

Small Area Study

Bernice Sanzoro

December 1968 - April 1970

Small Area Study

Bernice Sanzovo

December 1968 — April 1970

Contents

	<u>Pages,</u>
Illustrations list	3-5.
Introduction	7-10
Geology	11-47
Relief and Drainage	48-65.
History and Industry	66-85.
Agriculture	86-112
Urban Geography	113-123
Social Geography	124-131
Summary	132-134
Appendix	135-142
Acknowledgements	143-145.
Sample I	146.

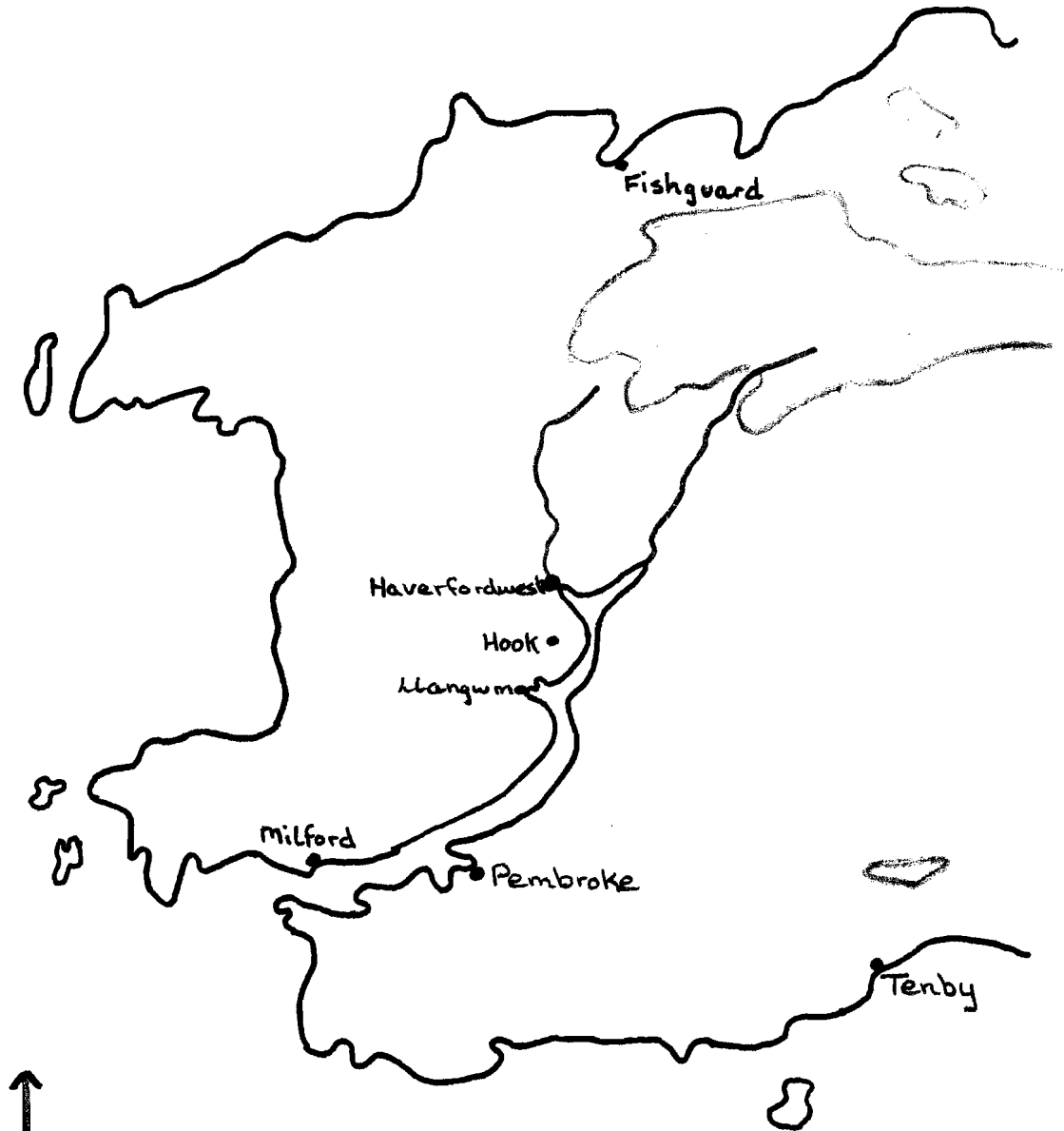
Illustrations

	<u>Page.</u>
Map 1 Sketch map to show position of Hook + Mangum.	6
Map 2 Map to show Geology of the area	14
Fig 1. Sketch of the action of the sea on Old Red Sandstone	17
Photo 1. Outcrop of old Red Sandstone	19
Photo 2. One use of old Red Sandstone	21
Fig 2. Sketch of a landslip at point 005/025	23.
Photo 3. An outcrop of Sandstone	26
Photo 4. Thin layers of Sandstone.	28.
Fig 3 Sketch of caves at point 999/095	30.
Fig 4 Sketch to show study of strata	32.
Photo 5. Weaknesses in the Sandstone crop	35
Fig 5. Sketch at point 988/122, to show stratification of rocks.	38.
Fig 6 Sketch to show rocks at point 996/107	40
Photo 6. Landslip	42
Fig 7 Sketch to show outcrops of extrusive rocks.	44.
Photo 7. Use of local rock — millstone grit.	46
Map 3. Relief and Drainage	48
Map 4. Map to show Guilford Stream.	52
Fig 8. A section across a "V" shaped valley	53
Fig 9. A section of Guilford stream after being joined by a subsidiary stream	55
Map 5. Map of Newton Mountain	57
Fig 10. A section across Newton Mountain	58
Photo 8. Guilford stream at low water showing riverbed.	60

	<u>Page.</u>
Photo 9. Main valley in the Section allocated.	62.
Fig 11. Section along Guilford valley.	63
Photo 11. Looking downstream from point 996/081	64
Photo 12. Looking upstream from point 996/081	64
Map 6. Map to show Hook Colliery and shafts.	70
Photo 13. Hook Colliery	71.
Map 7. Map to show previous and present fishing grounds.	73.
Map 8. Map to show area where fish used to be sold.	76.
Fig 12. Sketch of the net used in herring fishing.	78
Fig 13. Sketch of fisherman setting herring net.	79
Fig 14. Sketch of a compass net used in salmon fishing	81.
Fig 15. Sketch to show salmon fishing in progress.	83.
Map 9. Map to show distribution of farms in study area.	89.
Fig 16. Graph to show proportion of land under potatoes.	90
Fig 17. Graph to show proportion of land under corn + hay.	96
Fig 18. Graph to show proportion of land used for grazing.	101
Fig 19. Plan of buildings on Great Nash Farm.	105.
Fig 20. Plan of buildings on Honey Hook Farm	107
Fig 21. Plan of farm buildings at Alagwon Farm	110
Map 10. Distribution and Housing Patterns year 1969/70.	114
Map 11. Distribution and Housing Pattern year 1908.	116
Photo 14. Concentration of housing:	118
Newspaper clipping "Caretakers of the past"	119.
Photo 15. Village School	121

	<u>Page.</u>
Fig 22. sketch of a house built 1904/1910.	123
Map 12. Map showing areas where people work from Klangon and Hook.	127.
Fig 23. Sketch of Williamston Terrace, Esther Lane, and Gulford Row with houses.	135.
Fig 24. Plan of houses in Main Street.	138.
Sample I	146

Sketch Map to show position of Llangwm and Hook
in Pembrokeshire and relative nearness to places
of importance.



↑
 2
Key

over 600'

up to 600'

1" - approx 10 miles

Introduction.

The aim of this study is to look carefully and analyse the allocated area. I will start off my study by looking at the geology of the area. When making field sketches, taking photographs and making notes on the area it became very prominent to me that this area is well endowed with a great variety of rocks. This makes the study more difficult as I have to deal with rocks that I have not come across in my study at college.

Not only does the variety of rocks create a problem but also the structure of the rocks. In general there seems to be a great deal of faulting and folding, this will be discussed in more detail in the geology chapter.

I found making notes on the relief and drainage very interesting. All the drainage runs down into the river Dauloddan, but there are some interesting valleys made by the streams on their course to join the main river.

The agricultural chapter forms a major part of this study as much of the land is under agricultural use. One must remember when studying agriculture that it is totally different from industry, whereas in industry one can look at the yearly output

in farming one must consider the seasons, what can be grown within that season, what and why a certain crop has been chosen by a particular farmer. This will be discussed in the agricultural chapter later on in this study.

The industrial chapter will form historical industry, as that is all that remains of the industry in the area allocated. There used to be coal mining and a thriving fishing industry however both have failed to continue, reasons for this will be seen further in the study of this area.

Urban geography in this area seems to be rather repetitive. This I feel is due to the area being predominantly country. One may mark out the shopping centre out as one shop and as for the central business district, things like this do not exist as an area but as places dotted throughout the area.

I found the investigation of social geography in this area very interesting. However people in the area did not share my views and resented being asked any questions about their livelihoods. Still however I enjoyed finding information for this chapter.

The main problems in this study then so far have been the variety of geological rocks which

I have not been introduced to. The total lack of flourishing industries and finally opposition from people in the questioning for the social geography chapter.

Geology.

The facing map shows how intricate the geology is in this area. I feel that if I was more prolific in the study of geology, this chapter could be even more interesting and clear. At the moment I feel a little inadequate to translate this map and some of my findings in the course of my studying this geology.

Rocks in this area range from glacial to Pre-Cambrian.

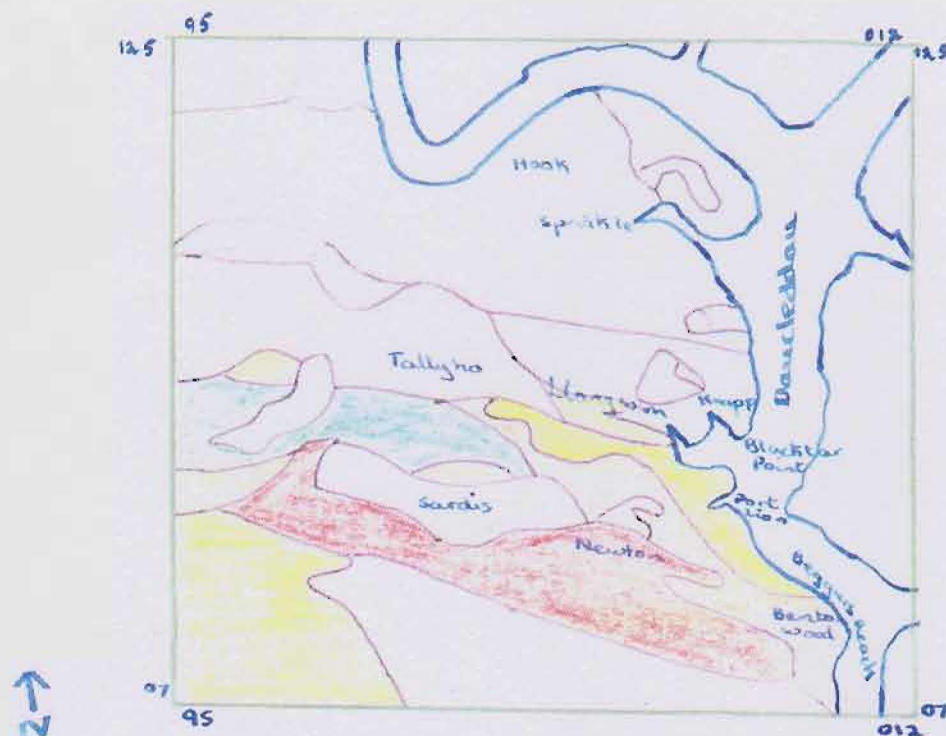
Along the river is to be found in the north of the area sandstone and shales of the carboniferous age covered in places with boulder clay of the glacial period. North Hargum on the river is found outcrops of sandstone of the carboniferous age. South Hargum to Benton wood are to be found outcrops of Red marls, predominantly old Red sandstone. Benton wood is mainly consisting of basal again of the Old Red Sandstone Period.

These rocks stretch inland but also inland are found two large crops of Quartz dolomite an intrusive rock of the Pre-Cambrian series, this is to be found at Tullyho and Sardis. Around Newton are found extrusive rock of the Benton series in the Pre Cambrian period, there are three types of rock here, Felsite, Rhyolite and Breccia the most prominent being Rhyolite.

14
Geological Survey of Haverfordwest. Ordnance Survey of England + Wales 3rd Ed

Drift Sheet 228.

Scale 1" = 1 statute mile



glacial {

Boulder clay with contemporaries sand + gravel

old red sandstone

Lower

ridgeway conglomerate

Cosheston group 1200'

red marls

basal 0-800'

carboniferous { coal measure { lower coal series { timber group
millstone grit series { middle or shale series

sandstone shales

sandstone basal grit quartzite

Silurian { Valentian { Rosemarket beds more than 1000'

mudstones conglomerate

Pre-Cambrian

Inkeston series { intrusive { Quartz Diorite
Benton series { extrusive { Quartz Albite
Felsite Rhyolite Breccia

Another type of rock to be found in this area is that of the Silurian period, being mudstone with conglomerates.

In studying this geology I will first take the Old Red Sandstone period. In this area there are three sections within this period, Ridgeway Conglomerate, Red Marls and Basal.

The outcrop of red marls stretches from Guildford 993/091 to Beggars Reach 005/078 giving lengthy exposures of this rock.

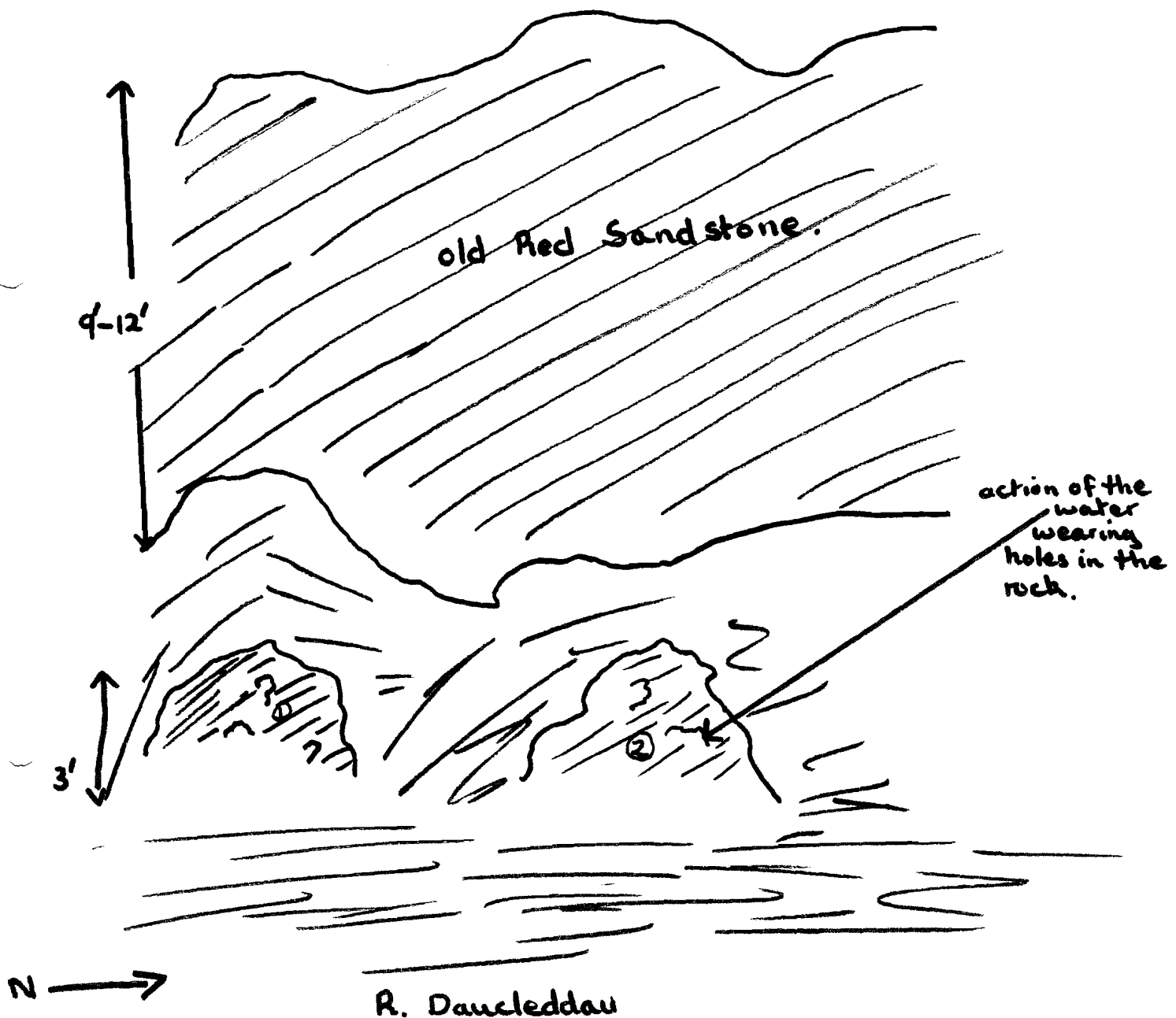
This rock of red marls is very strong, it has to withstand the action of the river Dauloddan. The action of the river attacks the weakest parts of the rock and breaks it up. The evidence in this area shows that the water is not successful in breaking large pieces away from the main bed. This rock tends to break away in small pieces and becomes old redsandstone pebbles. This at the river side mixes with the muds common on river beds. This red sandstones are also used for gravel and often used in making cement bricks, it makes good solid hard wearing cement bricks.

In many places along the river side the river has failed to break away a rock from its foundation so it is left jutting up by itself and the river has gone on to attack subsequent rocks behind it - see Fig. 1 page 17

The river still attacks the rock that it failed to

Sketch taken at point ¹⁷000/082

Sketch to show action of the Sea
on Old Red Sandstone.

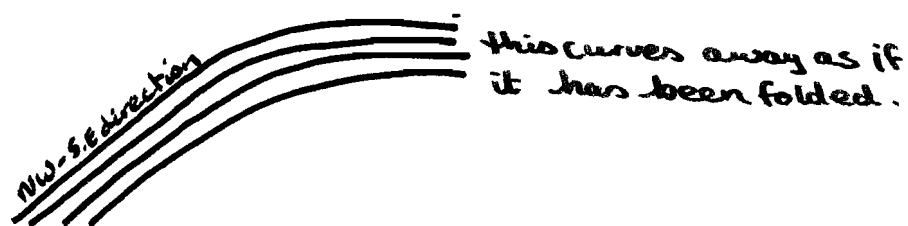


①+② = Two rocks which the river failed to break away from their foundation. The river has now started to attack the rock behind which is weaker than ①+②

break away but having no weaknesses just succeeds in wearing holes or dents in it.

Photo 1 page 19 taken at point 998/082 shows an exposure of Old Red Sandstone. The photo gives the view of about 5'-8' but the exposure extended approximately 10'-12'. It shows both folding and faulting giving a complicated structure to analyse. The top of the photo shows the strata running NW-SE but lower down the strata is more difficult to follow. It starts off in NW-SE direction but then curves off.

Diag. 1



Most probably this curves away from the general direction of the strata due to folding.

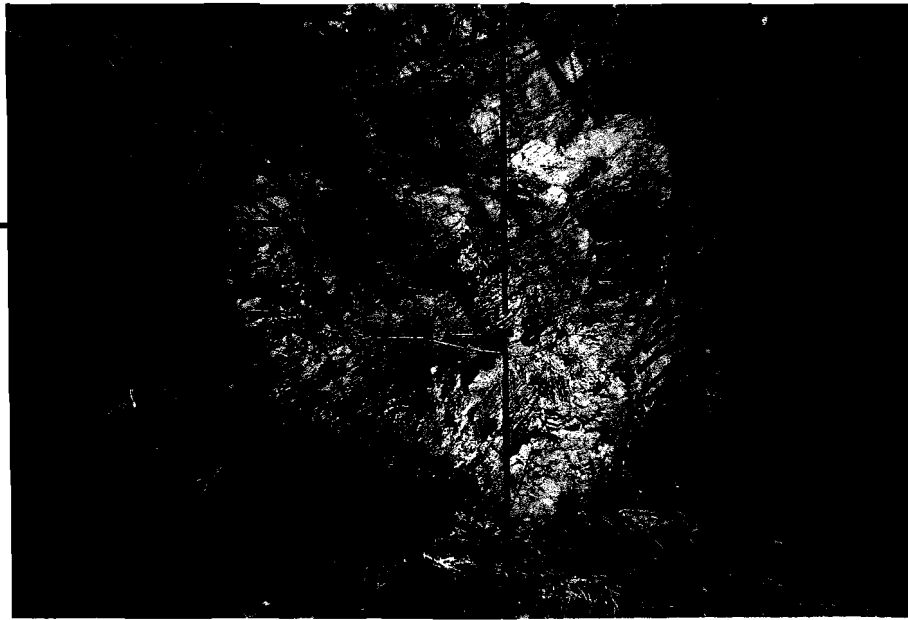
In the photo an arrow can be seen named as fault? The question mark is there because even at close quarters I was not quite ~~sure~~ sure whether this was a fault or just a layer of harder rock. It can be seen above this a layer labelled harder layer surrounded by softer old red sandstone, in this part there was no definite break just harder red sandstone jutting out, but in the lower part it was more difficult

Photo taken at ¹⁴ point 998/082.

Photo 1

Outcrop of old Red sandstone.

harder red
sandstone
between softer
red sandstone



fault?

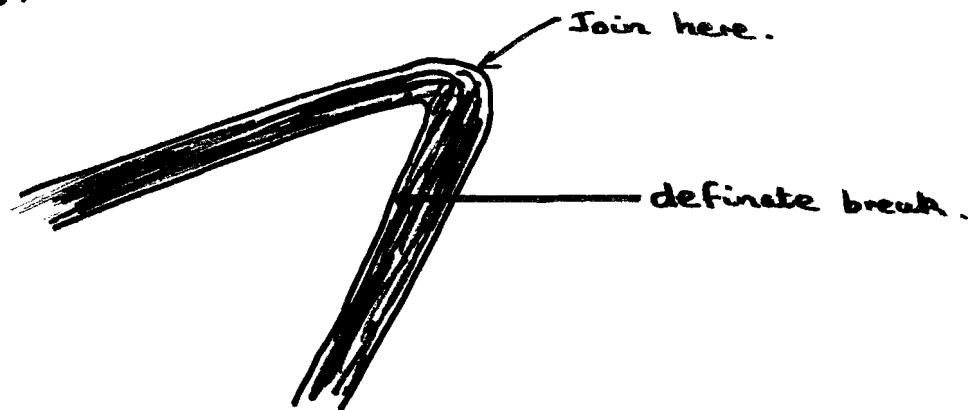
direction of
strata

N →

This photo shows the complicated structure of the rocks. This is due to folding and faulting and the action of the sea.

to decide. The two portions of rock under discussion seem to join together like this:

Diag 2.



Perhaps this is the result of folding but I am not quite sure about this as there seems to be a definite break in the rocks as though there was a fault, which could possibly have been caused by folding.

This rock is hard resistant to the action of the river and perhaps this is why it was used as a building material. Many of the old houses in the area were built with this as the main source of material. The gravel made as a result of the action of the river was used as mortar in the building of these houses. This stone is now longer used as a house building material but the evidence of it is still seen around the village.

Two pieces of evidence is shown in photo 2 page 21, taken at point 995/087. The five foot wall is

Photo taken at point ^{21/} 995/087.

Photo 2.

One use of old red sandstone.



shed also
built in old
red sandstone

↑
N

One use of old red sandstone is as a building material.
In this area it was once a very important and prominent
house building material.

