labour was given to it, for during the latter half of the nineteenth century blankets and tweed became together a more valuable export than either feathers or fulmar oil; in the eighteenth century tweed did not figure at all in the trade of the island. St. Kildan shoes in the case of the men were crudely made from leather, and until the nineteenth century the women commonly had to make do with the neck-skins of gannets (Martin 1698:110-11), but in the main the islanders went

about barefooted, resorting to foot covering only when the weather was bad and when snow lay on the ground. For fuel, the St. Kildans relied basically upon "turf", which meant sods of grass or heather cut from the hill-sides (Macaulay 1764:44; Mathieson 1928:78-9). Peat does exist upon the island (Petch 1933:96) and it is difficult to understand why the people did not use it, for with the advantage of cleits for storage, there would have been no more difficulty about drying than on the Hebrides, probably less. Turfs were cut from Mullach Mor to Mullach Sgar and on the slopes of Conachair and Oiseval, and were stored in cleits in elevated, windswept positions where the process of drying was relatively quick; this entailed considerable hardship for the women, however, whose task it was to carry fuel to the village, and often through the mire and snow of winter when the demand was greatest. Turf was unsatisfactory as a fuel since it would only smoulder, and as a result St. Kildan cooking involved a process of perpetual stewing in a single, large pot, and in winter the houses could never be kept properly dry, but only (with the aid of the cow's presence) warmly damp. Turf cutting was unwise too, in that it impoverished the land and reduced the value and extent of natural pasture; even to-day the consequences are evident on the western flank of Oiseval, where the rain washes directly downhill across extensive patches of gravel and rock, which would never have been exposed but for turf-cutting. Admittedly it is questionable whether the island's limited peat resources would have sufficed for all generations of St. Kildans, but it was in their exclusive dependence upon turf that the fault lay.

In assessing the manner in which the people of St. Kilda utilised the resources at their disposal, the verdict must surely be of a mixed character. Their agriculture might have been more efficient, but the climate was greatly against them, only in the lower infield did the soil offer any real promise, and being poor and remote they were badly placed to receive supplies of seed. They seem to have been efficient in their time in the management of cattle, the wonder being that their beasts survived the winter at all, but there is little doubt that with some care they could have improved the quality of their sheep and of the wool that they yielded; shelter in winter, care at lambing, and wool shearing instead of primitive plucking and cutting, would all seem to have been possible improvements. The ring of green turf now surrounding each cleit, a direct

result of fertilisation by sheep seeking shelter from the elements, bears clear witness to the fertility that sheep-folding could have produced in the infield area; St. Kildan records nowhere indicate that this was ever done, although the cattle were pastured there in spring and autumn.

If the St. Kildans were only moderate farmers and rather poor fishers, they were on the other hand remarkably skilled in wild-fowling.[6] Their dependence upon sea-birds is one of the most fascinating aspects of the St. Kildan economy, and it is on this very account that the community may be judged to have ranked as unique; in addition, the skill and daring with which the St. Kildan men-folk scaled the great cliffs of the St. Kildan group of islands brought them tributes of respect from the time of Martin until that of Cockburn (1697-1927), thus conferring a special distinction upon the island and its inhabitants.

It may well be argued that operations on the cliffs were time consuming and that it would have paid the people better to give more time to farming and fishing, but against this it must be recalled that the yields from farming and fishing were bound to be uncertain, and that particular psychological factors were also influential in moulding the people's way of life. On an island such as this time was reckoned in terms of seasons, not in days and hours and minutes; when food or fuel was in short supply, then action was urgent and imperative, but when supplies were adequate, the community lived at whatever pace suited its inclination. Such a tempo was in accord with a hunter's life much more than a farmer's, with the further condition that the excitement of the hunt urged men on to the maximum effort, and brought about achievements that were the basis of gossip and tradition. A similar attitude made itself evident when the sheep were plucked in June and slaughtered selectively in October; great excitement then prevailed, and having virtually ignored the animals for several months, the whole community then turned out to take part in the rush and tumble and fun of herding! To the St. Kildans therefore the reasons for concentrating upon the sea-birds were probably obvious; the birds were there, the supply was assured, they were relatively easily caught with fowling-rods and noose snares, and skill as a cragsman and the respect thus commanded were the peaks of St. Kildan ambition (Martin 1698:107).

The houses of the St. Kildans were at any time probably

quite as good as those of the folk in the Hebrides, and after 1862 certainly better. Lack of timber was the chief handicap, but in spite of this the native houses (pre-1834 and 1834 styles) were of admirably stout construction, were wisely oriented, and were effectively proofed against the weather. On the other hand, the refusal to copy the Hebridean use of peat is difficult to understand; certainly turf was available close to the village, whereas the peat-moss lay three-quarters of a mile away at an elevation of 1,000 feet, but the better fuel would have done much to cheer and ease the long, damp winter. Similarly no effort seems to have been made to introduce comfort into the houses; feathers were scattered everywhere but there is no mention anywhere of feather mattresses or quilts, nor were sheep-skins or seal-skins ever used as floor coverings. Standards of sanitation and personal hygiene were very low indeed—Macaulay writes of the offensive smell of the St. Kildans, and Neil MacKenzie insisted on measures that would reduce the fouling of the village area—and one can only conclude that adult St. Kildans developed a natural resistance to cold, damp, dirt and bad ventilation. Criticism must be levelled too at the St. Kildan diet, which showed a marked and critical lack of balance: the emphasis lay upon the consumption of the flesh and eggs of sea-birds, other available foods such as barley, mutton, milk, cheese and fish, featuring less in the daily diet than might have been the case; whether the people would have paid more attention to the provision of these items if they had been less heavily taxed (Macaulay 1764:40-1; Seton 1878:139-41) is a debatable point, but at least the dependence upon sea-birds constituted an assurance against want and starvation, and it is interesting to note that references to critical food shortage appear mainly after 1860, when the life and economy of the island were clearly failing. The most dreadful feature of life on St. Kilda was the "eight-day sickness" which afflicted babies fatally eight days or so after birth, and which produced an appalling rate of infant mortality; Seton (1878:216) quotes a figure of 67 per cent taken from a count involving 125 children, but in individual families the rate might be as high as 80 per cent. The possible causes of this infant malady were inquired into by a number of persons after 1850 (Seton 1878:219-28), and comparison with other islands strongly suggested that the root cause lay in the unbalanced diet of the St. Kildan mothers. In all other respects, however, the St. Kildans seem to have been perfectly healthy,

various writers making note of their good appearance and strong physique (e.g. Macaulay 1764:210-12).

If anything is to be selected as symbolic of the St. Kildan community, it must surely be that peculiar structure—the cleit (Pl. I, fig. 2). Cleits are narrow, elongated buildings composed of stone slabs upon which rests a roof of turf. The stones forming the walls overlap each other so that the interior narrows gradually toward the roof; the roof may lie 4 to 6 feet above the ground, and consists first of massive stone lintels on top of which lies a smooth, humped mass of earth and turf; stakes up to 18 inches long are driven into the turf to hold it in position, but through time these became superfluous since the live growth of the turf on the roof binds it into one whole. The walls of the cleit are of dry-stone construction with no infilling whatever, so that while moisture is excluded by the slanting overlap of the stones, air penetrates freely through the gaps between them. Cleits vary considerably in size, for some in the village enclosure measure up to 24 feet long, whereas others on the steep face of Conachair and elsewhere are but a third of this size. They are invariably built in line with the direction of slope, not across it, the buttressing of a narrow end being more easily and securely achieved than that of a whole side. For strength as well as dryness the single, low doorway was frequently set in the end facing into the hill-side, but cleits built on gentle or more moderate slopes often had the doorway placed in one side of the structure: of the hundred odd cleits within the village enclosure, there are only two whose doorways face downhill toward the sea; one is built within an enclosure wall and the other is a modified medieval dwelling. Cleits are found not only in the Village Bay area where the greatest concentration occurs, but generally speaking all over the island; there are many on the slopes of Oiseval and Conachair and a fairly continuous string lies along the ridge of Mullach Geal, while others are distributed less densely along the high, indented crest-line from Ruaival to the Cambir. The cleit was vital to the St. Kildan as the store-chamber of the necessities of life, turf, birds, feathers, eggs and hay all being placed in them for the winter (Macculloch 1819:27-8): airy, cold and dry, there is no doubt that in the cleit the islanders devised a structure that exploited the winds and countered the rain of St. Kilda.