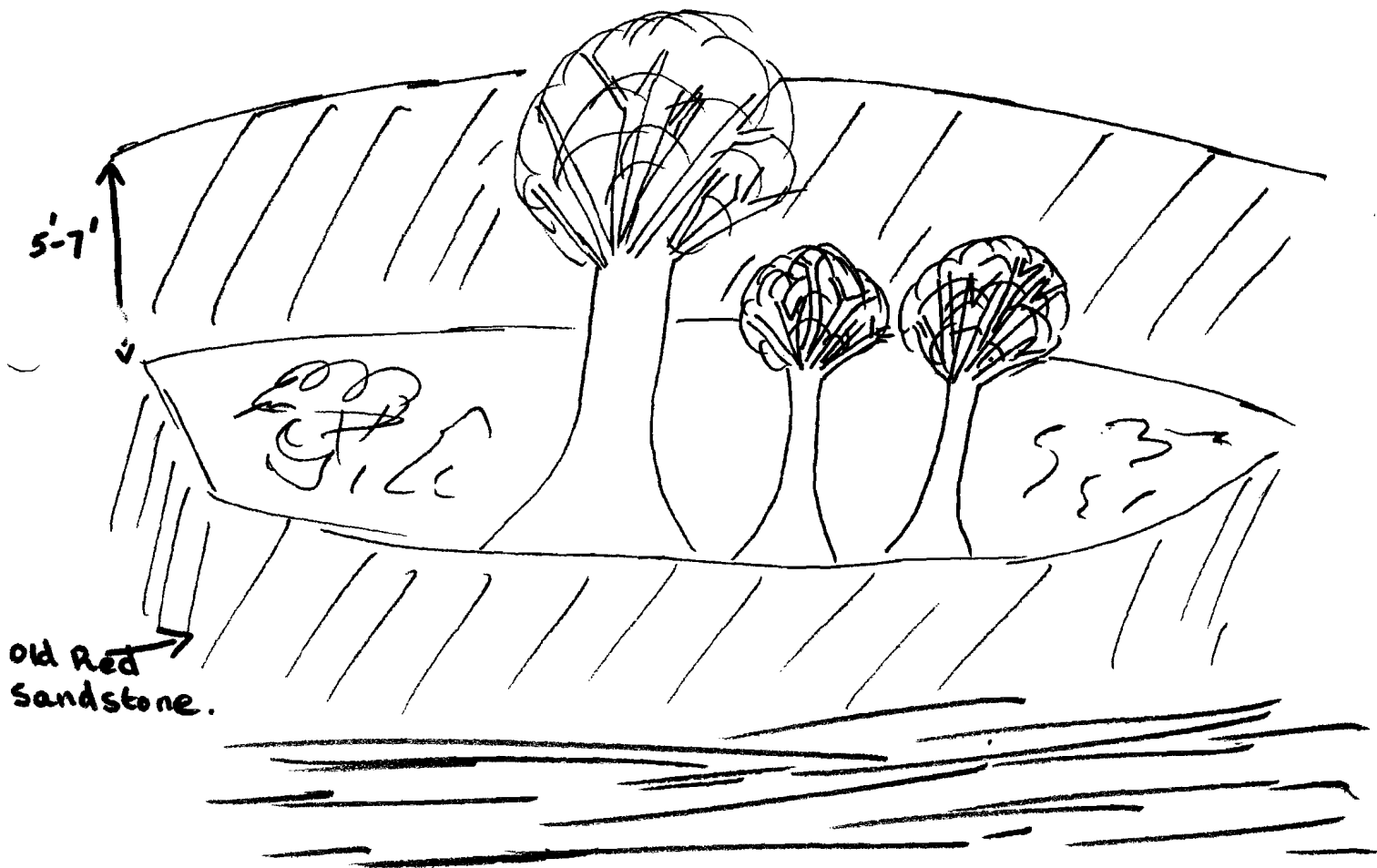
In this photo it has been used to build a 5' garden
wall and also a garden shed.

made of slabs of old red sandstone cut out of the beds of red marls. This wall is a dry stone wall but the shed in the same picture is made with red sandstone mortar. Another use for this stone has been crazy paving slabs but although the stones withstand weather they do not withstand the weight of cars with the same capability. A common sight in this area is to see red sandstone houses, although many people have pebble dashed over this in recent years to give their age old houses added protection.

On the geological map, p. 14, it shows that Benton wood stands on basal beds of Old Red Sandstone, however in my study of the rocks which expose themselves out onto the river I was unable to make any different identification between this and the red marl beds. It may be that these basal beds do not expose themselves onto the river but may be underneath an outcrop of red marl in this vicinity. While studying in this area I noted that there at, ^{had} been a land slip. A sketch of this can be seen on page 23 fig. 2. The reason for this land slip seemed to me to be the result of a fault. I came to this conclusion because there is no evidence of caves in the close vicinity

Landslip at point 005/075.^{23,}

Fig 2.



A landslip by the river Dauceddau which by the age of the trees and shrubbery I would say happened about 30-40 years ago.

which if there had been might have resulted in subsidence due to the action of the river. Due to the size of the trees and shrubbery I came to the conclusion that this slight landslip occurred approximately 30 to 40 years ago.

There is very little other old Red Sandstone exposure except at the river side. However the Ridgeway conglomerate which is shown on the geological map, gives rise to the red soil which becomes predominant in this locality. This red soil is noted on the agricultural land and apparently is very fertile but tends to be on the sandy side.

Other exposures which are to be found by the river side are sandstone of the millstone grit series and sandstones and shales of the lower coal series, both being of the carboniferous period.

The outcrop of sandstone has been greatly exposed to the history of time. It shows signs of both folding and faulting and the pattern of the stratum is difficult to follow for more than a short time.

This sandstone is not as hard as the old Red Sandstone and is not able to withstand as much action of the sea as the Old Red Sandstone. This rock tends to have more weaknesses than the old

Red Sandstone and in places shows signs where the action of the river has been successful in breaching boulders away from the parent rock. In other places the action of the river has succeeded in breaking down the cliffs and headlands, so that walls have been made by one local farmer to protect his farmland from the efforts of the river to envelop his land, like it has enveloped the Sandstone cliffs.

Photo 3, p. 26 taken at point 998/092 shows an exposure of sandstone. By looking at the photo one sees in the foreground that the strata of these rocks run NW-SE, we are unable to see further on where the rocks change direction to SW/NE there is then a gap in the middle where the river has worn the rocks back. However I think that this section of the sandstone has been exposed to folding and before the action of the sea attacked the rocks the ~~strata~~ strata looked like this.

Diag 3.

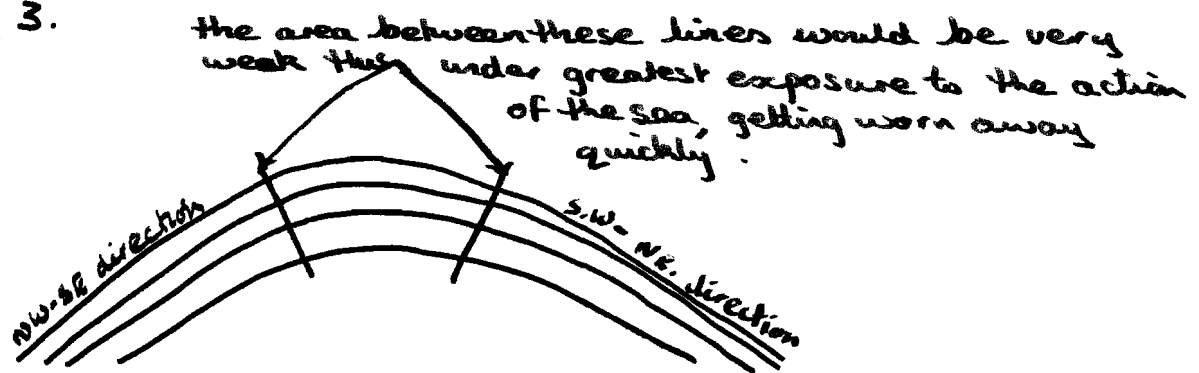
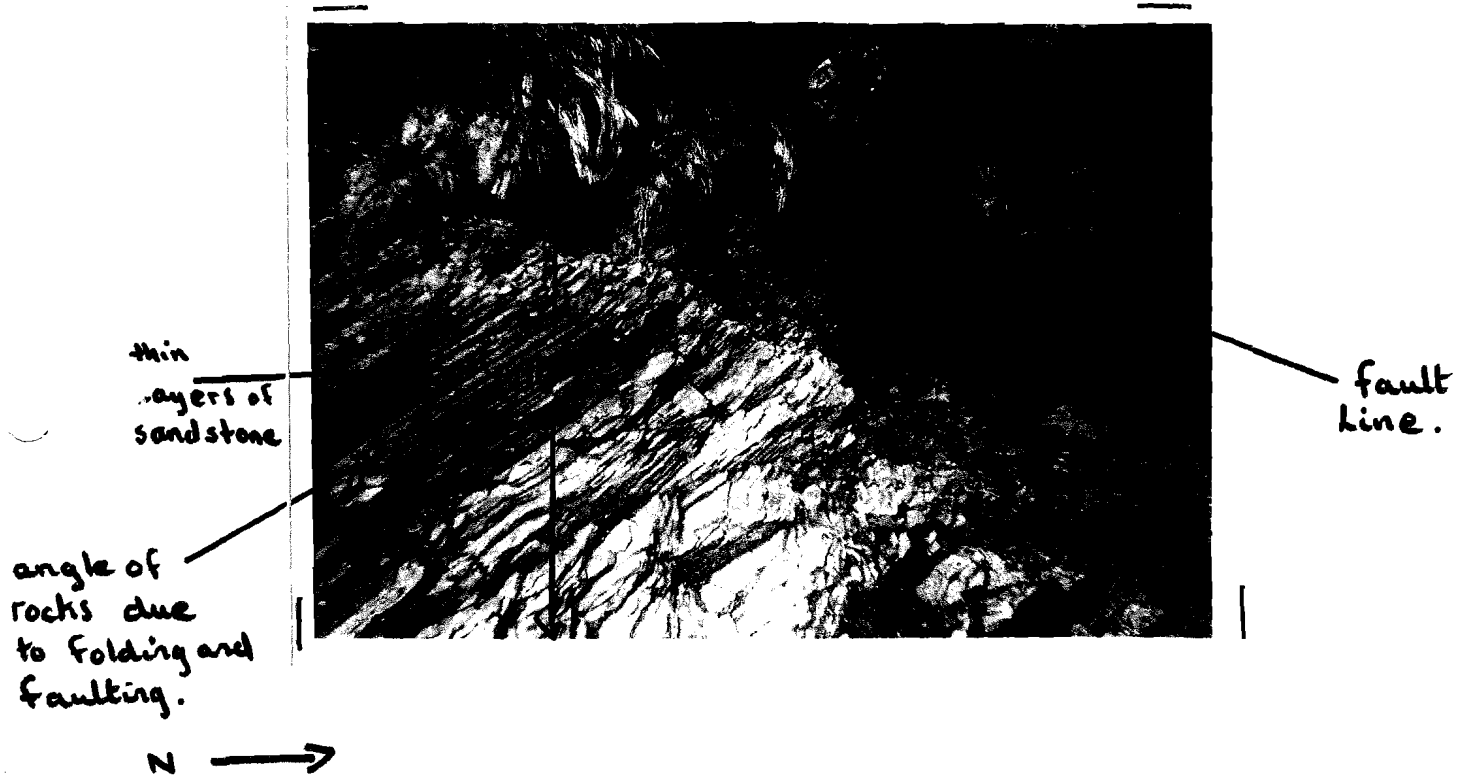


Photo taken at point 998/092.^{26/}

Photo 3

An outcrop of sandstone.



This rock has been folded and faulted during its history. This outcrop of sandstone is by the riverside and subsequently gets worn by the river.

In the above photo one can see the effect of folding on this stone. The rock has splintered into thin layers of sandstone layed one on top of the other.

X worn away by the action of the sea.

see page 27.

The rock between 1 / on diagram 3 would be under a great strain due to the folding of the rocks, this would therefore be very weak and less able to withstand the action of the river. This could then be the reason why the river has been able to wear away "x+x" on photo 3, page 26.

This folding would also have the effect of crushing the sandstone into thin layers of stratum as seen on photo 3, p. 26. Also in this photo is labelled a fault, this could have occurred due to the action of the folding process. The river will now attack this weak fault and will in time ~~be~~ break this boulder away from the main mass of rock. Another photo which shows a close up of the thin layers of sandstone resulted from folding is photo 4, p. 28 taken at point 999/096. It shows clearly how folding has weakened the rock. When a rock has been folded like this it makes the work of the sea so much easier.

The lines — on photo 4 show the direction of the strata, here being N.E. — S.W. However the lower line ~~being~~ begins to bend over again with the fold, if exaggerated would look like , in fact this is what one would see if you were to take the rock "en bloc". This photo is actually taken in a kind of small cave, the river has worn out

Photo taken at point ^{28/} 999/096.

Photo 4

Thin layers of sandstone.



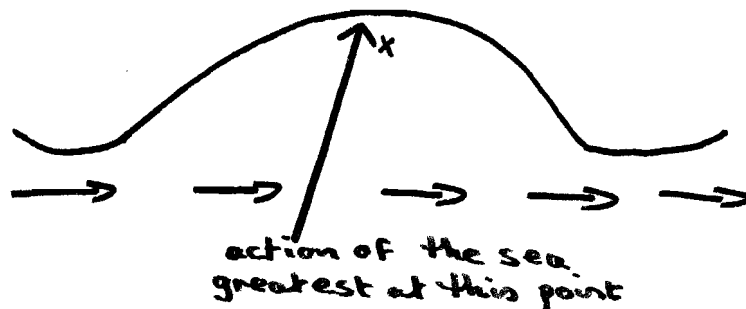
N. —→

Close up of the sandstone in this area which outcrops onto the river. It shows the thin layers of sandstone which is most probably due to folding and faulting.

— following the stratum
giving a clearer view
of its direction - here
N.E.-S.W.

the centre so giving the following effect to the coast line.

Diag 4.



→ N.

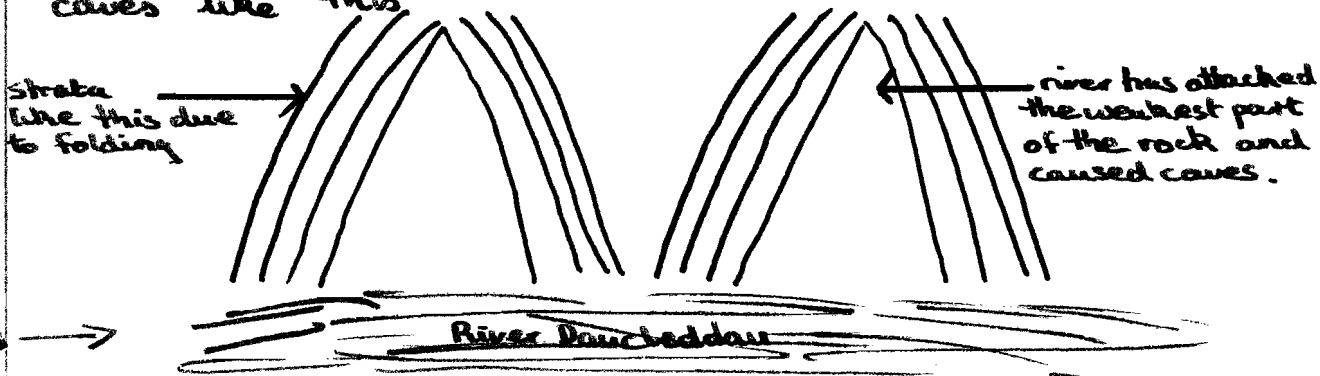
x = point from which photo was taken

→ = direction of the river.

Near this particular point some caves are to be found. A sketch of them can be seen on page 30. The water rises to a high level at this point 99/095, it rises over the caves sweeps over the level land and attacks the rocks further back. I think that these caves are the result of two actions, one the action of folding and two the action of the river attacking the weak spots made by the folding.

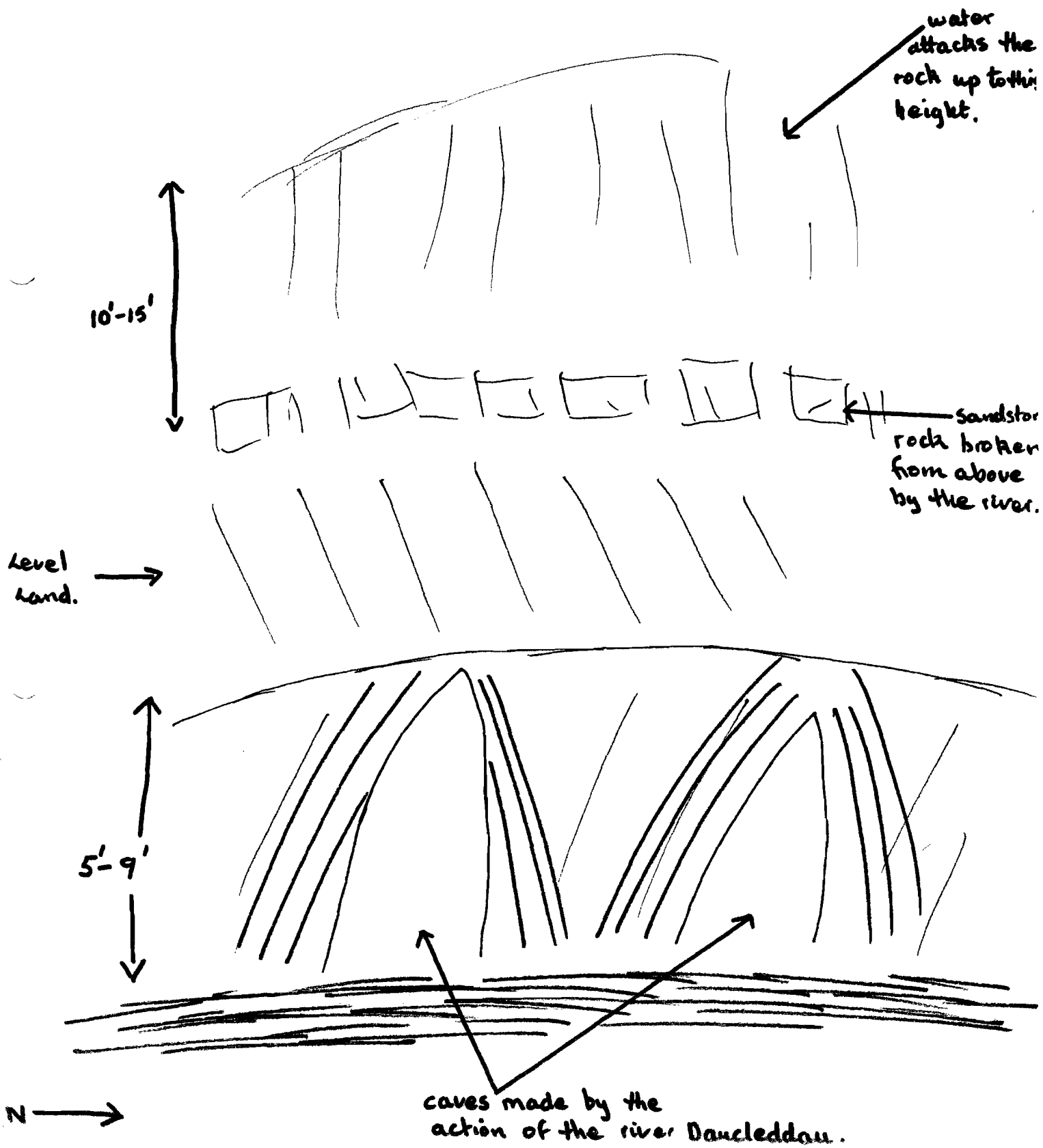
It can be seen that the strata folds over the caves like this

Diag 5



Caves at point 999/095.^{30/}

Fig 3



In this sketch on page 30, one can also see evidence of the river attacking the second area of cliffs, of the first making caves, here pulling rocks away and making a rubbled shore line.

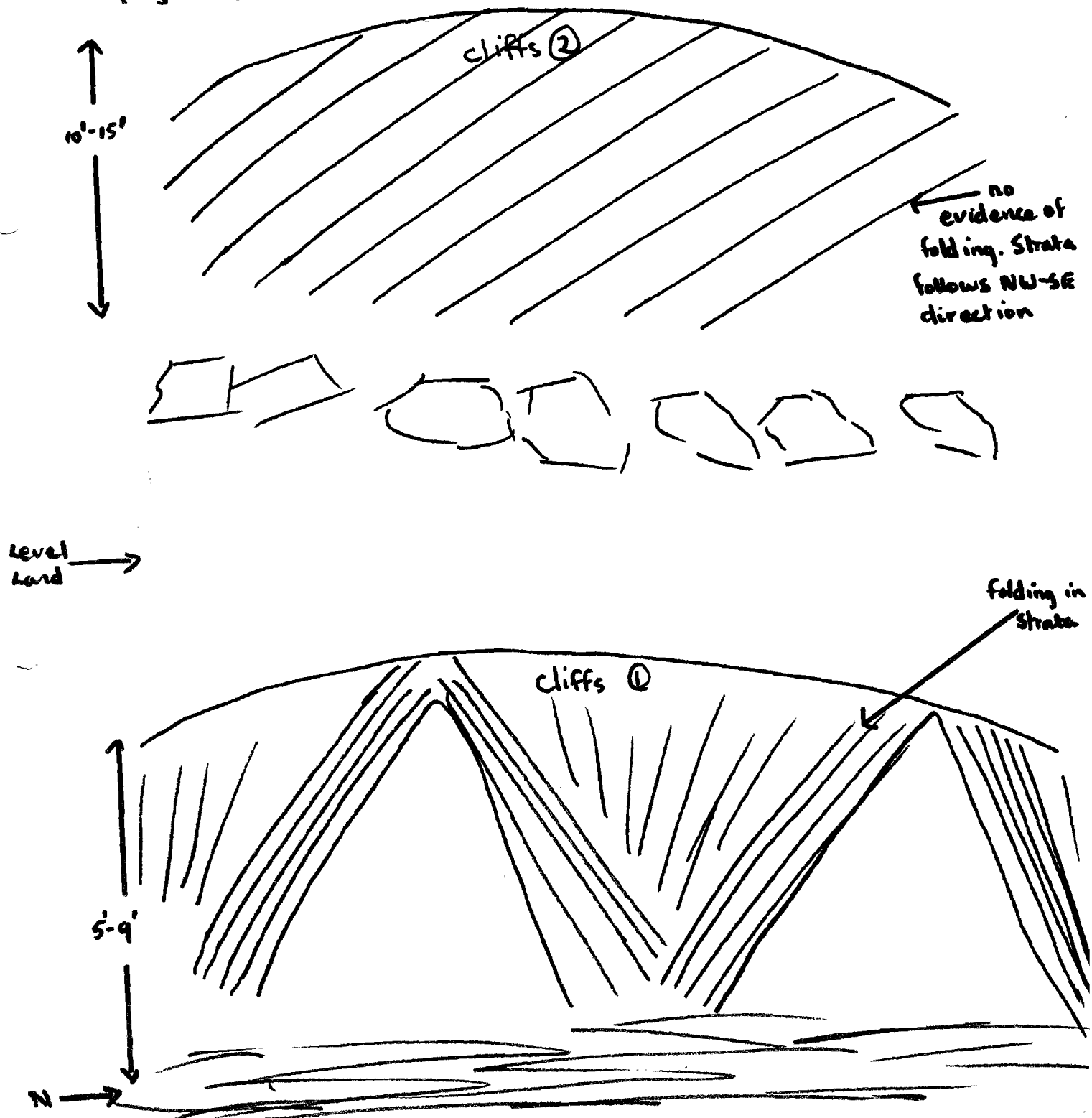
A question that may be asked at this point is why are there two shorelines and two sets of cliffs? This is not easy to answer, there may have been a landslip, but what evidence is there of this? The structure of the strata in the first set of cliffs is different from that in the second, this is not clear in sketch page 30 but page 32 shows more clearly the two rock structures. There doesn't seem to be enough evidence to say that there has been a fault resulting in a landslip, the rock strata does not fit. It is more likely that the first set of cliffs were harder than ones above them and the ones above would have been destroyed quickly by the action of the river. The river has now eaten away the above cliffs back to the position of the second section of cliffs. There seems to be no other reason for these two sets of cliffs and in fact the first set of cliffs with caves takes the form of jutting out into the river for elsewhere the cliffs take the same position as those of the second section of cliffs.

Sketch of point 999/³²¹095 see page 30.

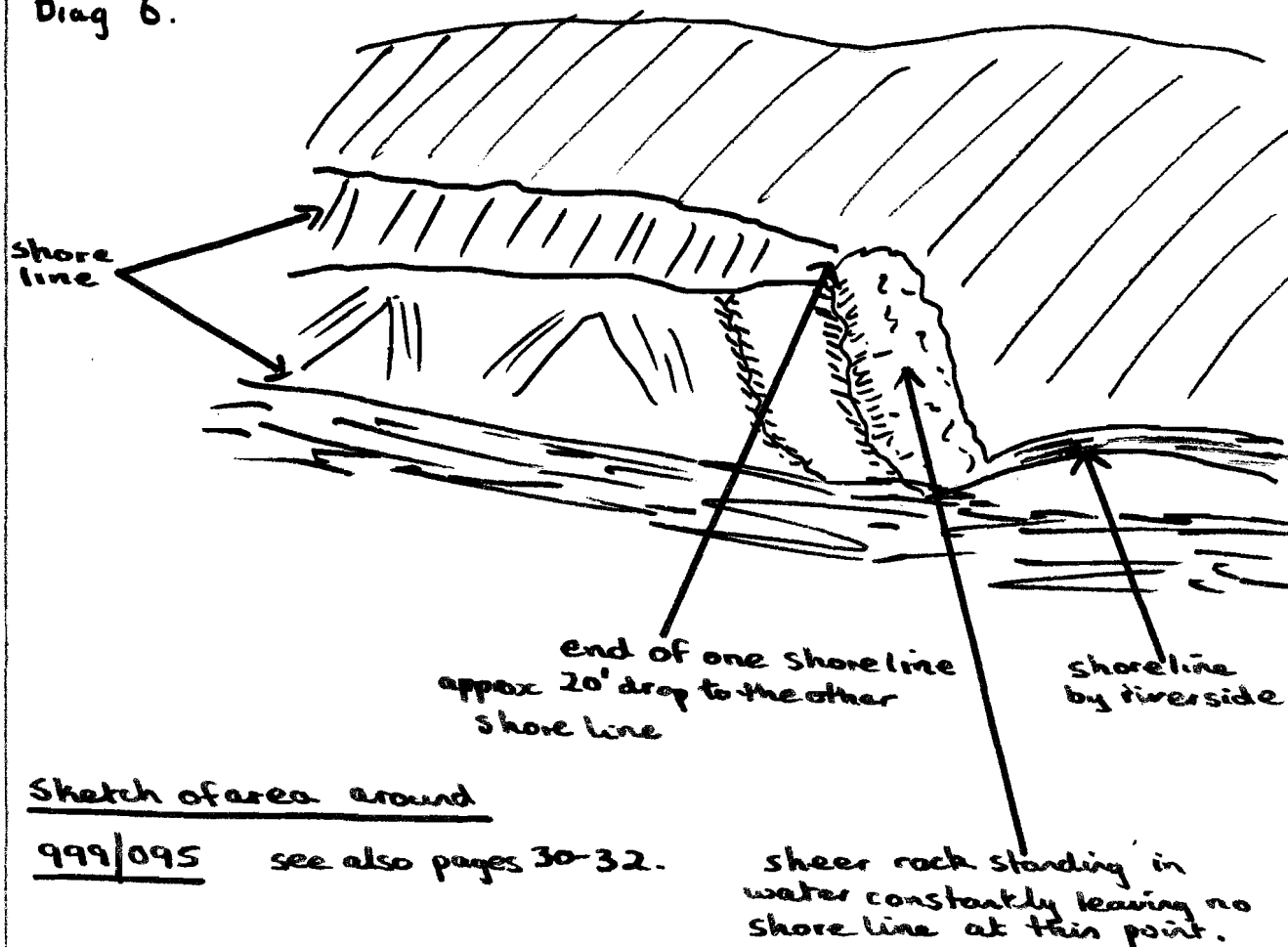
Fig 4

Sketch to show study of the strata.

①+② = 2 sections of
cliffs see
page 31,



At one point of the first section of cliffs there is no shoreline as it stands in constant water and the shoreline is marked at the level of the second section of cliffs. This makes difficulties to those who wish to walk around the shore as there is a 20 foot drop between the shorelines at this point
 Diag 6.



The rock that juts out into the river at this point is known as Vidler's point and is well known by the fishermen in the area, as at high tide the

water covers these rocks and is a constant source of danger to fishermen who do not know the area.

Photo 5, p. 35, taken at point 997/112 is taken in an area of sandstones and shale. Here the shale is set between sandstone. The shale represents thin layers whereas the sandstone seems to stand out in blocks. As can be seen from the photo the sandstone has many weaknesses which are exploited by the river. In time the river will break this sandstone away from the parent rock, and being at the bottom the above rock will fall down or overhang dangerously.

Nothing much can be seen from the shale exposure at this point. There was not much shale but it extended for about 10"-1' in depth.

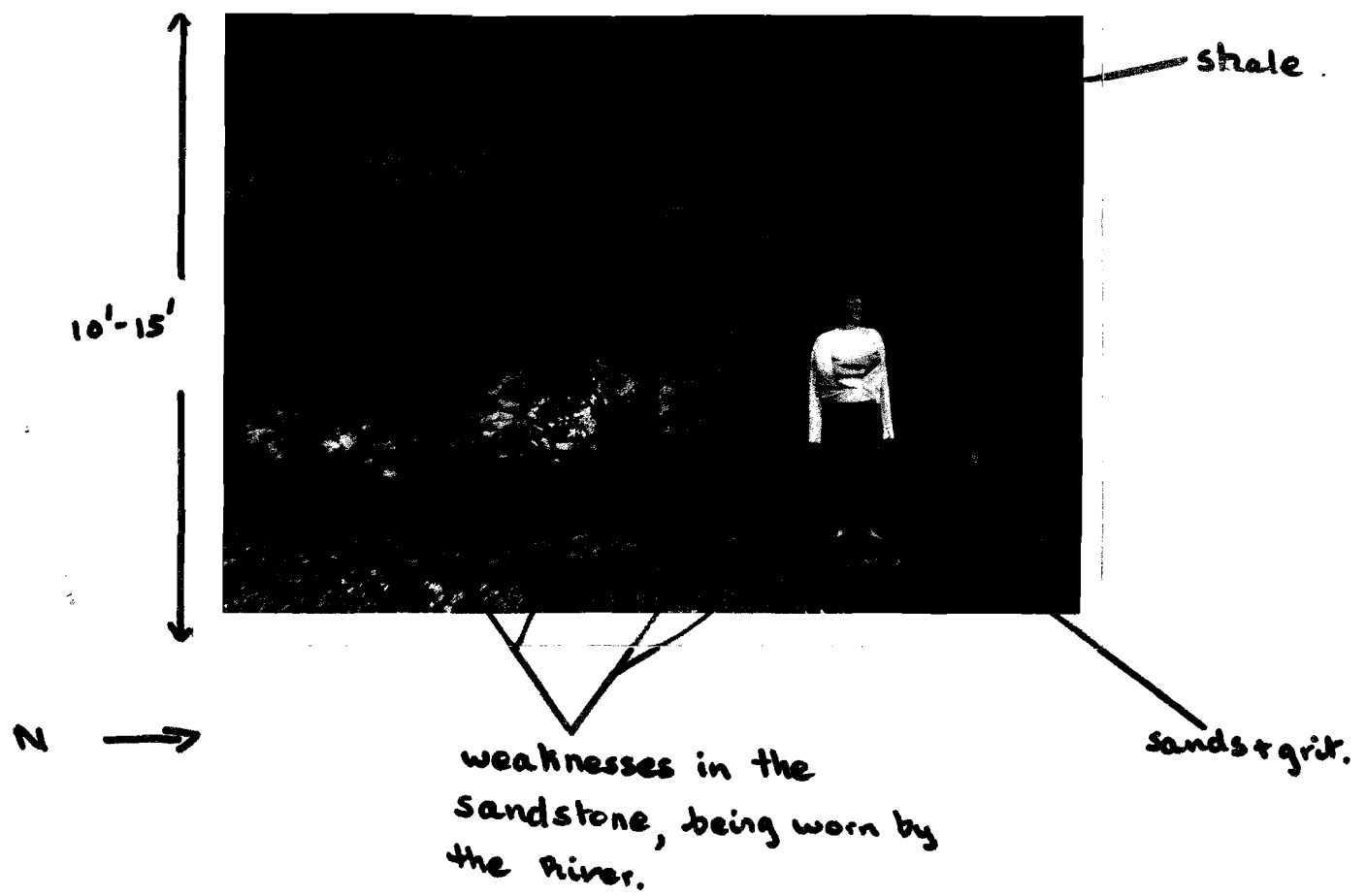
One can see that vegetation is growing on the rocks, this will also add to the splintering of the rock as the roots will unbed themselves and grow in rock cracks thus widening them and leaving them at greater exposure to the river's action.

Above these rocks was found loamy soils and a small wood is growing here, it extends up towards flatter land for about 30'. The valley floor here is of loamy soils mixed with sands and grits, the floor is disturbed by springs

Photo taken ³⁵/at point 997/112

Photo 5.

Weaknesses in the sandstone outcrop



coming from the rock face and does not leave the land, running down to the river, flat but is very uneven due to the spring's action on the soil here.

Another outcrop of shale is seen on page 38, the sketch being taken at point 988/122. The top soil is mainly of boulder clay but in places is mixed with a sandy substance. The land here is usually used as grazing pastureland, perhaps this is due to its fertility and occasionally especially in winter this land becomes boggy. Under this soil is found a layer of sandstone. This sandstone does not appear to be very hard as it breaks away easily and forms rubble on the ground below. The strata of this rock seems to run N.-S. ~~are~~ but in fact the rocks here run E.-W. and the lines which suggest N.-S. stratification are fault lines.

The next layer of rock consists of shale, which appears to have been under great stress at some part of its geological structure. This thin layer of shale is weak and has splintered during its formation and is therefore easily worn away by wind and water.

Under this thin layer of shale is found a much thicker layer of shale which appears to have been structured at a different time from the shale

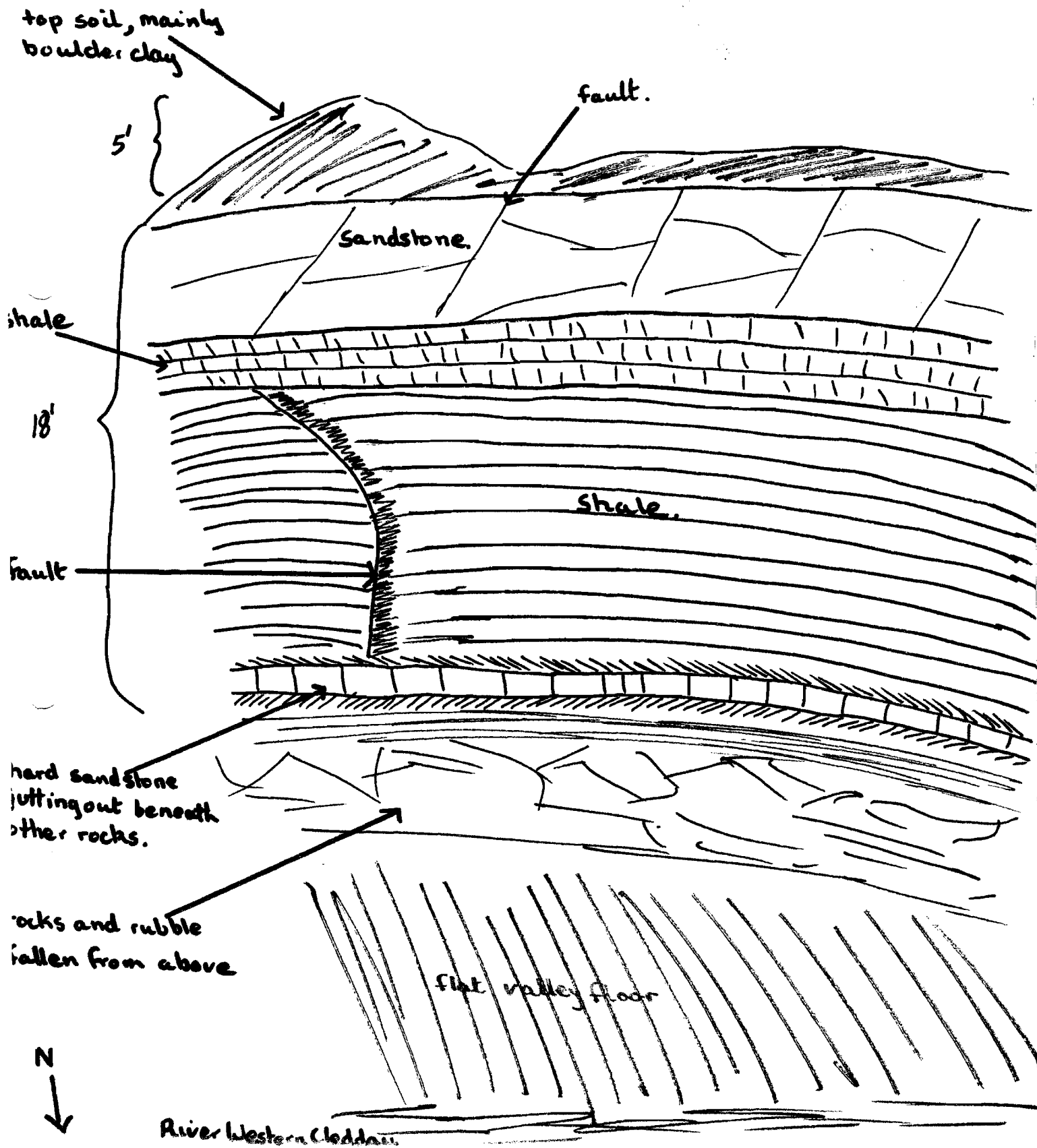
above. This shale is much harder than the previous shale and withstands the action of the river better. However this shale is not perfect, as can be seen from the sketch there is a fault, this fault line only extends through this layer of shale and therefore must have occurred during the period of the shales structure, otherwise the fault would most probably extend through all the rocks at this point.

Below this shale is an outcrop of sandstone, it is a very thin layer, but is very hard. In fact it appears that this sandstone has been mixed with some other rock like millstone grit. It forms a protrusion at the foot of this cliff. The protrubance is wide enough for a person to stand on approximately 4"-6". This sandstone takes the general line of direction of the rocks at this point, that is E-W. direction.

The sketch then shows rocks and rubble of the sandstone at the top of the cliff. There is shale mixed in here but most of the shale has worn down and mixed in with the mud to become part of the river banks and bed. The river at this point is called the western ~~bed~~ Cleddau, it is one of the main rivers that feeds

Sketch of point 988/122³⁸ to show stratification of rocks.

Fig 5



the Dauceddau.

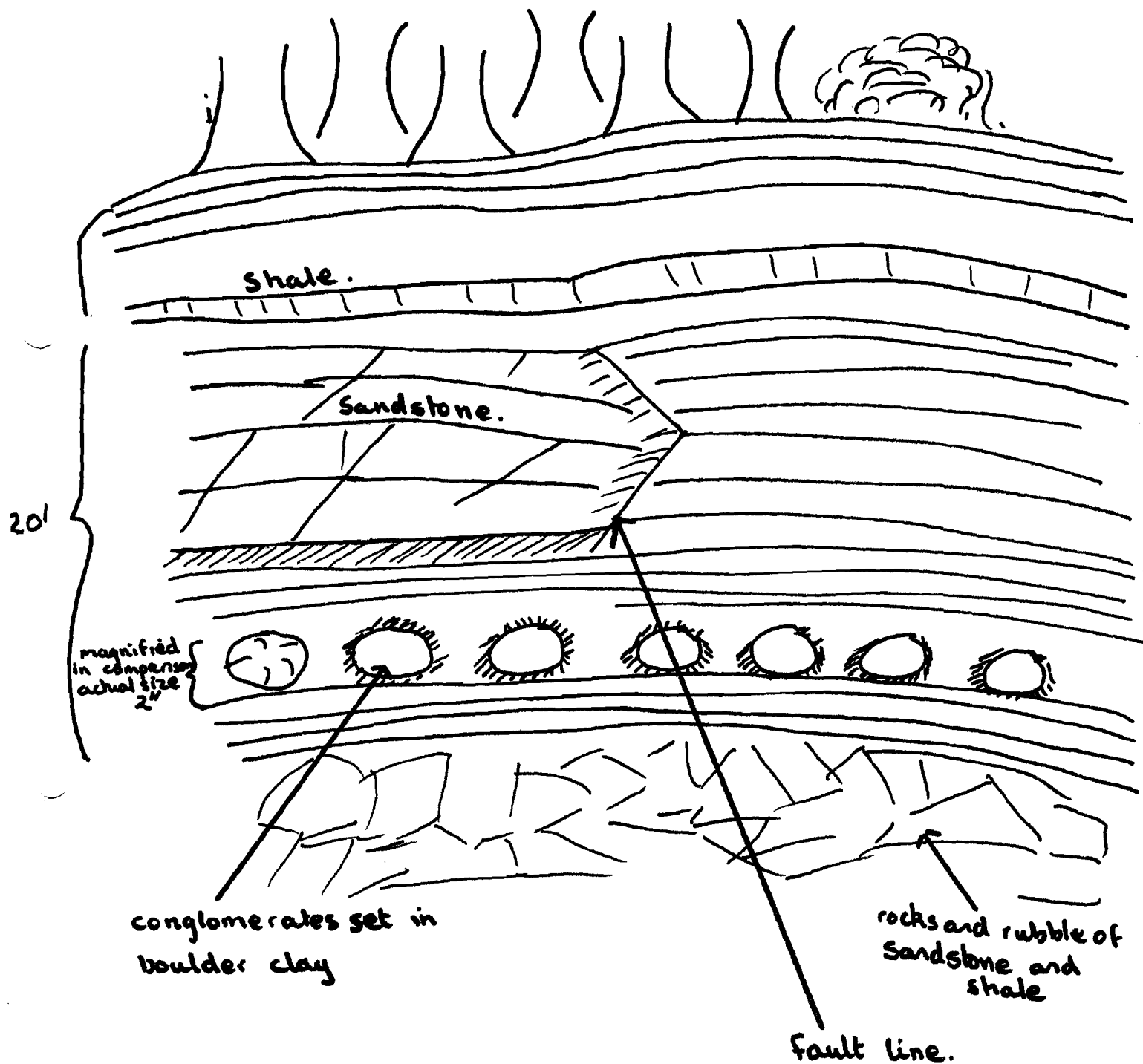
Another sketch p. 40 drawn at point 996/107 shows shale and sandstone outcrops. However this sketch was drawn because of another odd feature of this area. There is one layer of the rocks different from all the others. They are round pieces of rock set in boulder clay. The outer section of boulder clay has been worn away by the action of the river. It was difficult to make out what these were, I was able to break one of these round rocks away from the parent rock.

On examining the sample I noted that the outer layer was soft and could be scraped away with my nail. The piece of rock which this was embedded on to was very hard and could not be scraped by my nail. I wondered if this compressed clay went all the way through this piece of rock, to satisfy my curiosity I broke the sample in half and found an interesting structure inside. I found this so interesting that I have included this sample of rock in my study and it can be found on page 146.

On studying this sample I could see how the base on which this structure was set had flowed into the structure in a round circle

Sketch of point 996/107 ^{40,} showing structure of the rocks.

Fig 6



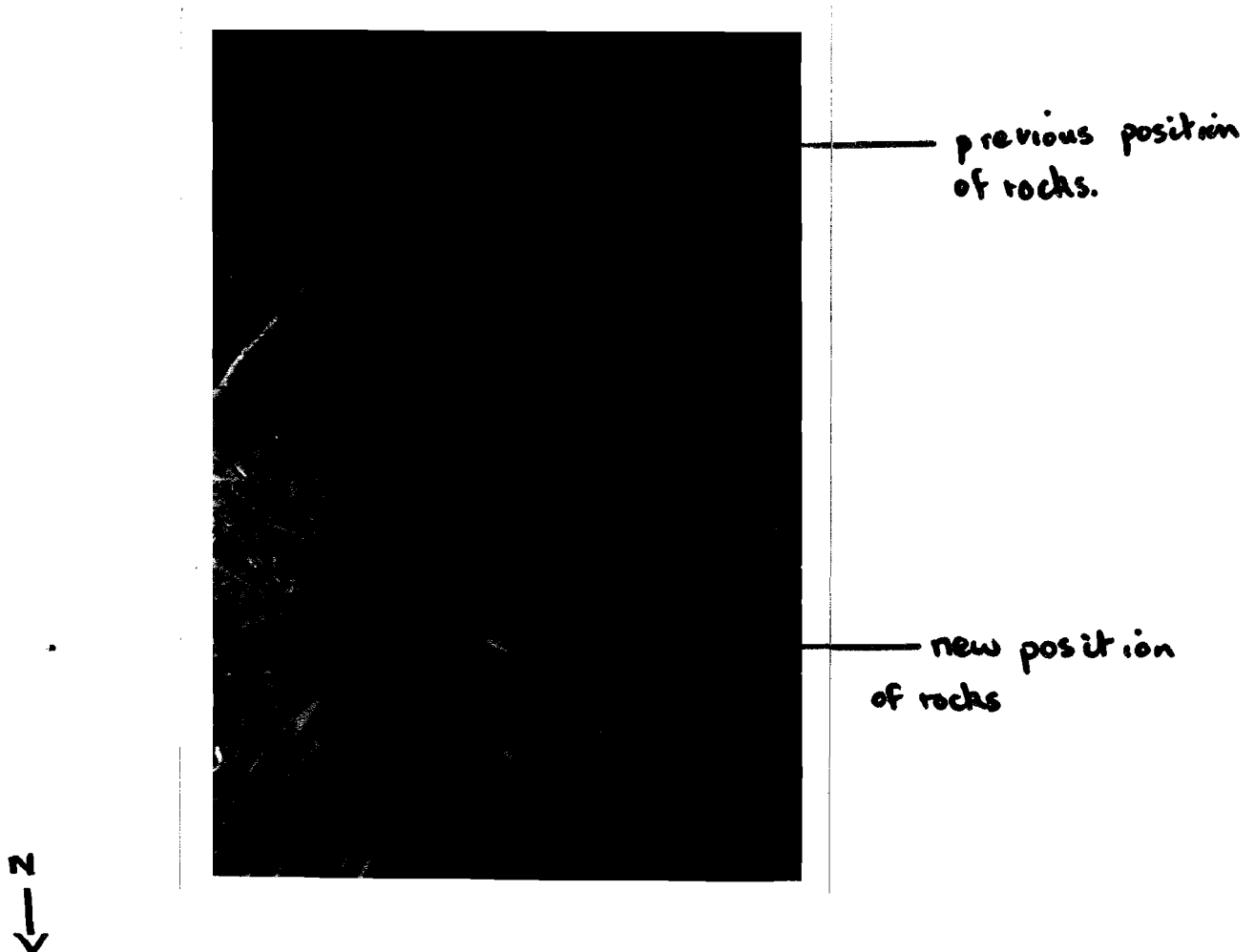
This had flowed around the centre piece which on first looking just looked like compressed cement powder. It is grey in colour and is very soft, when broken away it appeared to be compressed mud, the same sort which is to be found on the mud banks along the riverside. This grey material is covered by a hard thin layer of rock which appears to contain iron in it, this may be purely my imagination, but not having seen rock containing iron I could not be definite. There is also no evidence on geological maps of iron being present in any rocks in the vicinity so I would say this is just very hard rock, perhaps shale mixed with millstone grit or very minute pieces of quartzite. However as said previously my curiosity was so taken by this geological structure that I have included the sample on page 146

A photograph was taken at point 980/118 see page 42, to show another landslip in this area. It is taken in an area predominantly consisting of sandstones and shales. The land has slipped down about 4'. There appears to be no fault where the land has slipped. This landslip is in the vicinity of shafts from the

Photo taken at point ⁴² 980/118

Photo 6

Landslip.



This landslipping is thought to be due to underwater springs which flooded and closed Hook colliery due to subsidence.

old coal mine workings. The area here is riddled with underground tunnels made from the coal mining. Here also are many springs which run through the tunnels and cause subsidence. This is most probably the reason for this landslip subsidence due to coal workings and springs which flood the area. The soil at this position is sandy mixed with boulder clay and supports shrubs and grass.

The exposures of geological structures which have been mentioned so far have all been exposures at the river side, as they give a good clear picture of the type of rock and its characters. However a geological sample which does not occur at the riverside but does occur within my area is *Athyolite*. This is an extrusive rock of the Berton Series and comes under the Pre-Cambrian period.

I do not know how deep this *Athyolite* extends as the exposures I have seen consists of rocks protruding out of the soil. A sketch of this can be seen on page 44. The rocks are scattered over the hill and appear to be connected to the parent rock underneath, in fact this is so, as when the land was being cleared it was found that these rocks could not be moved and so these were left and the land is now used

^{44/}
Sketch to show outcrops of extrusive rocks at point 987/080.

Fig 7.



for sheep grazing. This rock does not appear to be extensive but around the fields of Newton farm there is evidence of odd rocks of Rhyolite protruding through the soil. Often in the middle of a potato field one can see a rock of Rhyolite which has not been moved, standing out in this area. This Rhyolite is a hard igneous rock which in this vicinity occurs as protruding rocks.

Another hard rock which is difficult to move from its parent is millstone grit. This is found in the vicinity of 980/090. A photograph which is to be found on page 46, shows one use of millstone grit rock in this area. That is dry stone walls. Here big boulders have been used, these boulders were dug up when the fields nearby were ~~till~~ levelled.

It can be seen that this area has been richly endowed with geological rock types. Although this causes difficulty to the person who is inexperienced at geology it would create a great interest to geologists studying the area as a great many different rocks are to be found near each other.

The main area within this geology chapter

⁴⁶
photo taken from point 989/092

Photo 7

one use of local rock - millstone grit.

1

Dry stone wall made with millstone grit boulders. These boulders were dug up when a field nearby was levelled. Some bigger boulders were left in the lower reaches of the soil as they were too difficult to move.

Many walls on the farms in the vicinity are made like this one.

must surely be the rock beds outcropping onto the river side. It is the river which has made me able to find so many exposures of rock types and their characters within this area.

Relief and Drainage.

The relief and drainage of the area can be seen by studying the map of relief and drainage found on page 48.

The only place along the riverside where the rocks rise vertically up from the river is around Knap 999/100, here it rises to 100'.