It is possible to gather very different impressions of St. Kildan life from various accounts, depending both upon the

time at which they were written and the outlook of the individual authors, but it is particularly desirable that the St. Kildan community should not be judged by the several reports that were made (mostly with missionary zeal) during the last twenty years of the nineteenth century. At that time the community had reached a low ebb of activity, and reports of poverty, laziness and unhappiness were probably well founded. A fair opinion of the St. Kildan people requires full consideration of the geographical setting, and of the documentary evidence applicable to the period 1698-1878; the verdict then might be, that these people lived with a surprising measure of contentment and harmony in face of poverty and restriction, that they worked industriously at times but were dependent upon outside influence and example, and that they established a seasonal rhythm that seemed to accommodate, fairly successfully, both the dictates of the climate and the inclinations of their hearts. Opposite, an attempt has been made to sketch the outline of the St. Kildan calendar, and from this it is obvious that there was indeed a marked seasonal rhythm: the four winter months from November until February, inclusive, may be balanced against the summer season from May until August; and between these major seasons lay a short, chill spring in March and April, and an invariably tempestuous autumn in September and October. There were no attractions about life on St. Kilda in the winter; storms beset the island for the greater part of the time and the people lived in a state approximating to hibernation; excursions into the open were made mainly by the women for the purpose of fetching water, fuel, and other supplies from the cleits, but the men seem to have kept closely indoors where they engaged in weaving and tailoring. The month of March was a landmark in the calendar, for the simultaneous arrival of better weather and flights of puffins and gannets signalled the start of fowling operations, and no time was lost in bringing in fresh supplies of meat: April witnessed a further increase in activity as the cattle were moved out-of-doors to graze the infield, the houses cleared of refuse, and turf-cutting begun on the hill-sides. Through the summer the people were variously engaged in farming, fowling, fishing, turf-cutting, and the preparation of food (e.g. cheese) for the winter: May was a particularly busy month since the crops were then sown, the cattle moved to the shieling in Glen Mor, and egg-collecting begun; but the peak of activity seems to have occurred in the latter half of August and the first half

of September: the much prized young fulmars and gannets were ready for catching, the harvest of crops and hay had to be cut and stored quickly, and to gather the maximum labour force into the village, the shieling had to be evacuated. Thereafter and on into October, the final preparations were made for

St. Kildan Calendar

Nov. .	. Spinning and Weaving.	Turf carrying.		
Dec. .	. Spinning and Weaving.	Turf carrying.		
Jan. .	. Spinning and Weaving.	Turf carrying.		
Feb. .	. Weaving.	Turf carrying.	Food scarce.	
Mar.	. Cattle infield.	Turf scarce.	Razorbills. Puffins.	
Apr.	. Cattle outfield. Prepare land.	Turf cutting.	Gannets. Puffins.	Prepare boat.
May .	. Prepare land. Sow crops. Cattle to Shieling.	Turf cutting.	Fulmars. Gannets. Puffins. Eggs.	Strip old thatch for manure.
June .	. Cattle to Shieling. Ewes at Shieling.	Turf cutting.	Puffins. Eggs. Sheep clip and killing.	Fishing. Fish curing.
July .	. Cattle at Shieling. Ewes at Shieling.	Turf cutting.	Puffins.	Fishing. Fish curing.
Aug. .	. Return from Shieling. Harvesting.	Turf cutting.	Young Fulmars. Puffins.	Fishing. Fish curing.
Sept.	. Hay-making. Feather storing.	Dry corn.	Young Fulmars. Young Gannets.	Building repairs.
Oct. .	. Cattle infield. Wool preparation.	Grind corn.	Young Gannets. Sheep killing.	Thatching repairs. Lay up boat.

the winter; corn was dried and ground, sheep selected and slaughtered, feathers plucked from the young birds caught just previously, and buildings proofed against the weather.

The provision of basic needs, food, clothing and shelter, was thus the prime concern of all St. Kildans, year in and year out, and they lived in the knowledge that any part of the

provisioning process was liable to be disrupted by the advent of bad weather. It would be wrong, however, to regard the St. Kildans as having been oppressed by a concern for things material; the "misery" associated with material shortages (Wilson 1842:80) was something that came and went with the seasons, but the continuing unhappy state of the people in the latter decades of the nineteenth century arose more from the bigoted impositions of the Free Church missionary than from material want. The writings of Martin (1698:122-3) and Macaulay (1764:216-17) indicate that life on St. Kilda in the eighteenth century had a greater measure of freedom and natural happiness; music and dancing were enjoyed with much enthusiasm, singing and rhyming accompanied spinning and harvesting, and shinty was played with "great pleasure" upon the sand at low tide: the decay of these arts and the disappearance of this buoyant spirit were two of the several changes brought about by closer contacts with the mainland.

At the close of the seventeenth century, Martin estimated the population of St. Kilda at 180 persons: the community traded mainly in feathers, but its possessions included 18 horses and 90 cows, and although the houses were tiny and the people very poor, yet the community struck Martin as being hospitable and vigorous. By 1840 the population had dropped to about 110 persons, but as has already been indicated, the resources of the island were probably better organised than at any other time in its history, and in return for feathers, oil, cheese, barley and cloth (Seton 1878:132), the islanders received sugar, tea, tobacco, and wooden and metal goods; as a community they were still vigorous and self-reliant. By the 1880's, however, the position was very much changed, for the population had fallen below 70, the area under cultivation was rapidly declining, gifted boats were largely unused, and the people were fast becoming dependent upon a substantial measure of charity: the sequel to this sad decline was the evacuation of the population (numbering only 43) in 1930. The reasons leading to the decline and extinction of the St. Kildan community, were essentially similar to those that have operated elsewhere in the world against lonely, primitive subsistence groups. The St. Kildans of Neil MacKenzie's time had come to terms with their environment, but closer contact with the Scottish mainland produced fatal changes in the outlook and structure of the community.

Basically St. Kilda and the adjacent islands were managed

as a tiny commonwealth, and although this did not mean that there was an equal division of wealth between the people, they certainly seem to have been strongly motivated by socialist principles: lands and other properties were shared by the community, and when the village was replanned in the 1830's, care was taken to lay out field-strips of equal size. On the other hand, Martin and Macaulay make it quite clear that the people ranked differently in regard to the possession of both land and goods: possession of land was the key factor, for upon this was based a share of the fowling rocks (Macaulay 1764:147), a space in the boat (Martin 1698:115), a share of the birds killed on the stacks (Martin 1698:41), and even an allocation of cleits upon the main island; Macaulay (1764:125) also writes of the St. Kildans as being divided into three classes according to the number of cattle held, a ranking that would again relate directly to the area of land possessed. There can be no certainty as to how the lands came to be owned unequally, but there is just a hint from Martin (1698:28) that it came about in time through hereditary succession, assisted too by fluctuations in population. It would be unwise, however, to attach much significance to differences in land-ownership; no specific mention is made of acreages, and it is difficult to see how marked inequalities could have survived the procedure of reallocating lands every three years (Martin 1698:96). There is, however, plenty of evidence to support the claim that St. Kilda was managed on commonwealth lines; the shieling grazings and the sea-stacks were treated as common property, as were also the corn-kiln, boats and climbing ropes (Martin 1698:102-15); except for buildings belonging to the church and the factor, all dwellings, cleits and walls were built to standard patterns; and activities such as sheep-shearing, harvesting and gannet-hunting were treated as group enterprises. Whenever necessary, which might be every day of the week except for Sunday, the men-folk met together to discuss and decide upon the programme of work (Macaulay 1764:149; Mathieson 1928:79), but this provided no assurance whatever that work would be carried out expeditiously; Mathieson (1928:79) remarks that discussion was liable to continue throughout the entire morning, and MacKenzie (1911:8-10) was from time to time discouraged by the "lack of thoroughness" of these "everlasting talkers"—the men! From all accounts it appears that the St. Kildan women were much the more industrious sex, since, in addition to their domestic