Elsewhere there is a less drastic rise. The other area which does rise steeply but not as drastic as Knap is around Berton Wood 999/082.

Here the rocks rise steeply to 100' and then rise more gently to 300' at Newton Mountain.

The highest point of the area is to be found here on Newton Mountain, it is a spot height at 987/080, which is 322'. This is the area where the Rhyolite rock is found, see page 43-44.

Elsewhere in the study area the rocks only ever reach 200' at Nash which forms the Eastern boundary of my area. In fact this is part of a small hill which rises to 267' at point 971/104.

The most low lying land is to be found around East Hook in square 99/11-00/11 to 99/12-00/12. It rises very gently to 25' and this area is very prone to flooding at times of bad weather.

There is a good example of a "V" shaped valley made by the stream which runs West-East through

the village of Llanguw into the river Daugleddaw. This stream is now very weak and carries very little material on its journey to join the main water flow.

In the Southern half of the map on page 48, one can quickly see that the drainage pattern is closely connected to the relief. The streams in this section flow down the sides of the Newton Mountain either like the stream flowing through Port hion to join the Daugleddaw direct or like the stream which starts at point 984/084 flows and joins another stream at point 987/094 before joining the Daugleddaw. This is an example of radial drainage where the streams diverge from a hill to nearly all points of the compass.

In the Northern half of the map the area is drained by Sprinkle Stream. On the map this does not show as a clear "V" shape valley as not all the valley is shown. In this section of the map it is known that there are many ~~underwater~~ underground streams, but these are not shown on the O.S. map. It is partly due to these underground streams that this area of Hook is subsiding.

There are many springs in the locality they are not of a large size but are marked here on the map. Many springs occur at the riverside

but these are two numerous to mention and often dry up during good weather.

On page 52, there is a map, on the scale 6" = One Statute mile, showing Guilford Stream is a "V" shaped valley. There is a section of A.B of this map to be found on page 53. This section shows how the stream is set in the valley. The stream runs West-East and leaves very little flat land either side. There is virtually no flat land on the northern side of the river, but in actual fact there is enough flat land to support houses along the stream. The valley side here, that is the northern side of the stream, then rises steeply to 150' staying ~~be~~ at this height to give a plateau effect.

The southern side of the valley has more flat land along the riverside but then rises steeply from 50' - 200'. This valley side at this point is still rising and shows no signs of flattening out and in fact rises almost to a conical hill.

At this point the stream is carrying very little and gently wears away its banks but with little effort. It seems content to follow the already made path of its predecessors. It is here a narrow stream approximately 3' - 4' in width and the largest stone carried by the stream here is 3" in diameter

Map 4

A map to show Guilford Stream. scale 6" = 1 statute mile

998/03

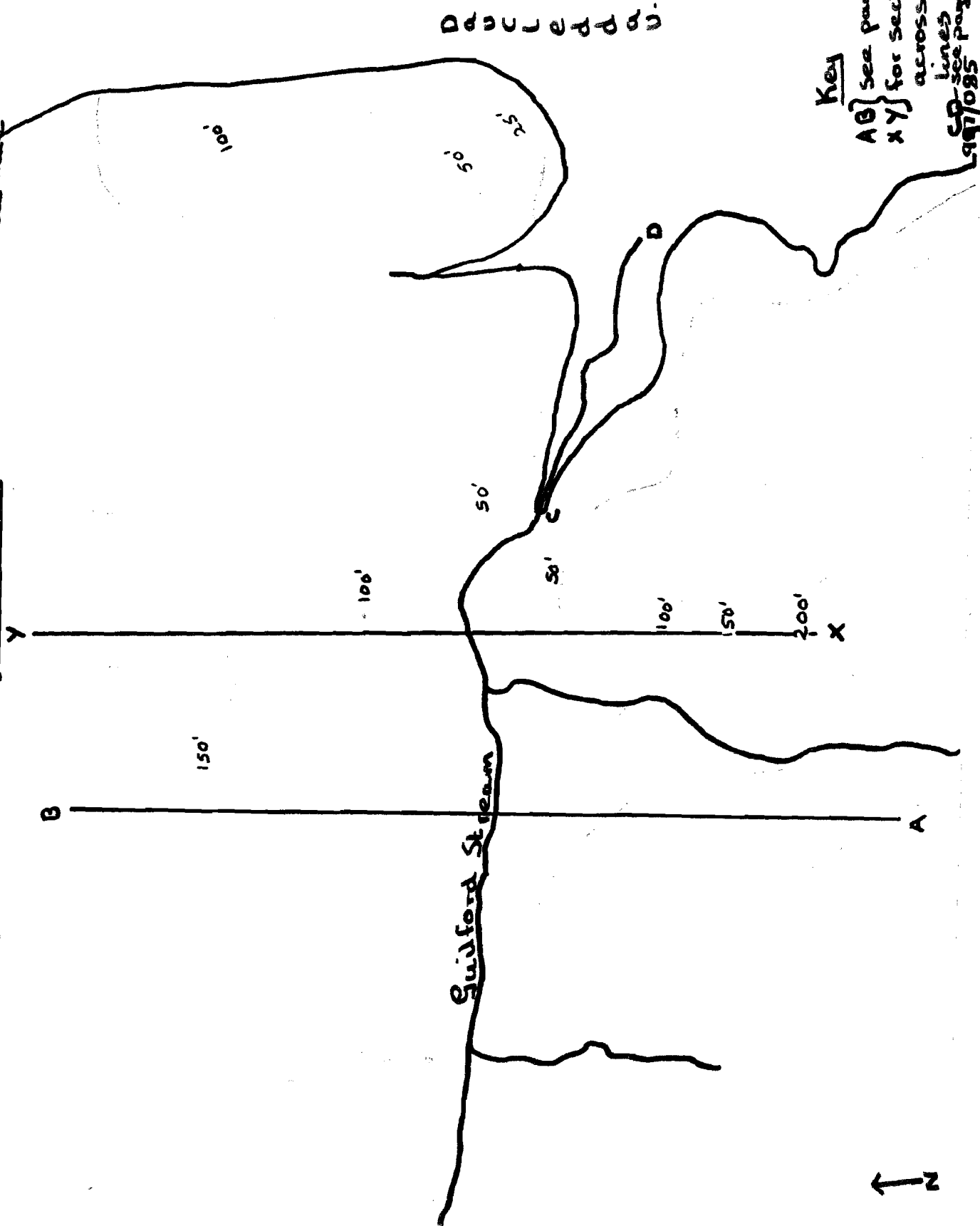
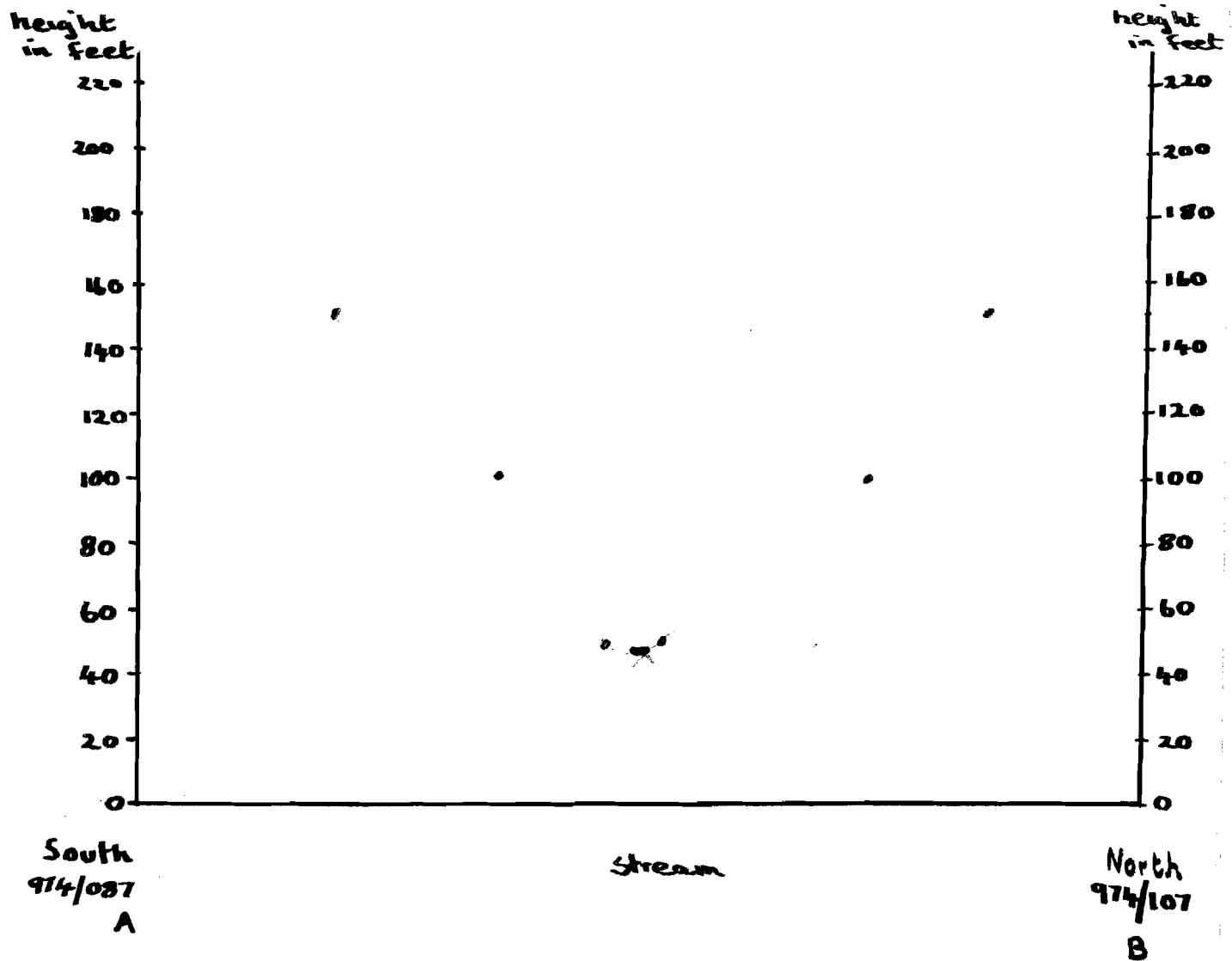


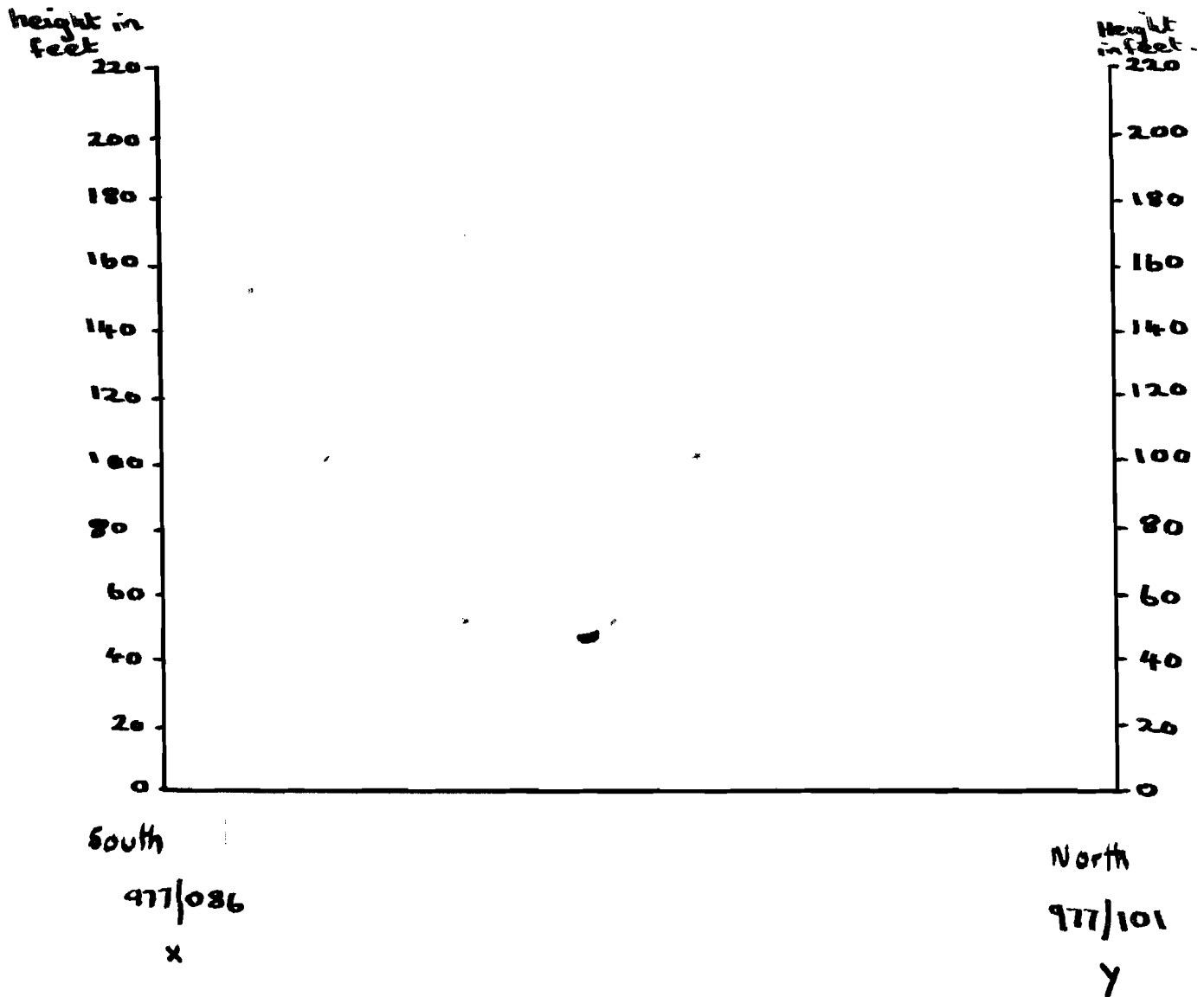
Fig 8A Section of a stream showing a "V" shaped valleyA section across AB see map 4 page 52

although it seems capable of carrying larger objects. Stones found deposited here by the stream consist of sandstone, millstone grit, basal grit and quartz dolerite, in fact there are quite a number of stones of quartzite consistency on the stream bed. Following the stream to its source discovered that it begins in an area of intrusive Pre-Cambrian rock consisting of Quartz Diorite, Albite and Dolerite.

The line XY on map 4, page 52, is represented as a section on page 55. It must be remembered when studying this section that the main stream has been joined by a subsidiary stream. The main stream - Guilford Stream - is still running West-East in direction. As compared with the previous section on page 53, the stream is set in a wider floor. The last valley was described as "V" shaped and this one if taken out of its situation could quite easily be described as a "U" shaped valley. However the width of the valley floor is here due to deposition by the adjoining stream. The Guilford Stream is joined from the south by the subsidiary stream and it should be noted that the floor on the south side is much flatter than the north side. It is here where most of the deposition has

Fig 9

A section of Guilford stream after being joined by a
subsidiary stream.



A section across XY see map 4 page 52

taken place. It can be seen once more that the southern valley side as soon as it has risen to 50' rises steeply to 200' without levelling out. Whereas on the northern valley side there is little flat land by the stream side and rises steeply to 100' but quickly levels out and then only rises to 130' in a half mile.

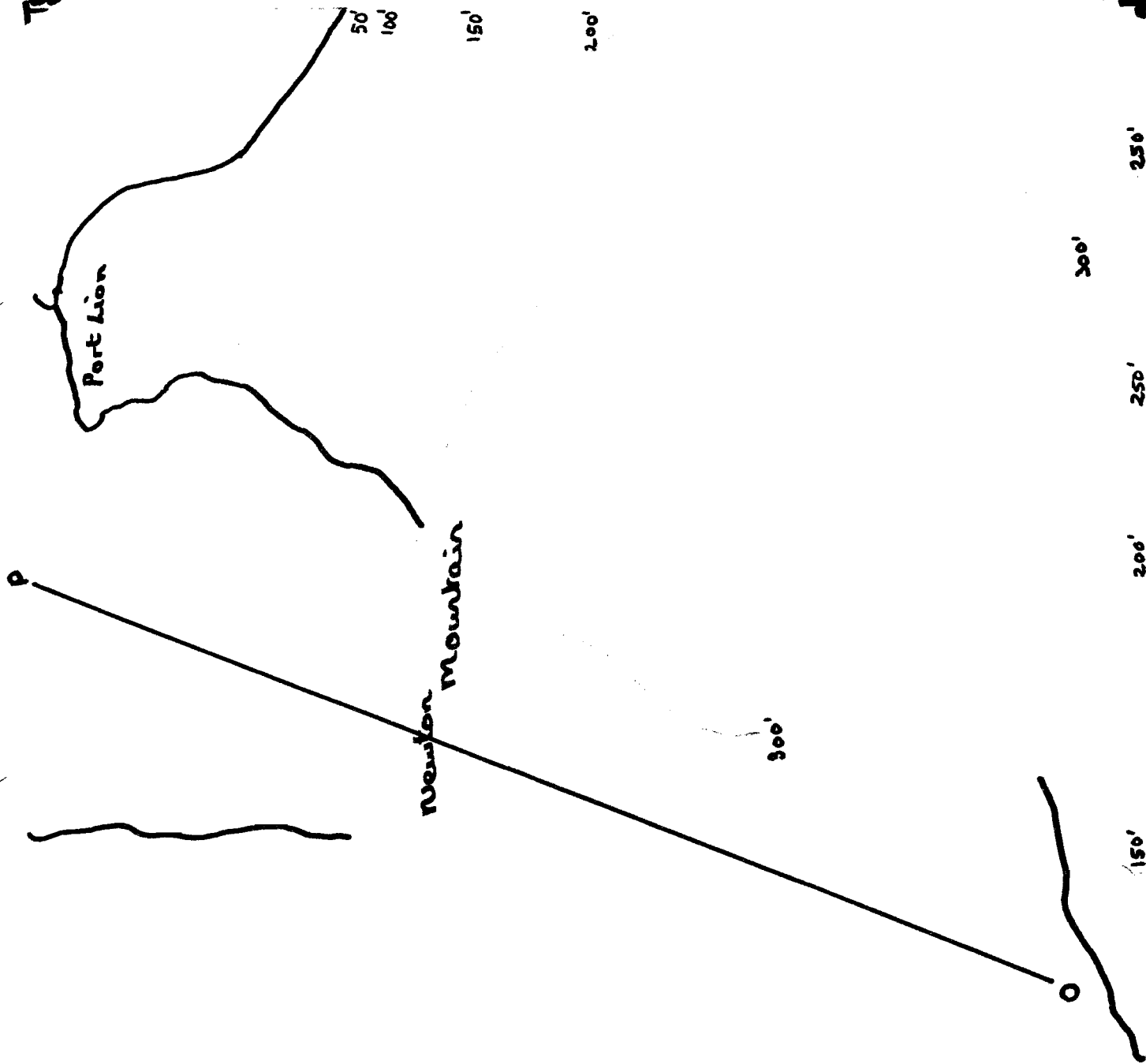
The stream at this point is carry quite a heavy load consisting of rocks of sandstone, millstone grit, basal grit, Quartz Dolomite, old red Sandstone and Rhyolite. The largest stones at this point are 4"-5" in diameter. The width of the stream here is 6'-7' and is turbulent at this point.

On page 57, there is a map of Newton Mountain with a line OP, this line represents a cross section which is found on page 58. The cross section shows clearly that Newton Mountain is a conical hill. The South West slope of this hill rises steeply towards 300', there appears to be no change in the gradient and in actual fact at this point in the slope there is no noticeable change in the gradient. However the North East slope shows considerable change. From 150' the hill rises very steeply in $\frac{1}{6}^{\text{th}}$ of a mile it rises 50'. The gradient then lessens and there

75093

1801

← 2

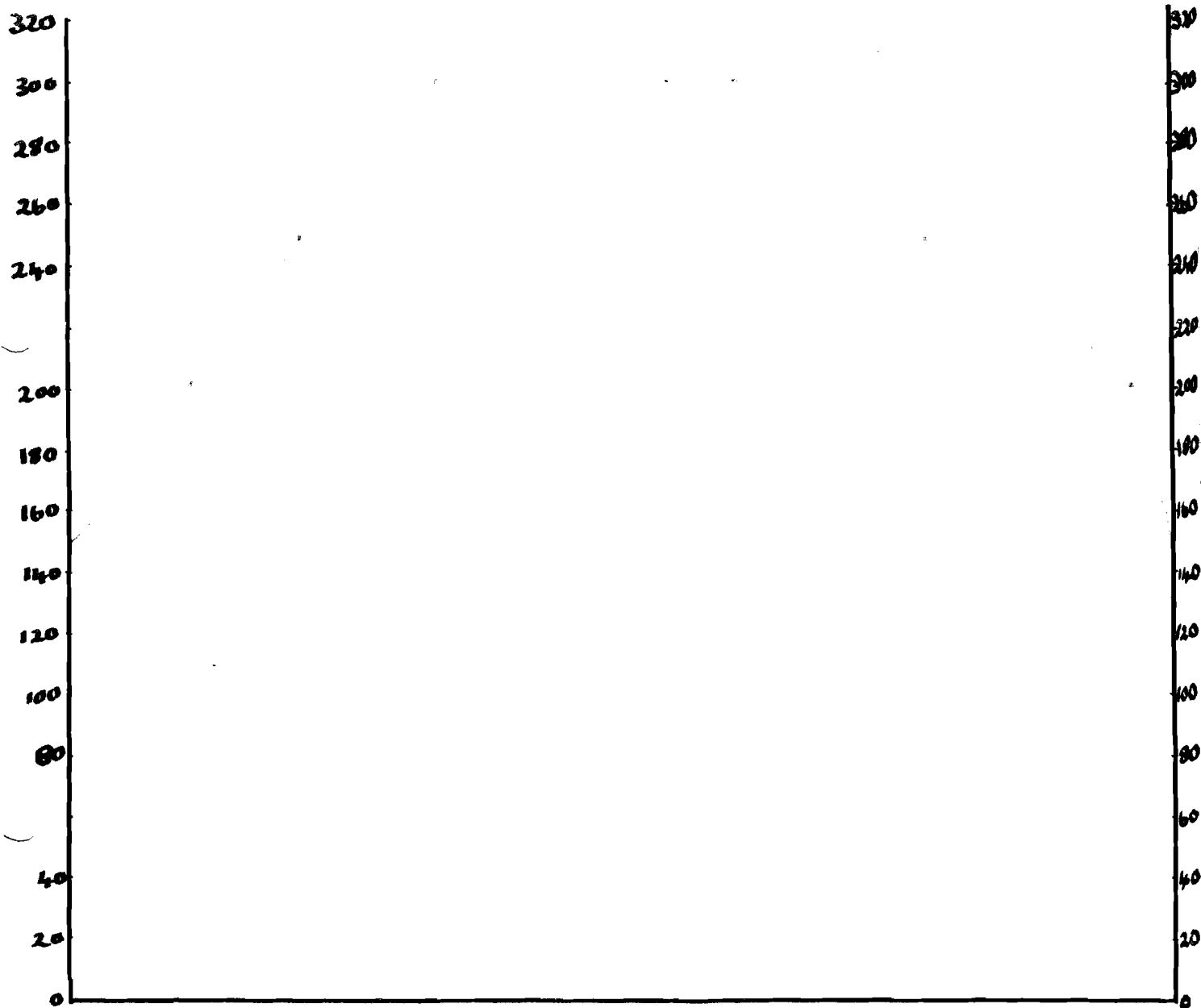


OP- cross
Section of
Newbon Mountain
see page 58.

Fig 10

58,

A section across Newton Mountain



South West
483/083

0

North
-East
793/084
P

Section OP on map 5 page 57.

is a gradual rise to 250'. Here at 250' the gradient steepens again but only rises 50' in a quarter of a mile. This change of gradient may be the effect of the two streams found either side of the line OP on page 57.

Photo 8, found on page 60, taken at point 992/093 shows the final stages of the Guilford stream as it goes to join the river Dauncleddaw. This final stage is marked as CD on page 52. It can be seen from this Photo 8, that the stream is now very weak and meanders around the mud banks which has been deposited by the stream itself. The shore here consists of mud and red sandstone grit. This Guilford stream is one of the main drainage streams for much agricultural land in the area and it also provides water for the grazing animals of the farms.

At this point of photo 8, the river Dauncleddaw envelops twice a day in its tidal sequence and at this time the signs of the stream completely disappear.

The boats seen in the foreground of this photo are those boats used for fishing, this is further discussed in the Historical | Industry chapter starting on page 66.

Photo taken at point ⁶⁰ 992 / 093.

Photo 8

Guilford Stream at low water showing river bed.



The course the stream has cut on its way to the main river Daurledan. It is now weak and shows little signs of cutting action, it meanders its way around the mud banks with little strength to cut a straight course.

Another photo which shows the valley cut by the Guilford stream is found on page 62 photo

9, One is able to see how the land in the foreground slopes down steeply towards the valley and then rises more jerkily on the opposite slope. This can be seen more clearly on the cross section page 63.

The River Dauleddaw is shown in photos 10 and 11, both to be found on page 64.

Photo 11, looks south down stream and at this point the river is $\frac{1}{2}$ mile in width approximately. Taken from the same point Photo 12, looks upstream.

One is able to get the general impression of the landscape around the riverside but the far side of the river is not included in my study area. It can be seen however that there is no general pattern for the landscape at the riverside and in places it rises steeply 50'-100' and in other places the land immediately by the river only rises to 10'.

The soil in the foreground is gilly consisting of red sandstone grit and loamy soil and sand. This grades down to slimy thick soil which acts like quick sand when stood on if it is still wet, and it is only in a very hot summer when this

Photo taken from 990/088.

Photo 9

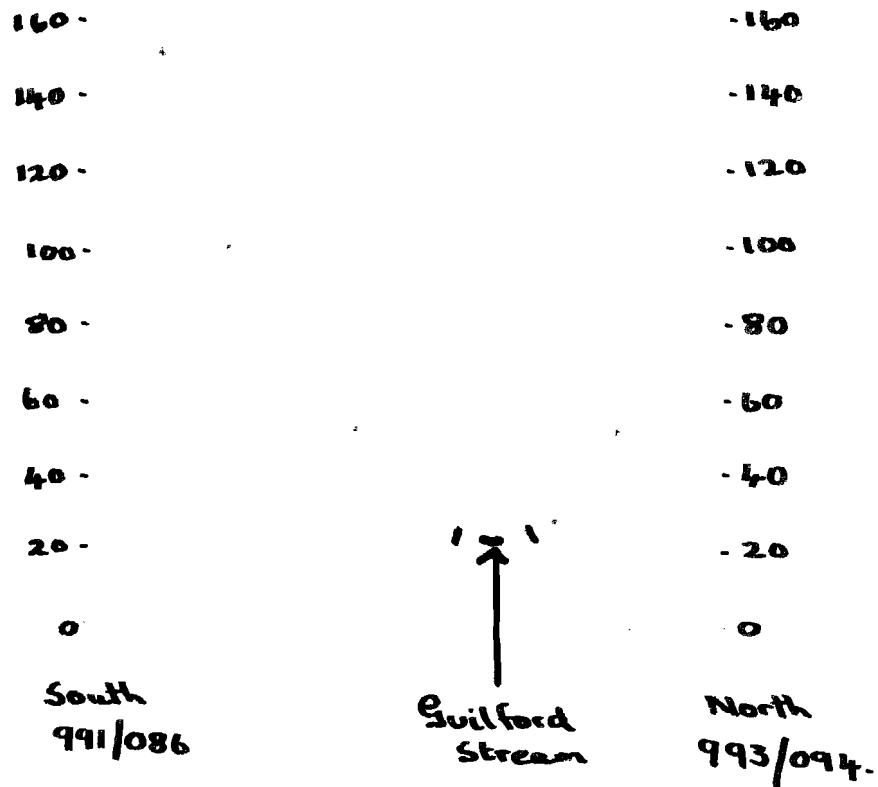
Main Valley in the section allocated.



The stream which has cut this valley is the one which runs from 966/098 to join the Daucledau at 997/092.

↑
N. It has taken a long time to cut this valley and has now lost its vigour and quietly runs in the floor cut for itself.

The soil in this vicinity is very rich and loamy and in the foreground of this picture can be seen a potato field which produces a large crop per year.

Fig 11.Section along Guilford valley from point 991/086 to 993/094

also see photo 9 page 62.

/ 1 - marks shoreline

photo 11

64/
Two views of the river Dancledan. taken from 996/087

and rising
gently on
eastern side of
the river.

land
rises steeply
50'-100'



← N

red sandstone loamy soil.

Photo 12

Land rises
gently. to
10'

slimy soil
which acts
like quick sand

Land rises
steeply to
approx 50'



↖ N

mud ever dries and then only for a few short hours.

It can be seen therefore that the relief and drainage is not too complicated in this area and both are directed towards the River Dancleddaw.

History and Industry.

The industry of this area also forms the history as that is all that remains of industry in the vicinity. At one time there were two thriving industries that of coal mining and fishing.

First of all I will take the coal mining industry. Hook Colliery is situated at point 976/108 and here rich deposits of anthracite are to be found. Legend has it that in 1200 A.D. Spaniards bound for Cornwall for tin were blown off course by heavy gales, and found themselves in the Milford Estuary. They followed this up to Hook point 978/117, on the Western Cleddau, here they saw the people burning what the natives called "stone coal". Thinking this would be better than charcoal for tin-smelting, they obtained a sample, and months later returned, bartering daffodil bulbs in exchange for coal. Up to a few years ago, wild daffodils were prolific in Hook. It is also said that in 1200 A.D. 2,000 tons of coal were shipped out of Milford Harbour from Hook as against 10 tons from Cardiff.

In 1596 George Owen, Lord of Cemaes wrote that the men used to sink shallow pits, four to six yards deep near outcrops of the seam, and women used to haul the coal up by means of

of windlasses. The women used to carry the coal on donkeys, and sell it by the bag. Later on, ox-waggons were used and ox roads can still be seen to-day an example of this is point 990/102 to point 993/110. In 1835 the first steam-driven machinery was introduced at Green pit 976/108 see also photo 13, page 71. From 1835 to 1947 Hook Colliery became very busy and approximately 9-12 shafts were sunk. In the early 1930's as much as 1500 tons of coal were being mined every week.

In the 1890's a great quantity of coal was shipped to Singapore for tin-smelting; this coal was carried in large sailing-ships of five to six thousands tons, which were loaded by barge in deep water at Mangum Pool point 990/12'1. During the 1914-1918 War the coal was exported chiefly to France, and the Colliery Company bought a fleet of ships for this purpose. In 1929 a railway was constructed from Hook to Johnston to enable coal to be taken to large ships at Milford and Swansea.

In 1947 the National Coal Board drifted a seam in the only untouched part of the village at East Hook, see map 6, page 70, but on

account of a stratum of water the attempt was abandoned. This water then gradually seeped into other seams in the locality and finally progressed to the Colliery itself, due to this flooding the Colliery closed down in 1947 and Hook ceased to be a mining village.

The map on page 70, shows the area of Hook Colliery, this also can be seen on photo 13, page 71. This is all what remains in Hook to remind people that once the village was a prosperous mining area. Even the coal tips have been removed, the slag being used in furnaces.

Many of the miners remained in the area so I was able to glean the historical information about this once flourishing industry from them. The miners themselves feel that Hook Colliery would still be open if it had not been for the flooding making the area very unsafe and prone to subsidence. It was not however economic for the coal board to bring in expensive equipment to pump out the flood water and stabilise the area as there was only one colliery.

At the time of ~~the~~ closure there were

Map 6

Map to show Hook Colliery and shafts.

● = shafts

Scale = 6" = 1 statute mile

92
1122

92
1122

Western Cleddau

Longwood
Underwood

Dungeon
Hill

East Hook

Hook Colliery

701

92
1122

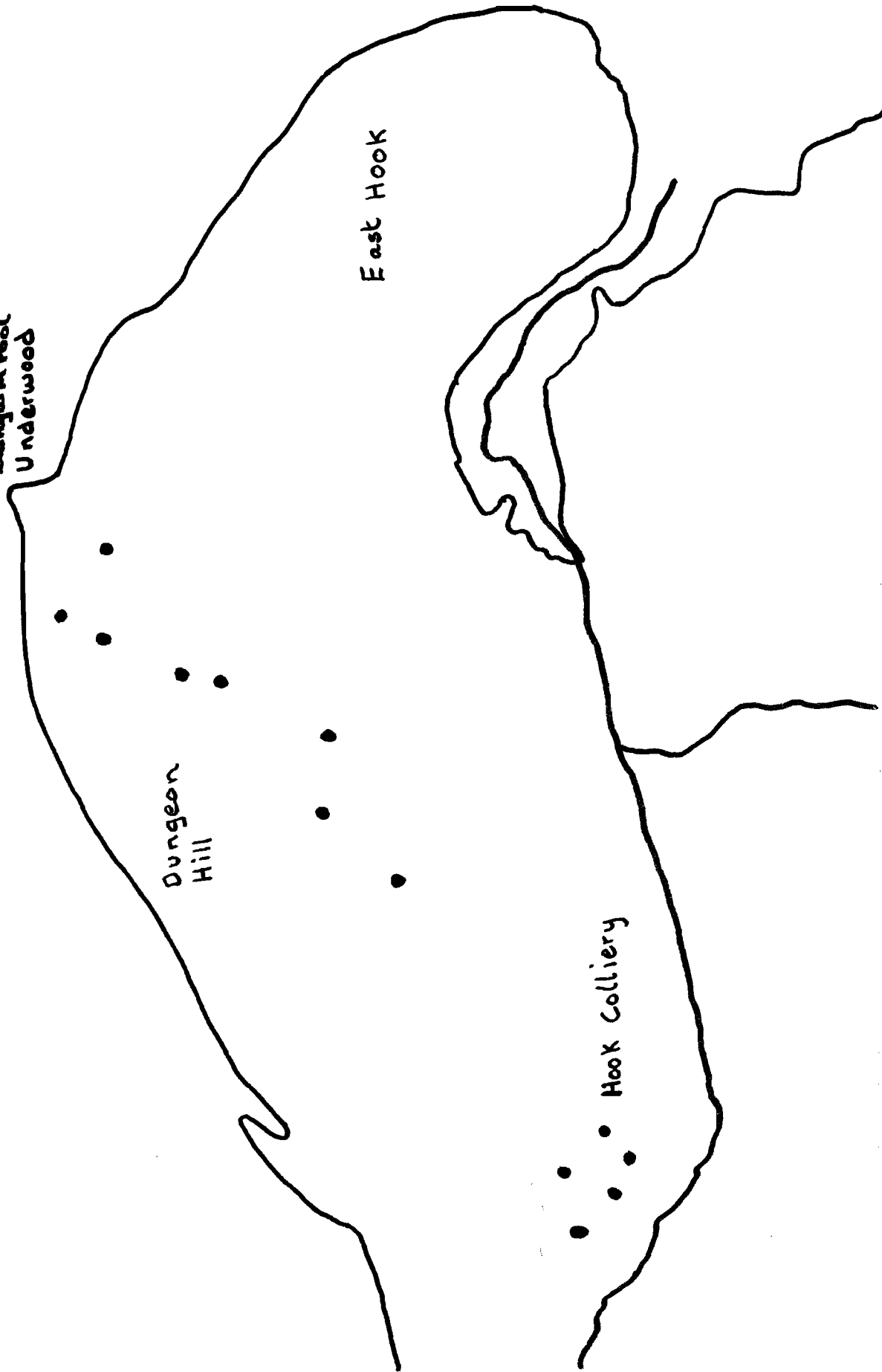
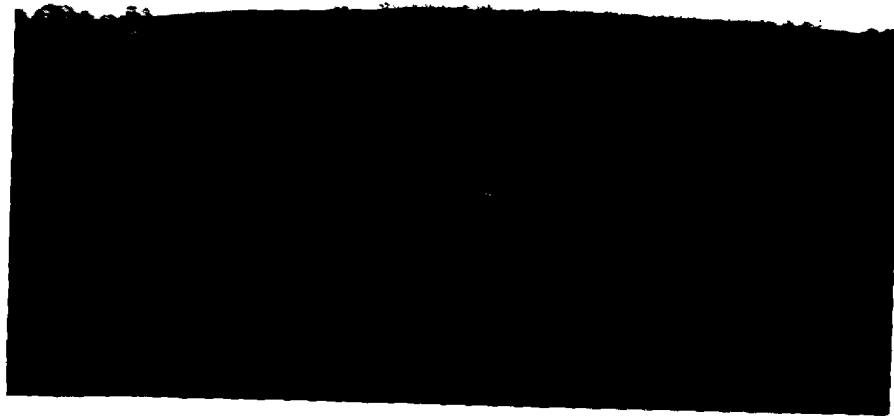


Photo taken at point 71/979/110.

Photo 13

Hook Colliery



N
↓

⌋ Hook colliery

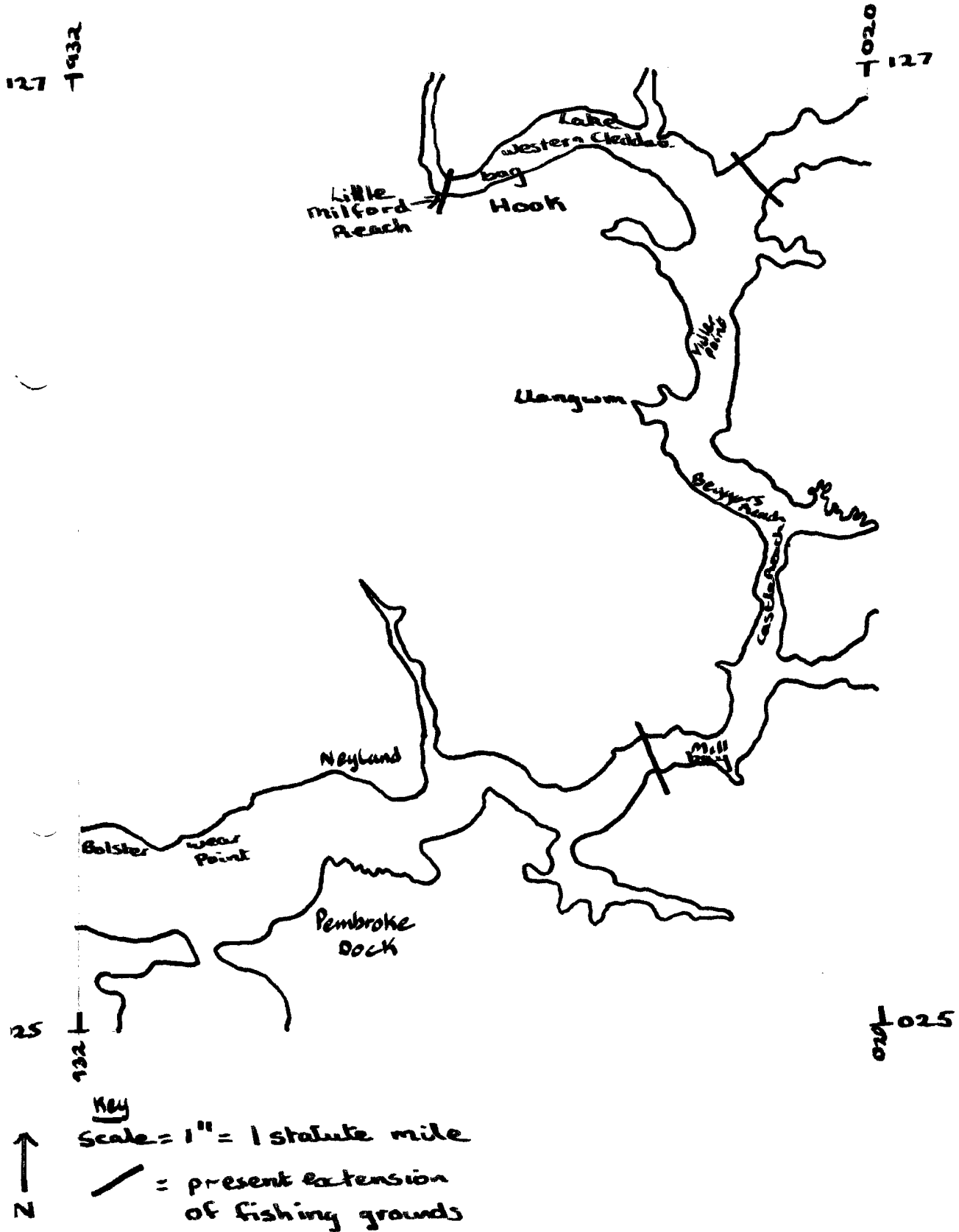
Hook Colliery now closed surrounded by agriculture. Those marked "x" are used for hay and corn those marked "o" used for potatoes in their due seasons.

120 men working at the colliery, most of whom stayed in the area to find new jobs, many of whom learnt a new trade.

I now intend to go on to the next topic which comes under the heading of History and Industry. The industry is that of fishing which has now declined to a pleasure sport, although some villagers do catch fish to sell it is not their livelihood but a way of earning extra money.

The area was unlimitless for fishing in bygone days but the main area for those fishing from Margum is shown on map 7, page 73. In previous days all the river shown on the map was used but now the fishing grounds are limited to the lines 1 1. In the early days of this fishing industry it was always first come, first served. If the fishermen wanted a good catch they would row their boats to the best fishing spot and sleep there in the boat until it was time to set the nets. The fishermen would row upstream to the Western Cleddau for Salmon and down stream towards open sea for herrings and cod. It was in these early days when fishing as an industry

map 7

map to show previous and Present Fishing grounds.

was at its highest point. Harquon was twelve miles from open sea but it was still very important for its fishing industry.

Fishing used to be the main occupation of the villagers and the fish that were caught were salmon, cod and herrings. In addition the women went cockling and occasionally the men would set out for prawns. Oysters were also taken from the river bed and sold to Hotels at Tenby.

The fishing would mostly be done at night and on the return of the boats the wives of the fishermen would walk to the shore and help pick out the fish from the nets. The fish would then be packed into baskets known as panniers which would be carried by the women folk in their hands and on their backs. When the baskets were full, the women would set off on a seven mile walk to Haverfordwest where they would sell the fish. If any fish had not been sold by the time they were to leave Haverfordwest the women would stop off at the villages en route to Harquon to sell the remaining fish. The men would also ferry the women

over to landshipping, from where they would walk about fifteen to twenty miles to Tenby to sell, herrings, salmon, cod, cockles, and oysters to the hotels. [For routes taken see map 8 page 76]. While the women were out selling the fish, the men would mend the nets, clean the boats and see that the boat was in good condition for the next evenings fishing.

It was therefore a time of hardship for the women, who besides having to prepare meals, clean the house and see to the children, had to walk many miles to sell the fish which was caught during the night.

* Now however the fishing is greatly reduced. Whereas there used to be 70-80 boats concerned with the salmon fishing alone, there are now only 8. This is due to the fact that a certain amount of licenses were allocated to the area and now only 8 exist. This does not mean however that there are only 8 boats associated with fishing, there are many others, approximately twenty-four, but these are concerned with herring fishing. The herring fishing is carried out in an entirely different way to salmon

Map 8Map to show area where fish used
to be sold.

The --f-->... shows the route taken by the women to and from their destination. It was approximately seven miles to Haverfordwest and about fifteen to twenty miles to Tenby. The men used to take the women across the river to landshipping in the boats and then would return in the evening to take them back home.



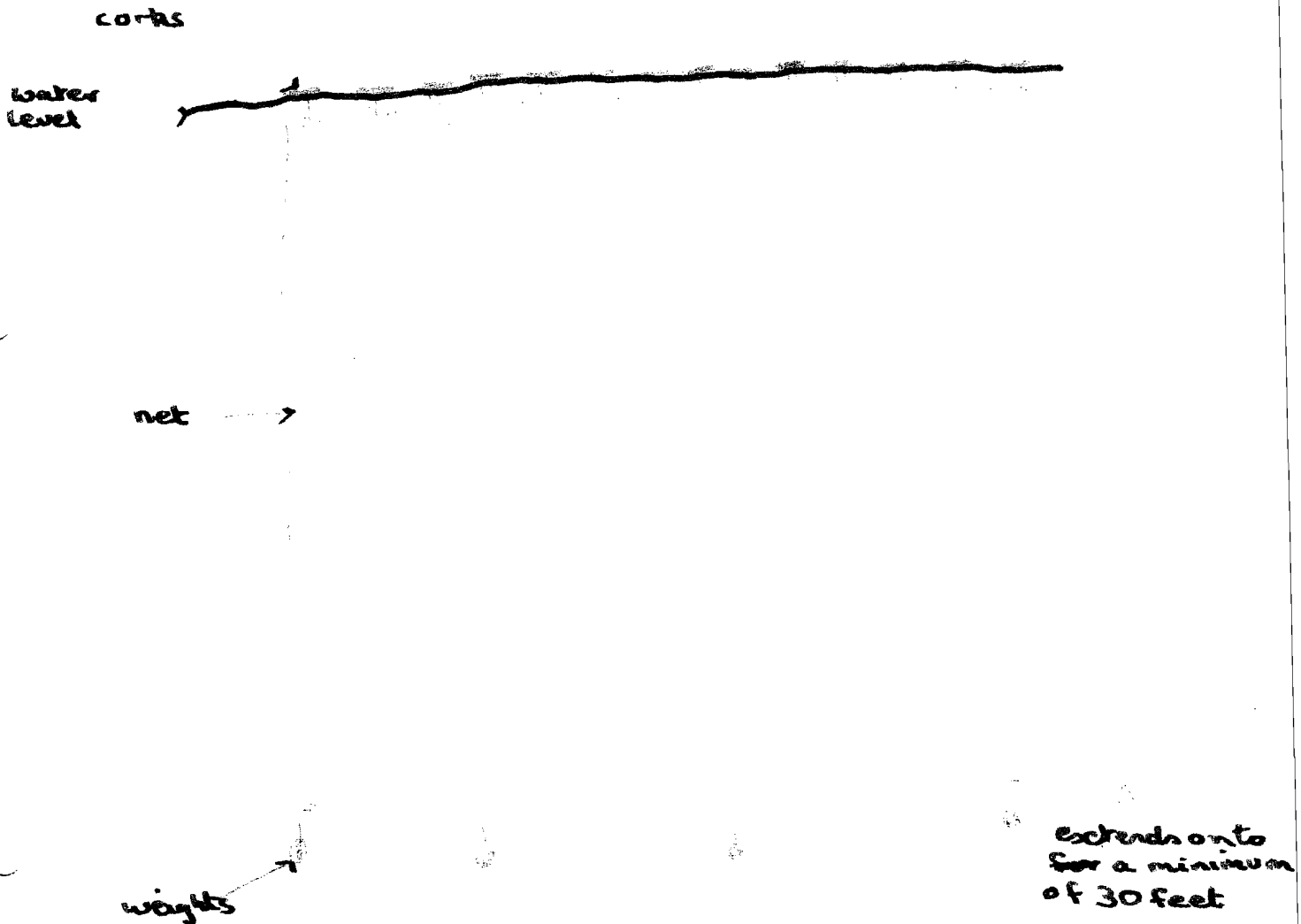
↑
N

Scale approx 1" = 10 miles.

salmon fishing.

The boats go downstream as far as Mill Bay see map 7, page 73, for herring fishing. This is mainly done at night with the "fleet" returning to the shore in the early hours of the morning with the morning tide. The nets set for herrings is like the drifter nets, it has corks to keep it afloat and weights to keep it down straight see sketch on page 78. The net is set while the tide is on the turn and the herrings are then caught when they swim upstream at high tide. The boat is set at right angles to the water flow and the net is thrown over the back of the boat so the herrings will come into contact with the net when swimming in the river, see sketch on page 79. The times of the herring fishing therefore depends on the times of the tide.