duties, they tended and milked the cows and the ewes, assisted in sheep-driving, engaged in spinning, hay-making and corn-grinding, and were the bearers of turf and water; they frequently engaged in puffin-snaring on St. Kilda in the summer, and periodically some of them would accompany the men to Soay or Boreray to help gather sea-birds' eggs. Work that belonged more exclusively to the men included cultivation, sheep-shearing, fulmar and gannet fowling, turf-cutting, thatching, building, weaving and tailoring. Environment and the economy of the community had much to do with this division of work between the sexes: climbing, fowling, sheep-shearing and building were operations that required a man's physical strength, whereas the bearing of heavy loads of turf and water was a task which better suited the female physique; it was convenient too, that the women should be primarily responsible for the work at the shieling in the summer, since the men were thus free to depart on fowling and fishing excursions whenever season, weather and tide were favourable. Inevitably therefore the tendency was for the routine tasks to fall to the women, and thus it may have come about that they gained a reputation for diligence, which contrasted with that of the men for dilatoriness.

Organised in this fashion and living in the harsh environment of St. Kilda, the community could only continue to exist as an independent group while certain conditions prevailed. Numbers and physical vigour were first essentials: as long as the population exceeded 100 it was possible to carry on a full round of activities, and various parties could all be engaged separately and at once hunting gannets on Borera, catching puffins on St. Kilda, cutting turfs on Oiseval, and digging ground in the village enclosure. It is obvious that these activities required fit and able men, and as soon as the population fell in numbers, the availability of teams of able men was reduced; inevitably therefore the tempo of life slackened and productivity declined. A population of 110, which seems to have been the approximate number between 1800 and 1850 (Seton 1878:143), gave a male working force of about 25 persons; but a drop to 70 as in 1871 reduced the male working strength to only just over a dozen[7]: thus the plague of smallpox in 1724 and the emigration of 36 people in 1856 seriously depleted the little island force, and although immigration from the Hebrides brought recovery from the smallpox losses, the 1856 emigration was a fatal blow. Another condition attached

to life on St. Kilda was that the community should work steadily as well as vigorously, and in a fashion suited to the environmental conditions, and it is evident that a lead in such matters could be of great assistance. Neil MacKenzie obviously gave the St. Kildans a superb lead and was able not only to direct their efforts, but was probably the means of stimulating them to make such efforts: left to themselves they evidently tended to procrastinate and dally (MacKenzie 1911:8 and 22), taking advantage of fine weather to enjoy the pleasure and interest of a social gathering. There were occasions, however, when the St. Kildans were saddled with ministers of the Church who failed to understand either the nature of the island or the problems of the people, and thus in 1887 a point was reached when holy worship during the week interfered seriously with daily work. It was about this time in the late nineteenth century that the folk of St. Kilda greatly needed wise counsel and experienced encouragement, since they were then being subjected to various pressures applied in different ways from the outside world. Through trade they had begun to taste of the luxuries outside St. Kilda, and some through travel and all by report had learned of the comforts and opportunities offered by life on the mainland: at the same time visitors to the island adopted the habit of making gifts to the islanders, and invariably took back to Scotland dreadful reports of St. Kildan poverty. Accordingly from about 1860 onwards, relief measures were taken quite frequently either by the Government, the Church, or by individuals, which were at first confusing to the St. Kildans, and which latterly quite undermined their moral and economic viability. In the giving of gifts and in the application of relief measures, it does not seem to have been realised that the recipients had in fact little sense of property and small knowledge of economic workings outside their little island. Thus it was on a number of counts that the community of St. Kilda lost its self-reliance, and in due course thereafter its identity.