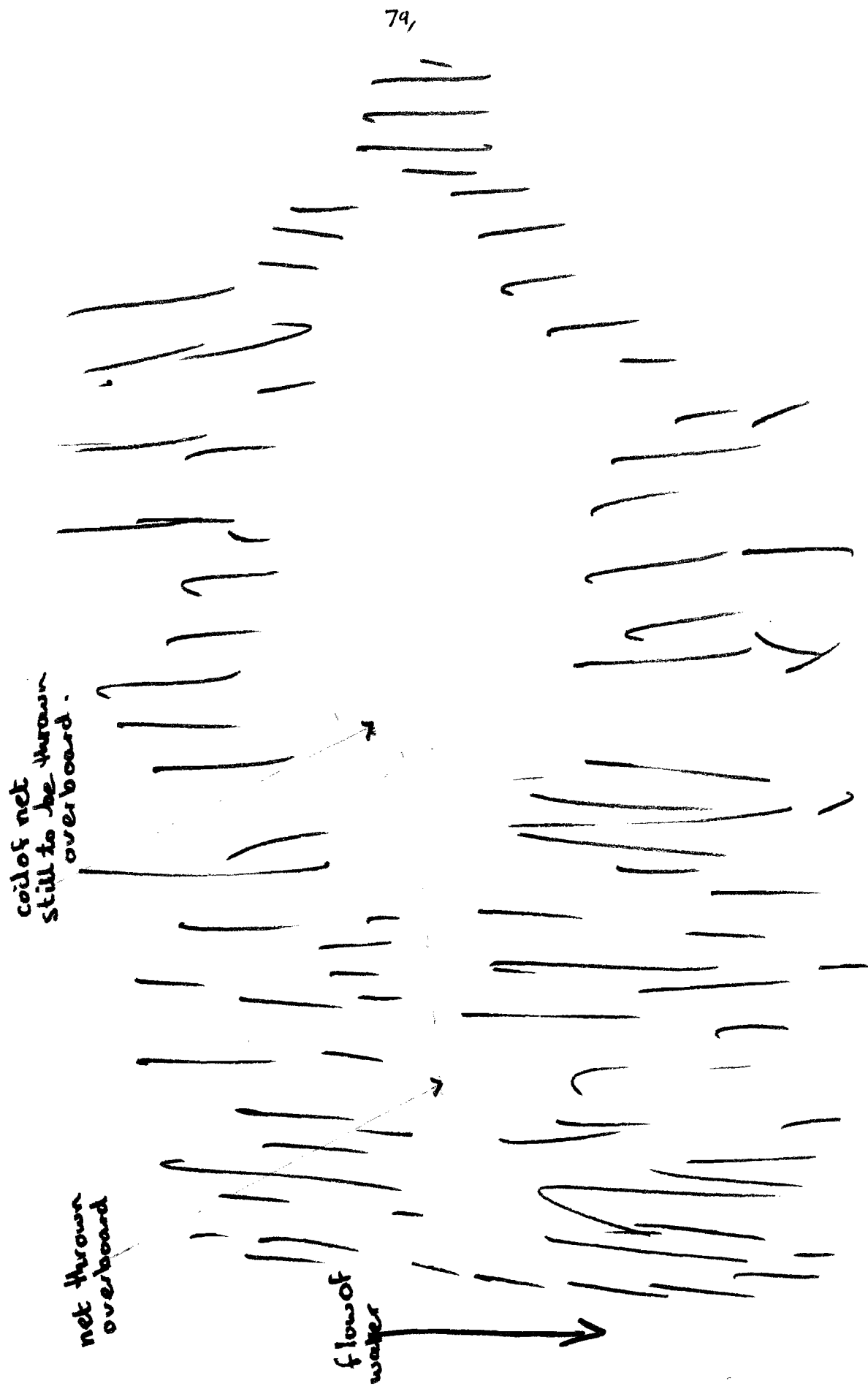
The fishing area for Salmon has now been allocated by the River Board Authorities. The stakes have been cut back to Little Milford Reach thus giving the men less area to work in. The men take it in turns to use the best stakes so that everyone has a share in the good and bad fortune. The River Board Authorities have also

Fig 12.Sketch of the net used in Herring fishing

These ~~net~~ nets are usually about 15'-20' in height and may stretch for 40'-60' some are even longer. The gills of the herrings are caught in the netting when they swim upstream.

Fig 13

Sketch of fisherman setting herring net.



cut the times of fishing for salmon. The times now allocated to them is from mid day Monday until six o'clock Saturday morning.

The boats for salmon fishing set off upstream three hours after the beginning of the ebb, most of the fishing for the salmon is done in the reaches of Little Milford, the Lake and the Bay.

The nets used for salmon fishing is the compass net. It is called this due to the structure of the poles, see sketch of a compass net on page 81. The poles used for this compass net is made of larch, and they are buried in the mud, to harden the wood, before they are used. Sometimes they are left for twenty years in the mud if they are not needed before. Two larch poles, twelve feet in length are needed for the making of these nets. These are attached at one end, this makes them look like a compass. At the end where they are attached are to be found flat stones which act as a counterbalance when launching the net - see sketch on page 81.

There is a feeler line attached to the cod end of the net, if a fish enters the net the shock entry would be felt along the feeler line. Then it would

Fig 14

A sketch of a compass net used in
Salmon fishing.

Poles crossed
 at this end

12' Long

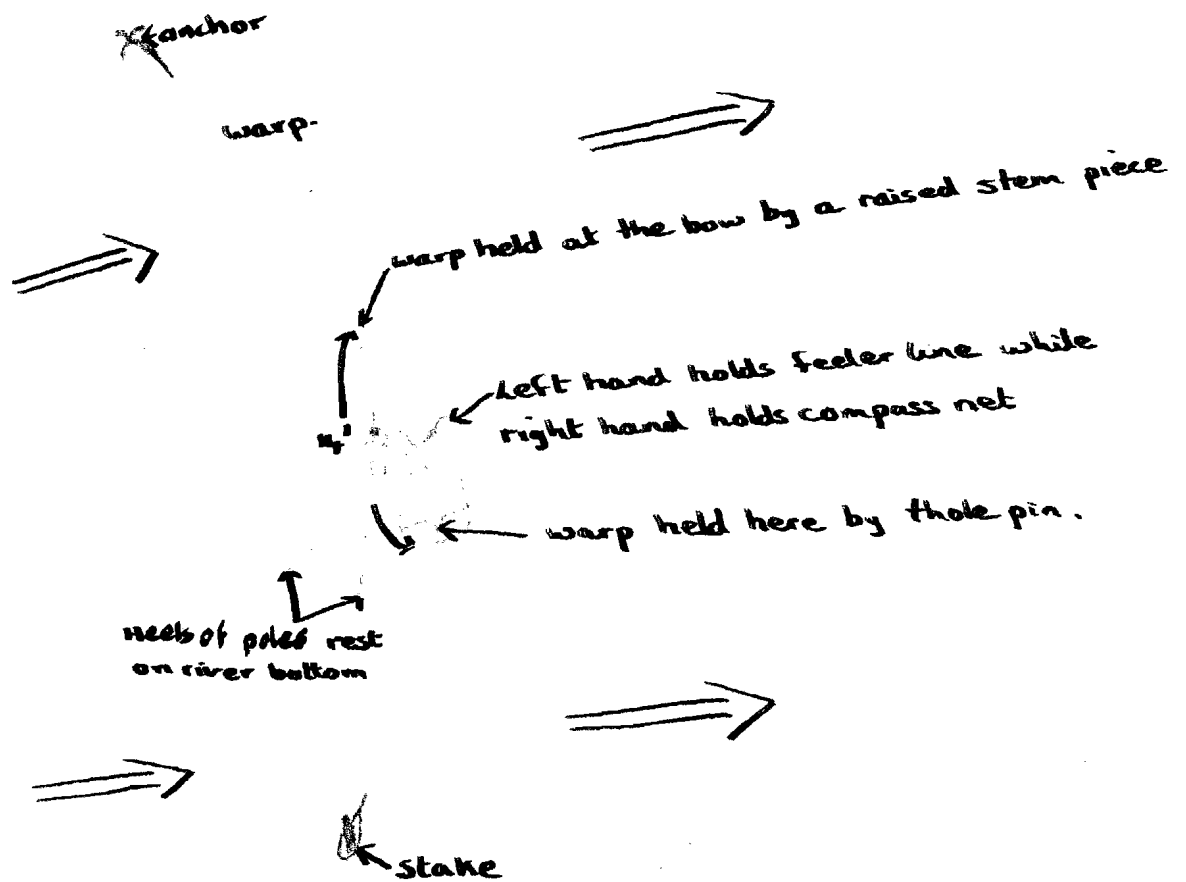
flat stones acting
 as a counterbalance

net

be the work of a moment to heave the head of the poles and lift the mouth of the net out of the water.

When the boats reach their destination the fishermen get ready to make their boats firm. They do this by the use of stakes on either side of the river. These stakes show at the riverside two hours after high water. Around each stake is tied the warp of each boat, to the other end of the warp is the anchor which is dug into the mud to keep the boat firm, this is seen more clearly in the sketch on page 83. The boat is now secure for the warp is held at the bow by a raised stem-piece and at the stern by a thole-pin.

To launch the net the fourteen foot long boat has to be rocked back and forth, the poles are then slid down to the river bed with the apex or joined end in the air above the boat. This rocking of the boat has to be done with perfect balance and timing, for the gunwale of the boat is brought within two inches of the tide. If the gunwale is brought under the surface of the water the whole boat will capsize because the net is launched when the

Fig 15.Sketch to show Salmon fishing in progress

⇒ direction of the flow of the tide
mud at the riverside.

ebb is at its vicinus

Salmon fishing here is no longer an occupation but a pastime, mostly for the older fishermen, for it is they who hold the eight licences issued. This was and is a very skilful thing to do and relies on balance and perfect timing. Salmon fishing like herring fishing depends on the tide for the boats set out three hours after the beginning of the ebb.

Of these two types of fishing herring fishing is the most common in the village of Hlangwm which is still known in the county as the "Herrin village." As I have said before no-one now depends on herring fishing for an occupation but rather use it as a sport and a way to earn extra money. The women still go down when the boats come in to pick the fish out of the nets. Now however the fish is not sold by the women but local shops in Pembrokeshire send special fish lorries down to Hlangwm shore to collect the freshly caught herrings. I would not however call it an industry although once it was a thriving, flourishing industry with approximately half the village connected with it.

It can be seen that this study area has been unfortunate in its two industries, firstly the closure of Hook Colliery and then the decline of the fishing industry. Perhaps after reading this chapter one will realise why the title of was combined History and Industry. However History will also be brought into following chapters especially Social and Urban Geography.

Agriculture.

The vast majority of land in this area is covered by farmland. That land which is not used for housing or roads is occupied by the farmers, even that land which was used in coal mining has been reclaimed by the farmers, except for the colliery itself. There are thirteen farms in the area four of which are smallholdings. Those smallholdings under ten acres have been omitted as they are too numerous to mention.

When this area was first settled the object of the farmers was to provide the people with eggs, milk, butter, bacon and meat. To-day however this is no longer true, the farmers are out to get as much profit as possible.

The type of farming carried out in this area is mixed farming, this being due to the climate. The springs here are exceptionally mild and are usually free from frost. This climate has influenced the farmers a great deal who have taken advantage of the frost free spring days and have turned much of their concern to setting early potatoes. There is a big market for early potatoes, the farmers

knowing this set a great deal of their land with early potatoes.

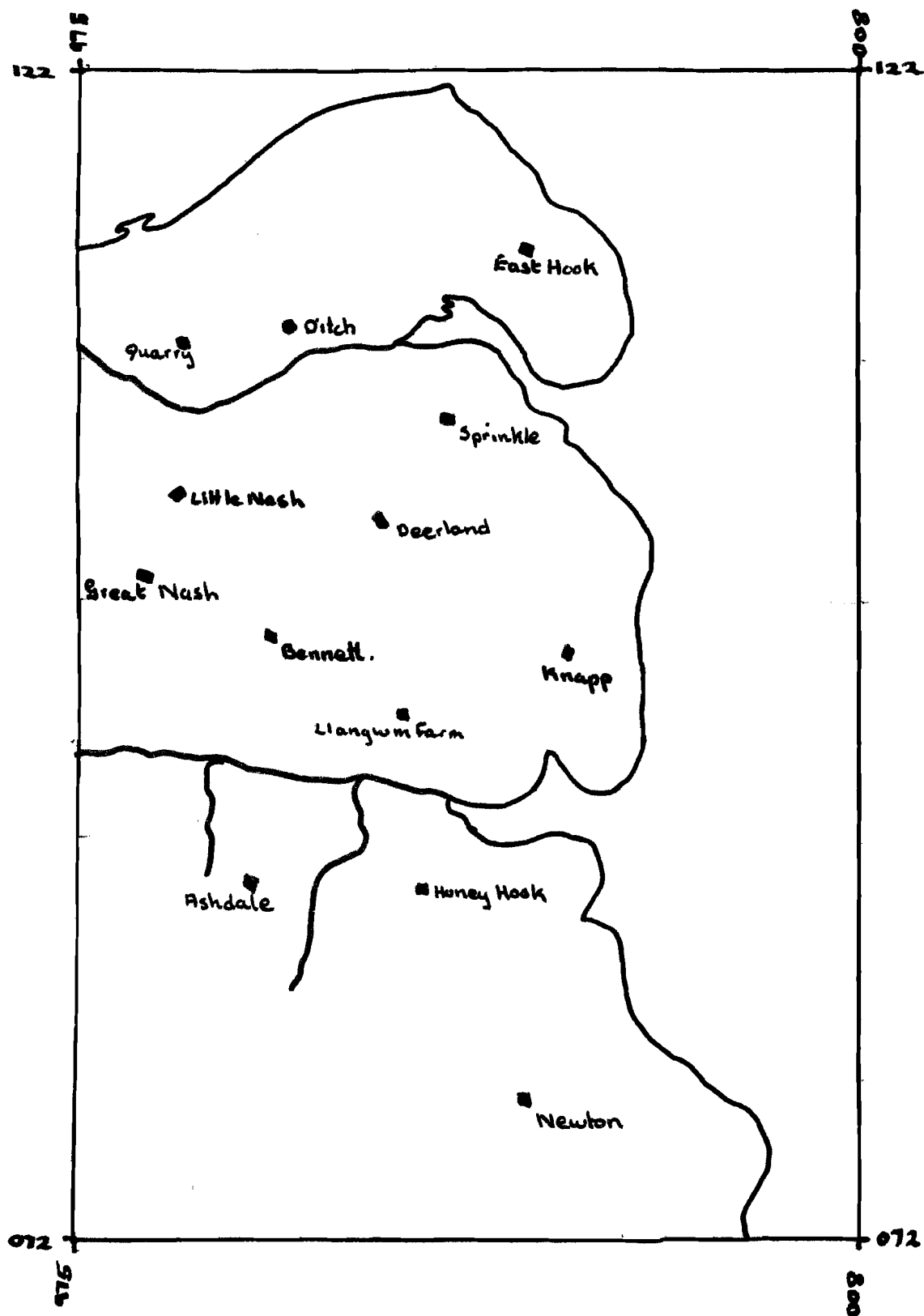
With this area being so richly endowed in agricultural land I will describe each farm activity in turn noting which farms partake in the activity + those which do not.

The map on page 89 shows the location of the farms. The majority of these farms are situated near areas of population, the reason for this goes back to the early settlement, when farming was a case for providing for the people. Newton, Ashdale, East Hook and Sprinkle are the only farms away from areas of population, these were built after the attention of farming was turned to making a profit.

It has been said that early potatoes is an important crop in this area, and it is with this crop that I will start my study.

The graph on page 90 shows that all but the smallest farms are engaged with early potatoes. Of all the farms however only Newton sets over half of the land with potatoes. The reason for this, is that Newton farm is part of a syndicate and this land produces better and more potatoes per acre than land on farms in the rest

map to show distribution of farms in study area



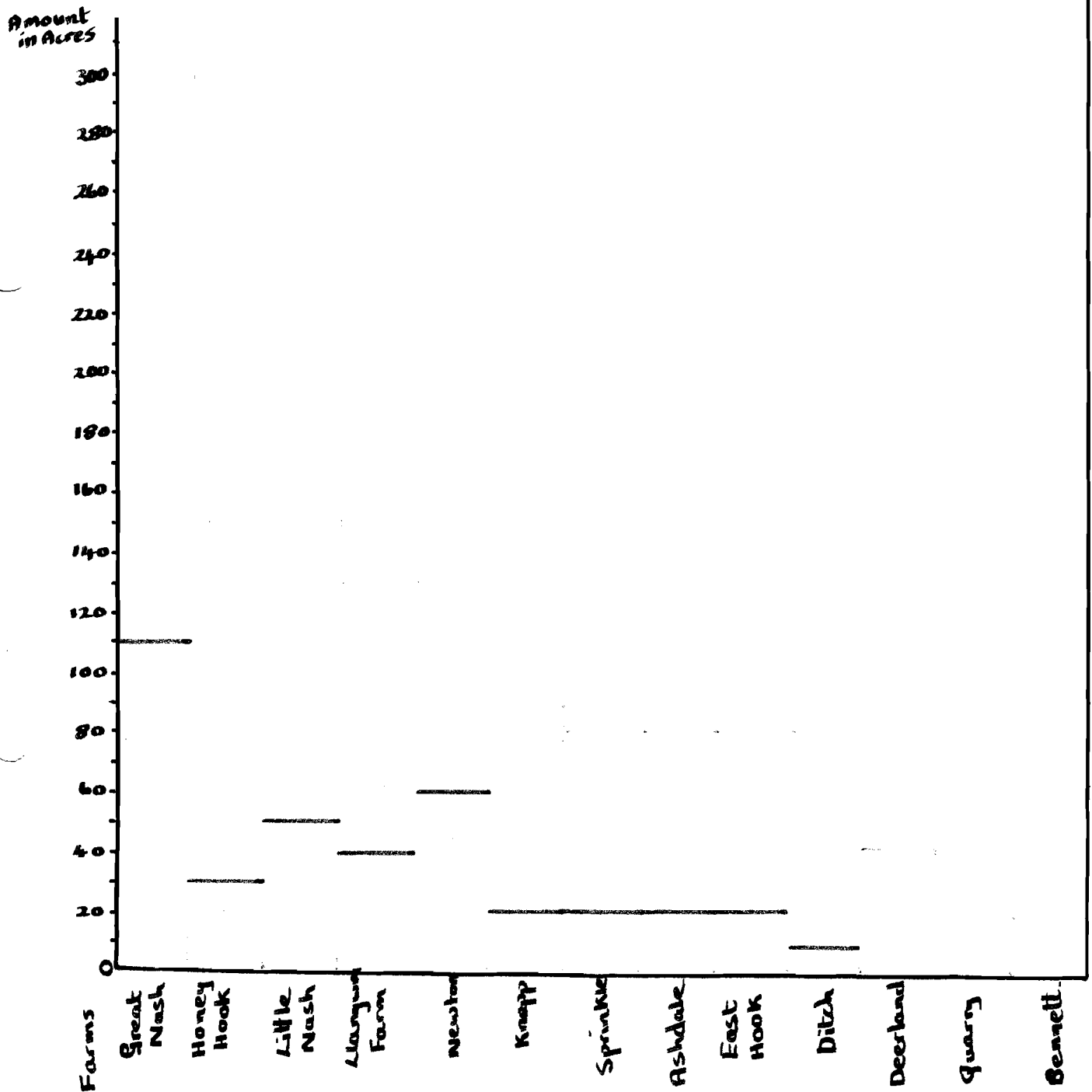
Key

■ = farm houses

Scale $2\frac{1}{2}" = 1$ statute mile.

Fig 17

Graph to show proportion of land under
potatoes on each Farm



of the syndicate.

During conversation the farmers said that amount of potatoes sown each year varies. I asked the reason for this and it is due to the success of the crop on the previous year, also the estimated market for potatoes influence the farmers at the time of planting.

One may think that the potato crop is a simple crop to grow, but there is more to planting and the picking of the potatoes. Some farmers in the area keep their own seed potatoes an example of this is Knapp, Great Wash and Honey Hook. Those potatoes which are kept for planting are stored in sheds after the potato harvest. During the beginning of the winter the potatoes are sorted and chined, chining is the processes whereby the chimes, or sprouting pieces on the potato are knocked off. This sorting and chining is usually done by the local women.

In December and January the potatoes are again sorted, this time the potatoes are put in potato trays ready for planting. The chimes are not taken off this time unless they are very long. The farmer now takes special note of the weather, to see if he thinks the best of

the winters frosts have arrived. If the winter has been a very mild one the potatoes may be planted earlier than usual about mid February. If however the winter has been severe the farmer waits until mid March before planting any of his potatoes. Usually the potatoes are planted at the beginning of March.

The potatoes are then left to grow. When the summer arrives the farmer is on the watch for drought because to get a good crop the potatoes need a good amount of water. All the farmers have some means of irrigation, some use the stream water while others have made special irrigation ponds. Newton farm, see map 9 page 89, for location, has two irrigation ponds and Knapp has one irrigation pond. Honey Hook has its own well which has never been known to dry up and that is the source of irrigation water when needed for the potatoes.

The time for picking the potatoes I am informed depends on three circumstances, firstly the market, secondly the crop and thirdly the weather. If the market stands at a high price the farmer will unearth his

potatoes even if they have not grown to full size. If the market price is not high the potatoes are usually left in to grow more, however if the potatoes have finished growing and the market price does not rise the potatoes are unearthed and sold because other crops will be delayed due to the time spent on the potato crop. The weather is a minor circumstance in one respect and that is at the time of picking, but the weather effects both the market and the crop. It effects the markets, because if it has been good potato growing weather that is sufficient rain and sunshine there will be a bumper potato crop more than the market requires ^{thus the} ^{early June to July} market price would be low. The usual picking time is,

Both the planting and the picking of potatoes is done by hand. The majority of the people are women who do this work, thus making it cheap for the farmer who only has to employ casual labour, therefore if it rains the farmer does not have to pay out a wage not being earned. Three farms in the area, Honey Hook, Llangwm Farm and Great Nash tried setting the potatoes by machinery but they found that the machine would often misset the potatoes

thus decreasing the potentialities of a good crop, so all three farms reverted to hand planting.

I asked the farmers if they received any government subsidies for selling early potatoes, but they seemed unwilling to answer. However the farmer at Honey Hook said that the government helps them if they cannot sell all their potatoes, apparently they get bought at a cheaper rate for cattle feed, before they are resold for this purpose they get dipped in purple dye so that they cannot be re-sold to householders.

After the potato harvest the fields are set with dry grass and sometimes mustard seed is added. This is left to grow and then sheep are taken to the fields to graze, the sheep are kept in these fields until it is ready for the soils to be tilled and dressed for potatoes, this would be in February. Other crops which are grown in the potato fields after the harvest is mangel-wurzel and rape. These are dug up and stored for winter crops for the cattle. Kale is also a crop which is sown on potato fields. This winter crop in the area is usually eaten in the field by the cattle. An electric wire fence is used to section off the amount of kale allowed the

cattle, too much fresh kale sometimes leads to bloat in cattle and sometimes the animal has to be killed if it gets a severe attack of bloat.

Corn and hay are two crops of importance on these farms. A graph of the amount in acres is under hay and corn is found on page 96. It can be seen that the majority of farms have approximately half or more of their land under these two crops. The only two farms that don't come under this category are ~~g~~ Great Wash and Newton.

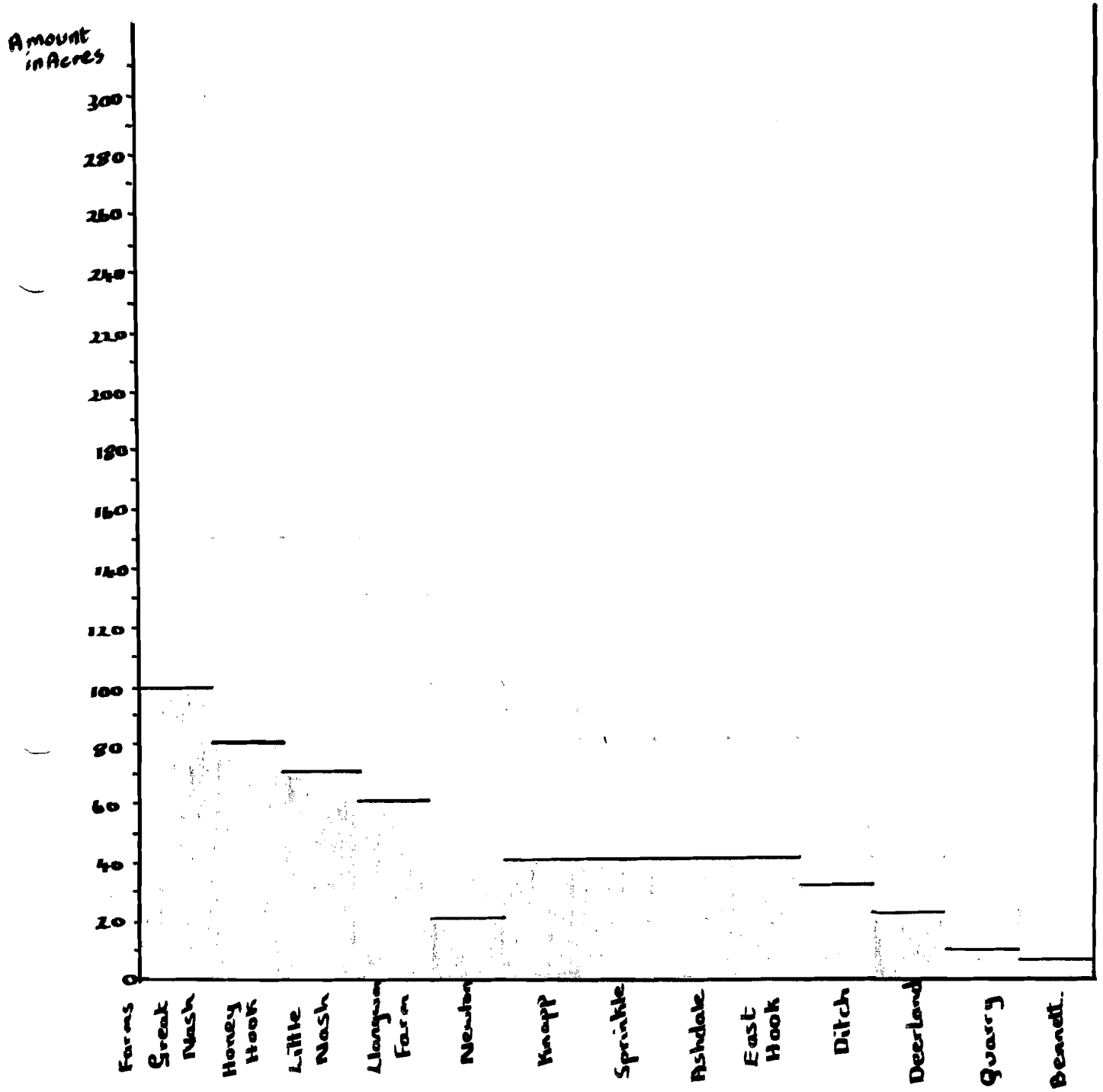
Newton is the farm that comes under the syndicate, mentioned on page 92, the hay here is used for winter fodder for the animals, the corn is also used for feed and none is sold. Great Wash has $\frac{1}{3}$ rd of its land under corn and hay and little of this is sold because they have great number of cattle to feed in the winter.