The question that finally springs to mind, is whether the St. Kildan community could have survived into this present age? As a community the answer must surely be "No", unless the community was prepared to accept a very low standard of living indeed. It is doubtful whether even a small group of healthy persons could to-day live independently on St. Kilda, always supposing too, that they were prepared to live a simple, hard and isolated life, foregoing the social advantages and

material comforts of modern civilisation. The availability of perhaps 25 acres of arable land, and about 1,000 acres of rough grazing, provides the basis for a mixed stock farm, in which case an income could be expected from the sale of cattle, sheep and wool; but considering the poor prices currently payable to mainland crofters, and remembering the difficulty of wintering stock and the different aspects of the transport problem, it is certain that the income obtained would be wholly inadequate to meet the costs of maintenance and equipment. Life could only be rated as existence—and a very lonely existence at that. St. Kilda, which required that man should develop a unique economy for his survival, more than ever asserts its lonely independence, and will accept modern man only so long as he can maintain himself by contact with foreign sources of supply. Realising this to be the case, and viewing the appalling cliffs upon which the St. Kildans were so dependent, one cannot but be struck with admiration for the generations of men and women who, defying the elements, lived and worked on this isolated, rocky outpost in the deeps of the Atlantic.

The grip of St. Kilda on human emotions might not be so great, but for the traces of human occupance that meet the eye upon the island. The neat little crescent of houses, the homely cluster of church buildings, and the scatter of cleits through the infield and away up on to the sweeping hill slopes—all these fire one with a longing to see the St. Kildans back home again upon their island. Such a wish has a happy quality about it, perhaps simply because it is essentially of a romantic nature, but it is important that one should try to see things in the true light of reality; the poverty of the people, their primitive ignorance, and their helplessness in the face of illness and death —all these were St. Kilda too!

Surely then it is better to accept the march of events. When we remember these hardy, simple, island folk, let us remember them at their best, picturing them upon the cliffs, at work upon the cleits which stand in memory of them, and wending their way along the village street to the tiny church where they gathered as a community in simple faith and fellowship.

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NOTES

[1] The references given at the end of this article are selective and in no wise form a complete bibliography of St. Kilda.

[2] After c. 1900 trawlers called periodically to shelter in Village Bay, sometimes bringing mail and often leaving small loads of coal.

[3] It is notable that it was unnecessary to exaggerate the vertical scale when constructing Fig. 3. This is unusual and is directly attributable to the height and steepness of the hills of St. Kilda.

[4] The term "Village Bay" is commonly used in two different senses: it applies strictly to the actual bay itself, but it has also come to be used to describe the shelf of land which stretches up from the shore, and upon which was sited the village of St. Kilda.

[5] References relating to St. Kildan work and equipment are too numerous to give in full, without ruining the continuity of the text. The majority of the evidence has been gathered from the accounts of Macaulay, MacKenzie, Martin and Seton.

[6] Many people have doubted whether the St. Kildans succeeded in killing tens of thousands of sea-birds annually: MacKenzie (1911:48) queried Martin's figures (1698:106 and 115). Thus it is worth noting that in Kearton's time (1897:81), Angus Gillies took 620 puffins in the course of one day with only a fowling-rod!

[7] The number of males on St. Kilda was consistently less than the number of females; the reasons for this were a higher accident rate and a lesser measure of longevity. Thus the male working strength was always less than the total population figure would suggest.

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ILLUSTRATIONS

Maps by the author and Miss Margaret Bodie; photographs by the author, except for Plate I, fig. 2 and Plate IV, which are by Ian Whitaker, May 1957.

EDITOR'S NOTE

This is the first of two articles arising from the School of Scottish Studies expedition to St. Kilda in 1957, financed by the Russell Trust on behalf of the National Trust for Scotland. In Part 2 (October 1960) of this volume Professor Ian Whitaker will deal with ethnographical aspects of St. Kildan life.