On the whole most of these crops is kept by the farmers themselves, but if the crop has been exceptionally good they will sell some of it at the local market, situated seven miles away at Haverfordwest see map 1 page 6.

The corn and hay is set to-gether in March and April. This setting is done by hand using the scattering method of Bible times.

Fig 17

Graph to show proportion of land under
corn and hay on each farm



This is then raked in by machinery and left to grow. It is the corn which is first to appear and while it is growing the farmer watches the ears of corn carefully for pests and disease. If the farmer fears that his crop is going to be decimated by pests or disease he sprays them with insecticides and other chemicals, however the farmers in this area are none too happy about using chemicals on their crops and try not to use it only in emergencies.

When the corn is ready in late June, July/August, depending on the summer, the farmer prepares to gather in his crop. None of the farmers own a combine harvester so as soon as the farmer sees that his crop is nearly ripe he arranges a date for the harvester to come and cut a particular field. The bags of corn are straightway taken to sheds used for storing on the farm. Some farmers leave them in sacks but others like Honey Hook farm empty the sacks so that the corn dries quicker and better.

The stalks of the corn are then baled and stored in sheds. This baling does not take place immediately but the straw is left out to dry

as much as possible before it is baled.

Most of the farmers used the corn mill to roll or squeeze the corn, it is not ground down to a powder form but broken up. This broken up corn is then stored in sacks until it is needed for use. This when given to the cattle is mixed with cow cake and oat meal.

The corn which is sold is either left whole or powdered, the majority of corn sold is sold whole but there is not much sold in this area.

It is only when the corn has been cut that the hay which was sown at the same time starts to come through the soil. This hay grows slowly through the winter until the following may. It is now in may, 13 months to 14 months after sowing that the hay can be cut. If the winter has been exceptionally mild and there has been enough sun in the early part of the year the hay may be cut in April. If this happens to be the case the farmer may be able to use that field for corn and hay again the following year otherwise he will use it for grazing for a year before resetting in corn and hay.

The hay when cut is left out to

dry and is usually turned two to three times before it is baled. After the hay has been baled the bales are left out again to dry before it is collected in and stored in sheds, usually without sides. Very little of this hay is sold but is used for feeding the animals in winter.

The remainder of the land on these farms is used for grazing, cows, beef cattle and sheep are to be found on all but the Quarry and Bennett farm. The Quarry farm is only used for beef cattle and hay is grown there for winter fodder. The reason why only beef cattle are kept is because the owner is a butcher and keeps beef to make extra profit in his butchery business. Bennett farm is mainly a hay farm or smallholding, only being 10 acres, he uses some hay himself but often sells some to local farmers who are short of winter fodder.

Sheep are only kept on this grazing land while the potato land is being dressed for potatoes and planted with potatoes. This is only for a few months because the farmers in this district have the policy of selling the sheep once fattened after lambing and buying more sheep for the

winter months. Not many sheep are kept in this area, farms such as Honey Hook, Little Wash and Hargum Farm keep about 100 sheep each and Great Wash 150 sheep. The other farmers keep up to 50 sheep. Sheep farming here is not done on a large scale.

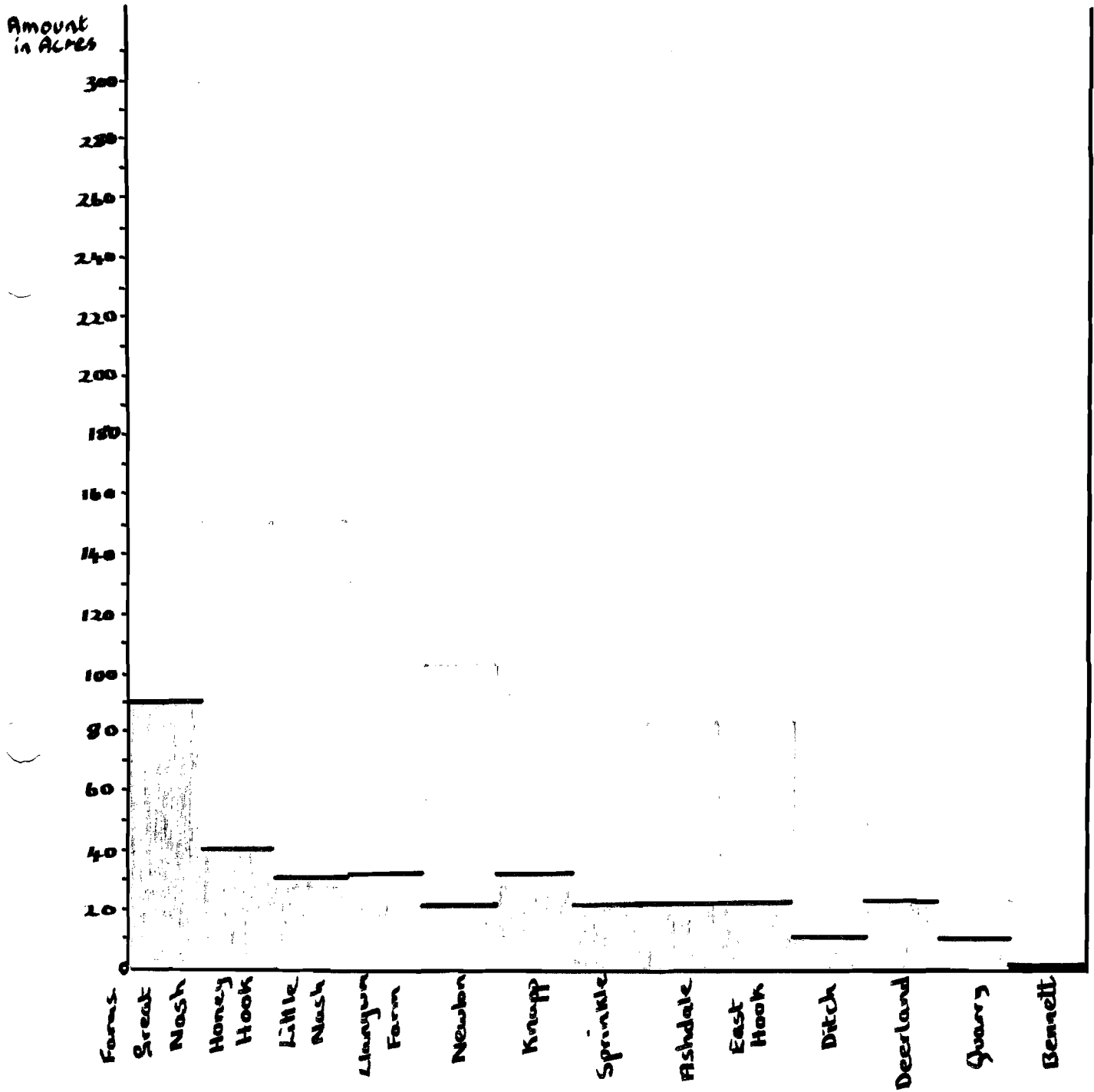
It can be seen on page 101, that the majority of farms keep 20-40 acres of land for grazing, this is with the exception of Great Wash which has 90 acres of grazing land. With only 20-40 acres for grazing there is not going to be exceptionally high numbers in the stock on these farms.

The amount of dairy cattle per farm I was told is low for this area. The largest herd of dairy cattle is to be found on Great Wash farm a herd of 50 cows, however the farmer told me that he intended to get rid of his cow herd and replace it by beef. It should be noted here that by the time of writing this information Great Wash had sold all its dairy herd but as yet has not replaced it by beef - however for this study this farm will be regarded as having a dairy herd as it did have at the time of gathering information. All the other farms except, the

Fig 18

101,

Graph to show proportion of land
used for grazing on each farm



Ditch, Quarry and Bennett Farms, have between 20-30 cows in their herds. The farms which stand in exception do not keep a dairy herd as they do not find it economical to do so. Another farmer who is to disband his dairy herd is on Hargum farm, he told me it was more profitable to keep beef cattle and sheep for fattening, perhaps this is with the connection of him being a butcher, breeding and fattening his own animals for selling in his business as meat.

Milking takes place twice a day, early morning and mid afternoon to early evening. This is then collected by milk tanker and taken 68 miles to Swansea where it is put through machines to return to this area as bottled milk three days old. Although the farmers get a small subsidy for milk they say it is more profitable to rear beef cattle and this is what the farmer is turning his interests to as regarding livestock.

The largest beef herd is to be found on Nash Farm a herd of 150 head of beef, however this is a lower concentration than the smaller farms who have less grazing land. The smaller farms which have grazing land mounting from 20-40 acres

see graph page 101, have a greater concentration of beef around 50-60 head of beef.

The farmers use their stored hay and corn during the winter to subsidize the grass on the land, which is often under snow. When the cattle are fat enough they are taken to market which is held on Tuesdays in Haverfordwest, seven miles away. The farmers then buy calves at the market to fatten up again, very little breeding is done on the farms now, the farmers finding it more economical to buy young calves and bring them up to fattened beef cattle.

It can be seen therefore that the majority of the land is used for crops, potatoes, hay and corn. However it must be remembered that the hay and corn is generally used to feed the livestock in winter. The cash crop therefore is the potatoes, and this is the main source of profit besides the beef cattle.

All the farms have a few chickens around the farm but only Honey Hook keeps enough to sell to the egg marketing board, keeping 50-75 chickens. Margum Farm kept chickens for meat not for eggs. On occasions some of the

farms have pigs but nothing on a large scale and not regularly. At the time of gathering information one farm only had pigs and that was Mangum farm, having ten pigs, kept solely for the butchering business.

As there are so many farms in this area I have chosen three of the larger farms to show the plan of farm buildings. Firstly to take Great Wash Farm see plan on page 105.

On first looking at this there does not seem to be much in the way of farm buildings. However these are very big, compare with the house approximately 12 yard long.

There is a twin sprouting house, two storeys used for the sprouting of the potato seeds. Near this sprouting house can be found the irrigation pond, water used for irrigating the potatoes. There is a milking parlour which holds 50 cows, however this will no longer be used now the dairy herd has been disbanded, this may be turned into either another calves cot or extra storage place for hay. Mr Scale had not decided what he would use this for when he did get rid of his dairy herd. There are two calves cot where young calves are put before they

Fig 19Plan of buildings on Great Nash Farm. [300 acres]

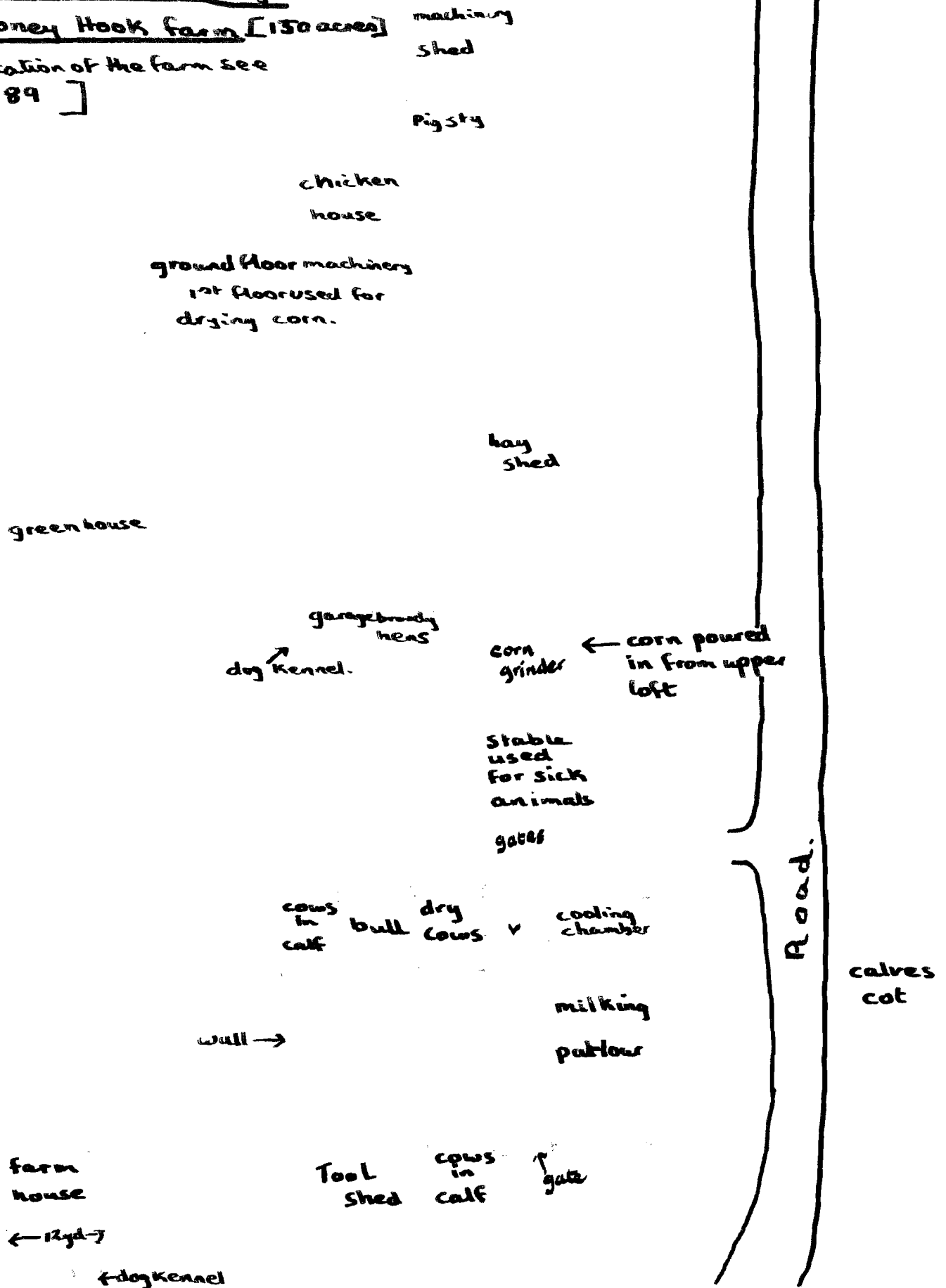
[For location of farm see page 89]



are let out on the fields. The hay shed is a short distance from the house so that it is easily seen if caught fire in the hot summer. There is another hay shed which is combined with an implement shed, depending on the amount of hay gathered in depends on how much hay is kept in this shed. The tractor shed is to be found behind the hay + implement shed, and this is where the larger machines are kept for example the baler. It can be seen from the plan on page 105, that there is a pigeon cot. this cot I am informed has been here as long as the farmer can remember and he has been farmer of this land for over fifty years, and he knew the farm before owning it.

By looking at the plan there does not seem to be any particular pattern made by the buildings and while discussing this with the farmer he said there was no definite reason ~~while~~ why any building was placed where it was.

The next farm to be taken Honey Hook has a more complicated plan of its buildings see page 107. The sheds here are smaller than those found on Great Wash farm. Near to the house there is a tool shed where all the small tools

Plan of farm buildingsat Honey Hook Farm [150 acres][for Location of the farm see
page 89]Fig 20

are kept and where the small repair jobs are done. Attached to this shed is another shed used for cows in calf. At right angles to these sheds is found the milking parlour holding 20 cows at milking time. Attached to the milking parlour is the cooling chamber, cooling the milk before putting into churns which will subsequently be put in the milk tanker.

At right angles to this cooling chamber is found a shed divided into three, one section holds dry cows, one section holds the bull, and the third section holds cows in calf. The spare ground within the enclosure made by these three sets of buildings is used for sorting out beef cattle for market and to hold the dairy herd while waiting for milking. Beyond this enclosure there are more buildings to be found. There is a stable which is now used for sick livestock. The shed adjoining the stable is where the corn grinder is stored, this is connected to a second storey where the corn is poured down into the grinder.

Opposite the corn grinder building is found a small building which is occupied by broody hens. Next to this is a garage and dog kennel. To the left

of these buildings is found the greenhouse. Throughout the winter months this is used as a sprouting house for the potatoes. After the planting of the potatoes the greenhouse is used for tomatoes and lettuces.

Near to the corn grinder is found the hay shed. There is then a shed used for both corn drying and machinery. The upper floor is used for the corn drying and the lower floor is used for tractors and other farm machinery. Adjoining this shed is the chicken house, which houses 50-75 chickens. Nearby is found the pig sty which at the time of visiting the farm was empty. Behind the pigsty was found another machinery shed. Opposite the milking parlour, and across the road is found another calves cot, night accommodation for the calves when they are young.

Again there doesn't seem to be any reason for the plan of these buildings, except perhaps for the milking parlour and cooling chamber being close to the road to save carrying the milk churns a great distance.

The third and final farm to be looked at is Llangwm Farm see plan of buildings on page 110.

Fig 21

Plan of farm buildings at Klongwun farm. [131 acres]

[for location of farm see page 89]

machinery shed
machinery
shed potato box store
corn store + grinder
sprouting house
chicken house
hay shed
sprouting house.
pig sty
milking
pasture
farm house
Butcher Shop
chicken feathering shed
calves shed

1107

road

The farm buildings here are compact and gives the impression that there are not many buildings. The house is situated centrally and is near to all the buildings. The butcher's shop is attached to the farm house. Near to the butcher's shop is to be found the cooling chamber, adjoining this are two sheds, one is the chicken feathering shed and the other is the calves shed. At right angles to this is found the milking parlour holding 25 dairy cows. Adjoining the milking parlour is the pig sty holding 10 pigs at the time of visiting.

At the side of the pig sty is found a sprouting house and adjoining this is a new large hay shed. Nearby is the corn store and grinder, and further back is found a chicken house adjoined by a second sprouting house. Next to the corn store on the left is a potato box store adjoined by a machinery shed, a larger machinery shed is to be found facing this smaller shed.

Although the buildings here are compact there does not appear to be any definite reason why the buildings are in the position they are.

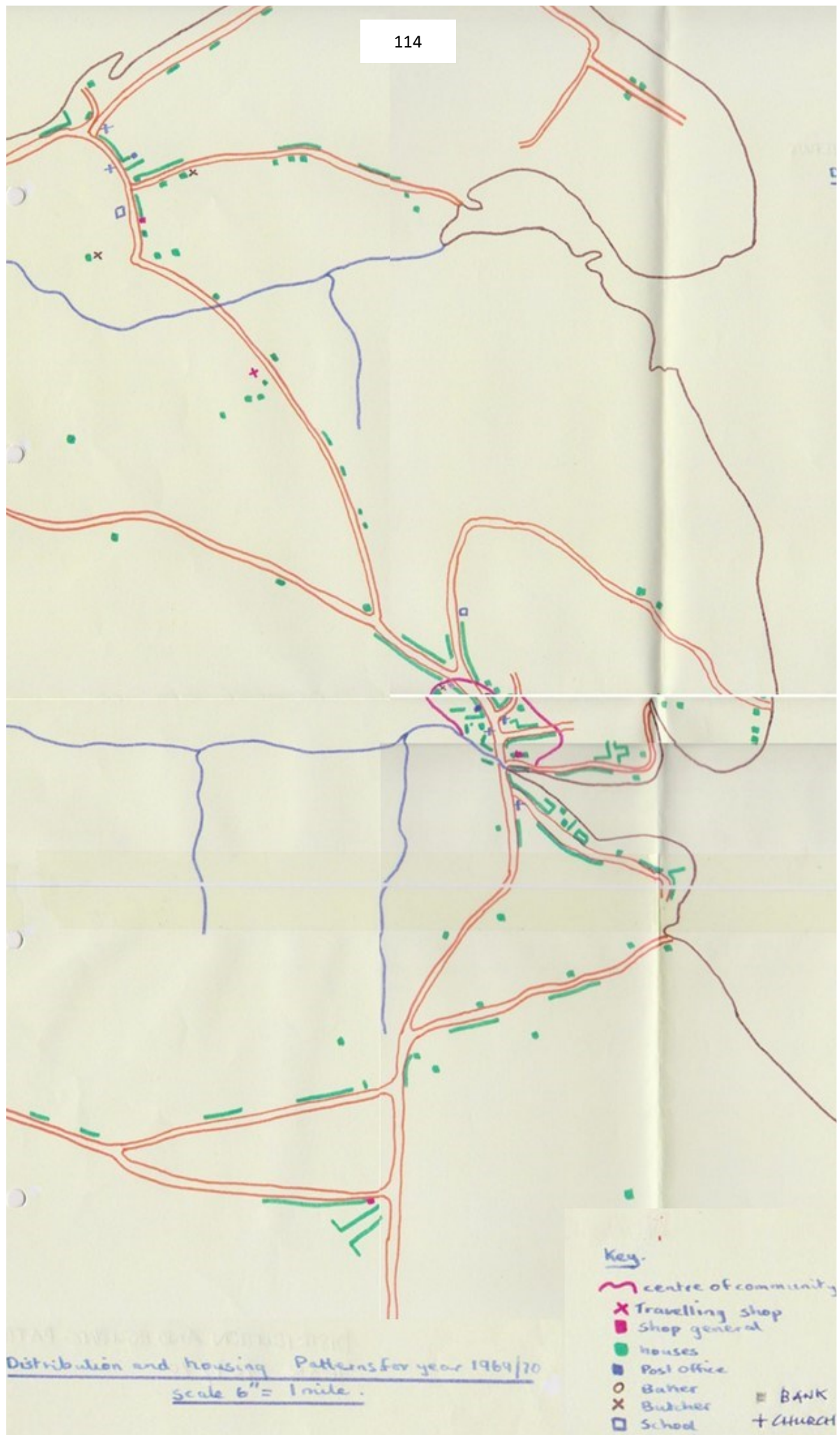
This concludes my agricultural chapter and it is becoming more apparent that the farmers in this area are trying to gain as much profit as possible and

this is the reason for the decreasing of the milking units and the turn to beef rearing.

Information discovered after completing this chapter.

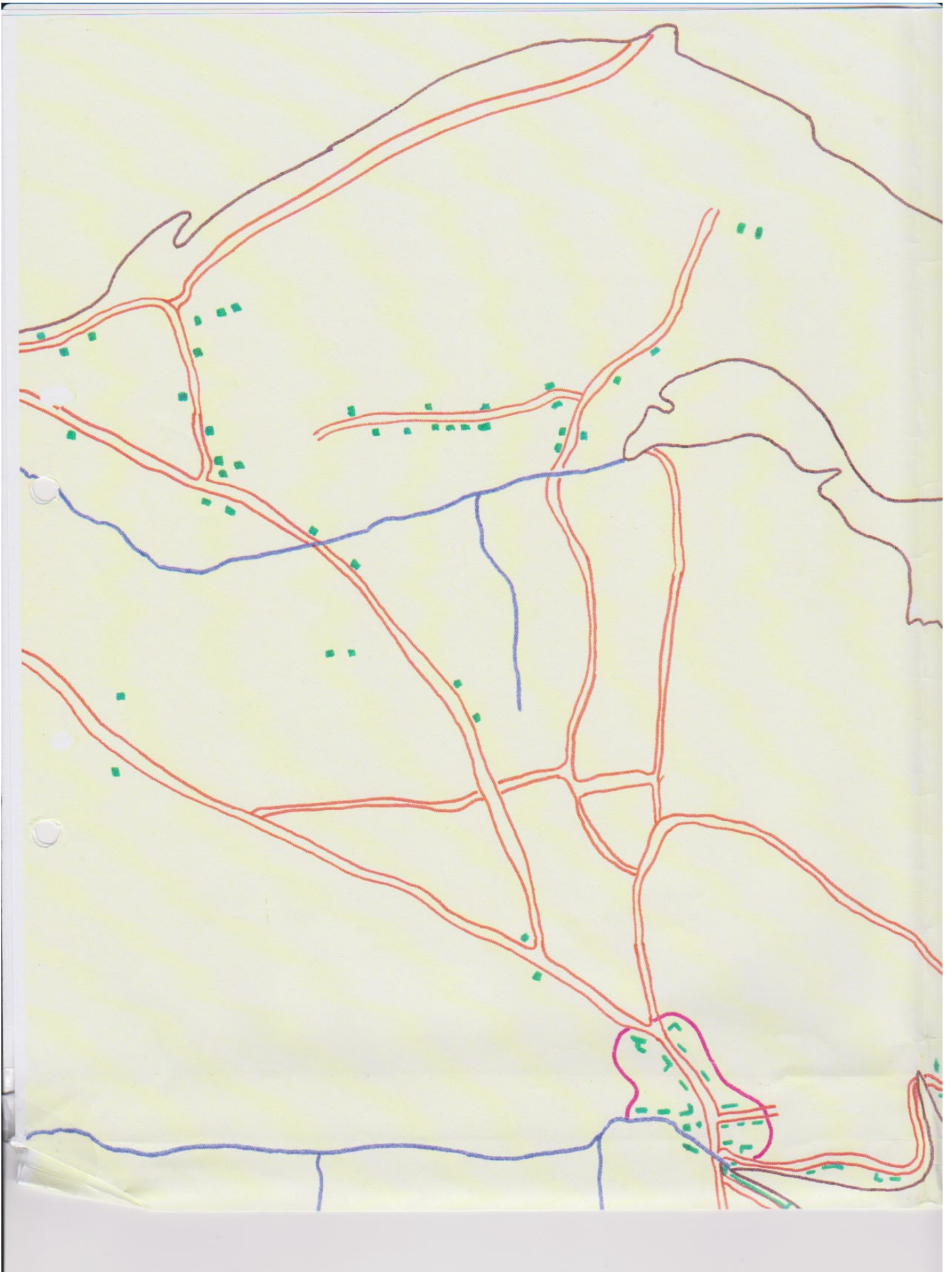
In discussion with Rev. Richards the topic of farmers cropped up and I asked him did he know what subsidies the farmers in this area received. He told me that the farmers receive an early potato subsidy, the government states how much land each farm can put under early potatoes and they are then given so much per acre, the actual sum was not known. If however the farmer wants this subsidy and he plants more acres than the stated amount then he has to pay a fine of £10 per acre to the government. If the farmer does not want the subsidy then he can plant as many acres under early potatoes as he wants to.

Urban Geography.



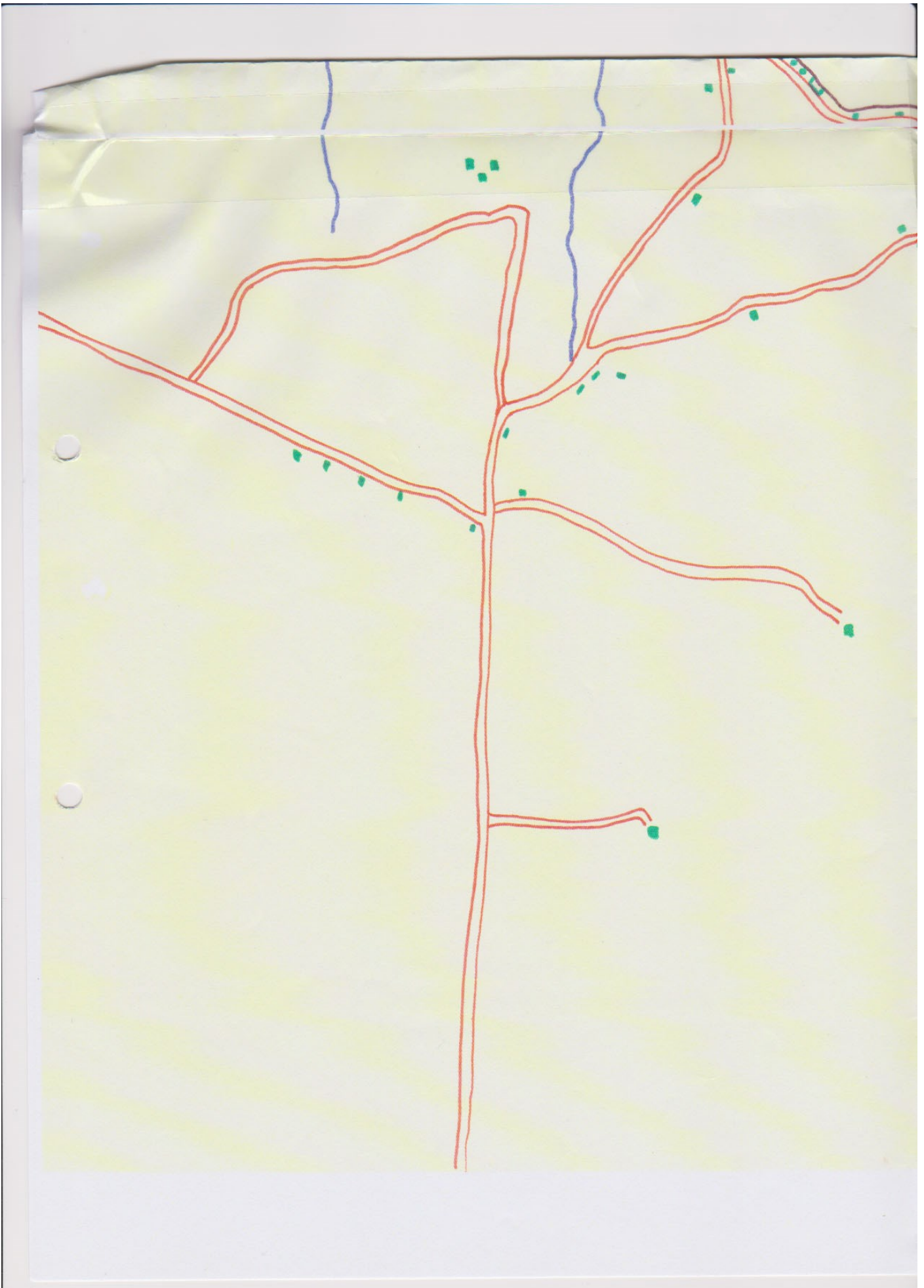
It is very difficult to define urban regions in this area. This can be seen by looking at the map on page 114. There are very little shops and other business buildings that each can be put under a sign of its own. It is impossible to define the area up into urban regions because it would mean the shopping centre to consist of one shop thus making three shopping areas.

This area shows two villages with the majority of buildings found in Llanguwm. The line  on page 114, denotes the centre of the village. It contains two churches, one Post Office, one baker, one butcher, one bank and one general shop. The reason for the site of these establishments are purely because they are the homes of the people who set up business. The bank is in this position as the house had a spare room, the bank is opened once a week between 12:00 to 3:00pm Wednesday afternoon. One could therefore class this as the shopping centre and also the inner residential area. This is the only area which does not show linear development in its housing pattern. It can be seen if this map is compared with map 11 page 116, that even in 1908 the centre of settlement was at this same juncture. These houses



Distribution and Housing Patterns year 1908
Scale 6" = 1 mile.

Map taken from Pemba Sheet Second Edition 1908
Sheets XXVIII S.W.
XXXIV N.W.
XXXIV S.W.



Key

~ centre of settlement

■ houses.

were built for the colliery workers at Hook, they had easy access to Hook being on the main road. When the village became more outward looking, that is the people working outside the immediate area, the people looked for places on the main road to have easy access to their place of work, and the housing development here became concentrated. See photo 14 page 118.

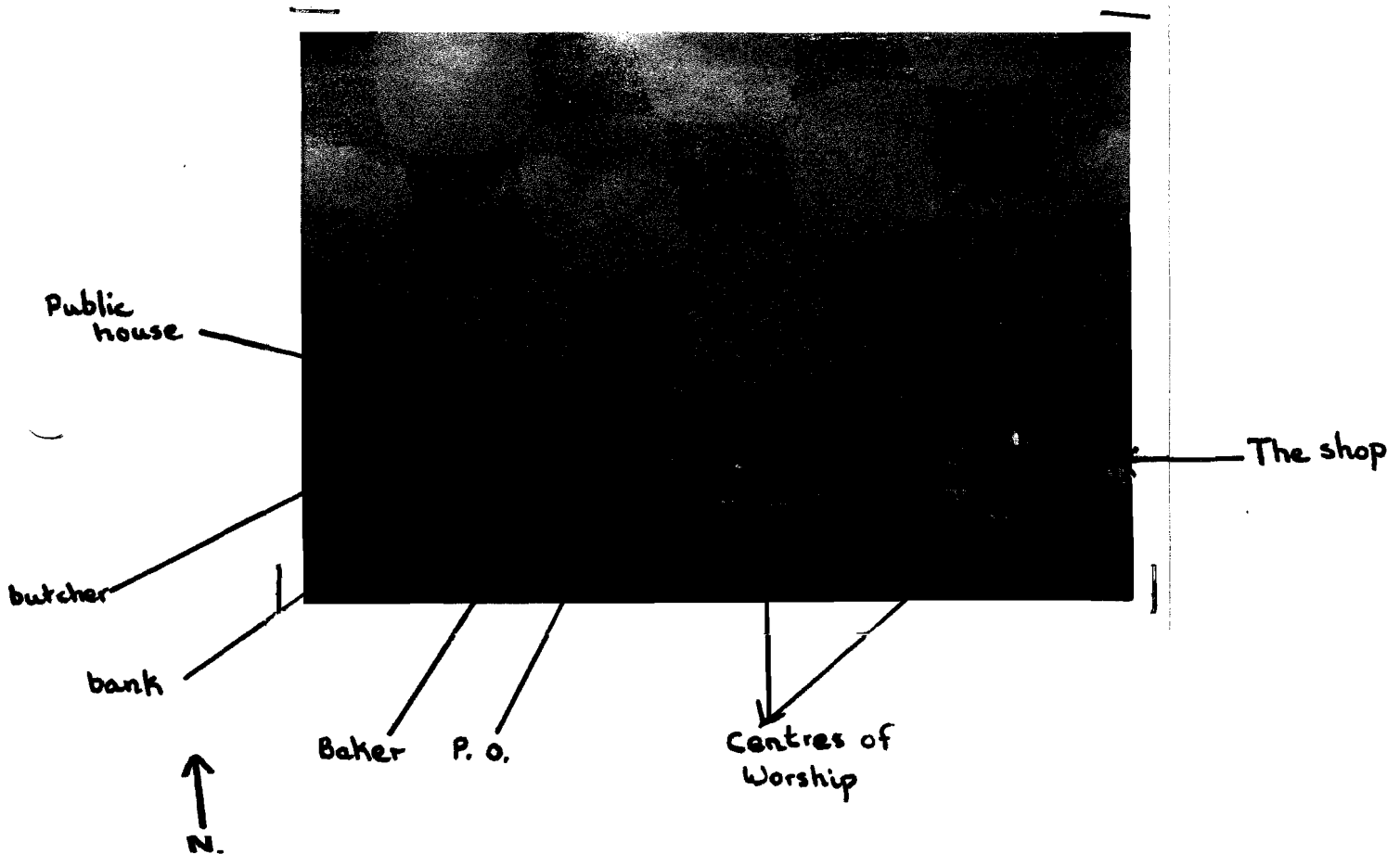
The map on page 114, shows linear development with scattered farms and houses. If this is compared with the map on page 116, it will be seen that the development of houses has little changed. The only thing to change is the increase of houses which makes the linear pattern and scattered houses even more apparent.

It is doubted very much if this pattern will ever change due to the circumstances of the area, those being that it comes under the National Park Committee who will not allow the building of many houses. It is becoming apparent that the village is a dying one, more people moving away from the area. Many houses are now only used as summer residence. People wanting to build houses have been refused by the National Park Committee and it is they

^{118/}
Photo taken from point 990/092

Photo 14

Concentration of housing and business district



This is the main area of population. It started off as linear housing but became concentrated, however the majority is still linear development, except for council estates.



who are steadily killing the growth of the village. A newspaper clipping is inserted on page 114. It is entitled "Caretakers of the past", an apt title, and refers to Mangwam and its decline. The article was taken from "The Western Telegraph" May 16th 1967.

The only places the National Parks Committee will allow houses to be built is in between other houses. Due to this there is no section with only old houses or only new houses there is a mixture of both in every street.

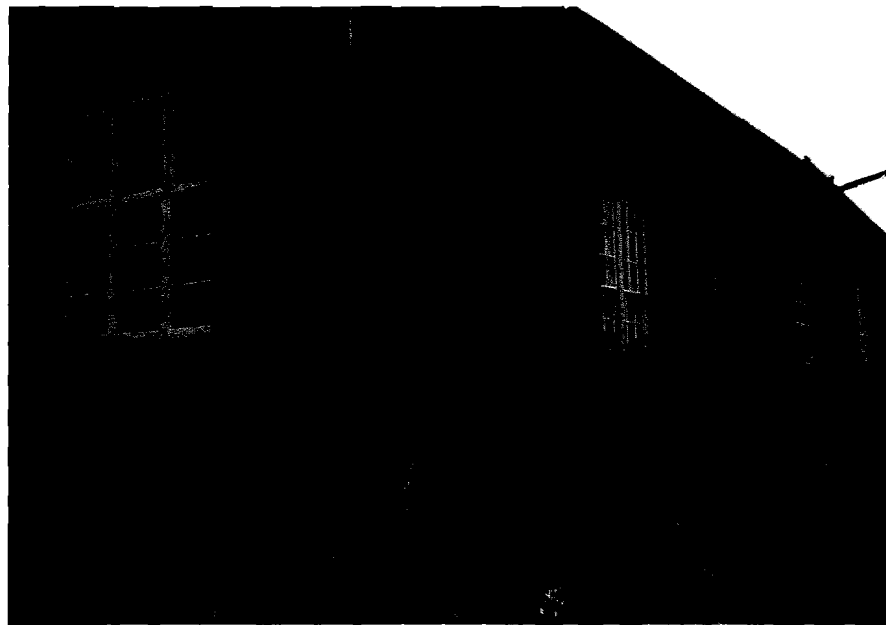
The village school, photo 15 Page 121 was built in 1870 of local stones. It is a mixture of old Red Sandstone, sandstone and Rhyolite. There are three classrooms and a canteen. It was built for 240 children but since then numbers have been drastically reduced to 32 in 1970. It must be taken into account that children to the age of thirteen used to be schooled here and would take account of a slight drop in numbers, however present numbers show that it is not a young generation which inhabits this area.

Whereas the local school is made of local school, a house which was built 1969/70

Photo taken at point 979/098 ^{121/}

Photo 15

Village school



← N

Height approx 20'

in the village, I hasten to add that this house is built between two houses 50-60 years old, is built of manufactured materials. See sketch on page 123.

With such a limited amount of variety in urban regions I feel it is not worth while to study in detail either the Central business District or the shopping centre as in both cases they are almost non existing.

Fig 22Sketch of a house built at point. 991/093

chimney made
of red brick

roof - marley
tiles

cement blocks
covered with pebble
dash

coloured breeze
blocks

Garage part
of the house

Door



Social Geography.

Very few people in the area allocated stay within the region for work. The reason being that there is no work except farmwork. All the businesses e.g. shops, butchers, bakers, do not employ people as they are concerns which they are able to run without any outside help.

There are many retired people in the village and very few young people. Most of the young people leave both the village and the county to seek better jobs, as Pembrokeshire has a very high unemployment rate.

Of the 60 people interviewed see appendix pages 133-139, and others spoken to in an unofficial capacity I found that all used the local shop for short term. If however they needed any furniture or electrical equipment they had to visit Haverfordwest, seven miles away. They purchased meat off the local butchers who come round door to door, this was also the case for the breadman. One woman hastened to add that she bought her tinned goods from the travelling shop because it saved her carrying them from the local shop.

To go into detail about jobs of the people mentioned above see appendix pages 133-139.

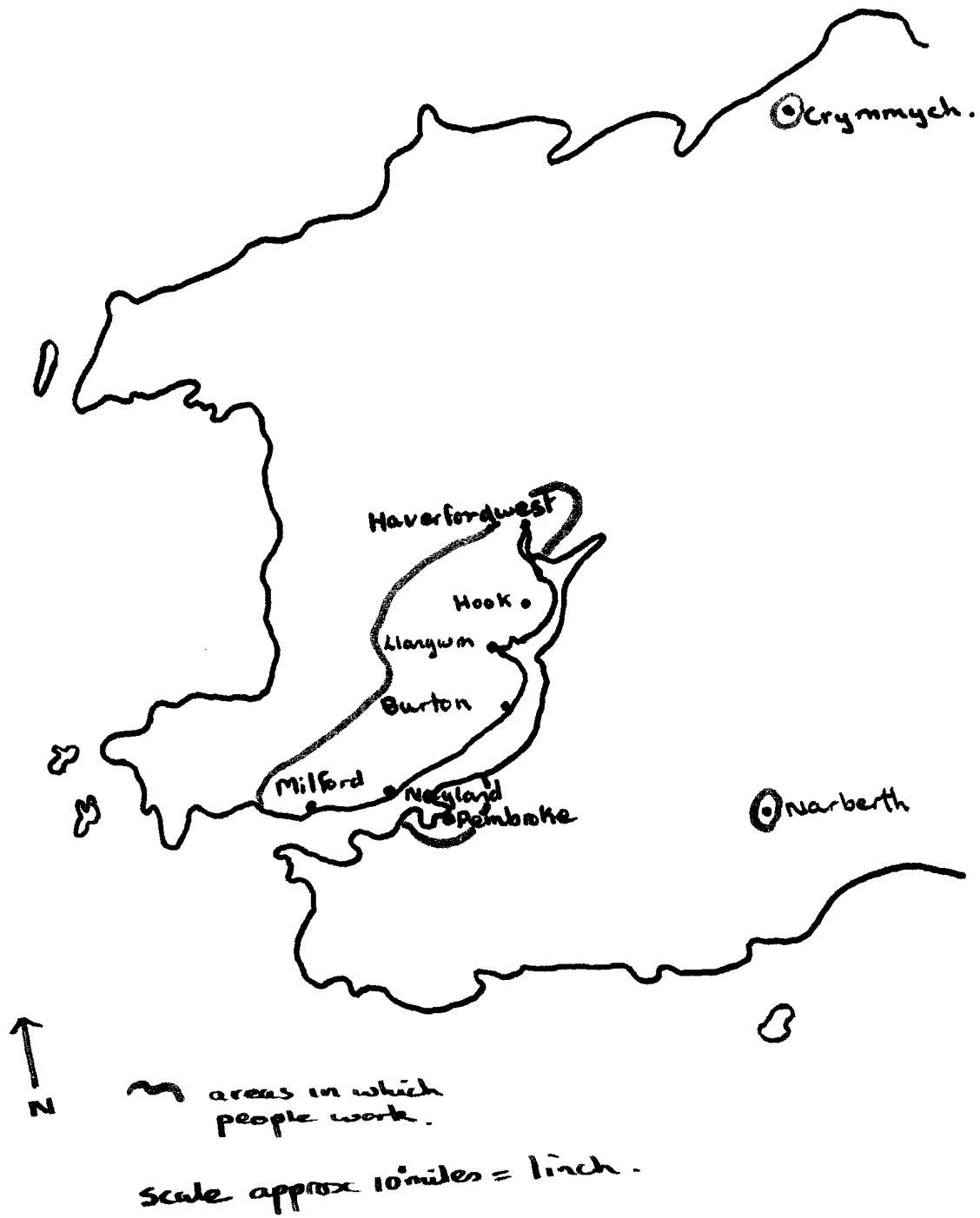
Most of these people have to travel to Haverfordwest to do their work. Mr Roach who is connected with Custom has to travel to Milford Haven and Mr Wilcox has to travel to Warberth which is a base but travels around Mid and South Wales and Devon, Wiltshire and Cornwall. Most of the young girls in the area either work in shops in Haverfordwest or in offices.

There is a sketch map on page 127, showing the areas where the majority of the people work.

One young teacher has to travel 36 miles single journey to the school he is teaching at, near

Crymmych. Pembroke is marked on the map a few people work at the docks here but numbers are increasingly diminishing. Those working at Milford are working at the docks and at the petroleum refineries. There are about 20 men in the village who travel to Weyland to work at the mine depot. Those people who work in Hargwm and Hook either own their own business or work on a farm. Burton is also marked because a few farm labourers travel to this neighbouring village to find work.

Hargwm and Hook is linked with Haverfordwest by a bus service. During the week the times

Map 12Areas in which people work from
Klangwan + Hook

of buses are as follows, time denotes that of leaving Hlangwum, the bus then goes via Hook. 7-20, 8-20, 8-50, 9-40, 11-20, 14-15, 17-10, and 18-10 hrs.

Buses leaving Haverfordwest for Hlangwum, via Hook, leave at the following times.

6-55, 8-10, 9-00, 10-20, 13-00, 16-10, 17-35, and 18-35 hrs.

There is one late bus midweek and that leaves Haverfordwest at 22-00, This is so the young people may go to seek entertainment, however this does not allow them to go to the cinema as this ends at 22-15 hrs

Extra buses are put on this route on Saturdays, for the shoppers, times of these are as follows, leaving Hlangwum.

7-20, 8-20, 8-50, 9-20, 10-55, 12-30, 14-00, 15-00, 17-15, 18-15, 19-15 and 21-00 hrs.

Buses leaving Haverfordwest on Saturdays are as follows.

6-55, 8-10, 8-50, 9-50, 12-00, 13-00, 14-30, 16-00, 17-45, 18-40, 20-30, and 22-00 hrs There is no bus service on Sunday but there is one special dance & bus leaving Haverfordwest on Saturday nights at 23-30 hrs.

Entertainment for the village is sadly lacking especially for the younger members of the community. There is a youth club with which

takes place on Fridays at Llanguw Village school and is run by the headmaster Mr E. Harries. This has only been running for 1 year since the arrival of the headmaster. There is a sea scouts club which is held on Thursday nights at Llanguw Village school and Tuesday nights at Hook Village school. This is the total entertainment for the younger generation. For other entertainment like dances and cinema they have to travel to Haverfordwest. Dances for young people are only held on Saturdays and it's not worth the younger people going to the cinema on a Wednesday because they have to come out before the film has finished.

For the older people there is one public house and one club. The club is run by the Rugby and cricket club which has bingo every Wednesday. For those who can play rugby or cricket can play for the local teams on Wednesdays and Saturdays.

Mothers Union is held on Tuesdays afternoons, and special guests are asked to come and speak to the women, this is usually held in the rectory. There is also meetings of the sisterhoods of both the Baptist Chapel and Wesleyan Chapel who

both follow a similar programme to the mothers Union. The sisterhood meetings are carried out in the respective Sunday Schools.

Any other entertainment must be found in Haverfordwest. The over 18 boys usually go into Haverfordwest on Wednesday evening for a drink and return on the 22.00 hrs bus. A lot of the middle aged couples go into Haverfordwest for an evening meal on Saturdays at one of the Hotels. However due to the area being predominantly country in character and all the villages being in the same situation as Llangwm and Hook to get a meal at the weekend one must book about a week in advance.

It can be seen therefore that these villages are no places for the young generation as far as entertainment is concerned. It is even difficult for the younger ones to go into Haverfordwest for entertainment as those in schools often only get about 5/= pocket money and it costs 4/= return on the bus and what can one do with 1/=?

It is hardly surprising that when the children are ^{old}~~young~~ enough to leave home they do so and find jobs in other counties,

away from dying villages such as Hook and Llanguwrn.

One can see that from pages in the appendix that not many people from away come to live in Llanguwrn and a lot of the people interviewed were old and many of those who marry move away from the area unless they have a good permanent job.

'32,

Summary.

This area forms an agricultural area with very little housing. This farming is the mainstay of the area but not of the community. The majority of people have to leave the immediate area to find work, as there is no supporting work here.

The area has a variety of rocks which makes the area interesting geologically, however I found the geology difficult because of the great variety of rocks. The presence of coal led to coal mining but this no longer exists due to flooding in the mines.

The relief and drainage does not form a complicated structure but forms a series of small valleys with a large valley forming the eastern boundary of my study area.

The houses do not form complete sections because old and new are built side by side due to the National Park Authorities. One cannot section the area up into residential and business areas because of its size and lack of business.

On the whole this area is declining. It is declining due to lack of industry and the influence of the National Park Authority. There seems to be no signs of this area going to grow in the near future and at the moment there are some

doubts as to how long the two schools will stay open, there is some discussion of the two schools being joined.

The main character of this area is the presence of agriculture which dominates the scenery. It seems that this is what the area will stay-agricultural.

Appendix .

Streets visited in an official capacity to ask how long they had lived there and where they worked.

Williamston Terrace.

<u>Name</u>	<u>Occupation</u>	<u>Time lived there.</u>	<u>Lived before</u>
1= Miss Patch:	Museum Archives	: 1 year:	Hereford.
3= Mr+Mrs Braw+1 child:	Council	: 8 years:	Haverfordwest.
5=	Summer Residence.		
7= Mr+Mrs Price:	Contractor	: 4 months:	Essex.
9= Mr+Mrs Morgans:	Carpenter.	: 18 years:	Llangwm.
11= Mrs Richards:		: 30 years:	Llangwm
11a= Mrs Barrak:		: 20 years:	Llangwm
15=	being repaired		
17= Mr+Mrs Prooch+1 child:	Customs	: 25 years:	Llangwm.
19= Mr+Mrs Allen+1 child:	Carpenter	: 13 years:	Cardigan.
21= Mr+Mrs Grey+3 children:	builder	: 7 years:	Haverfordwest

Eothen Lane.

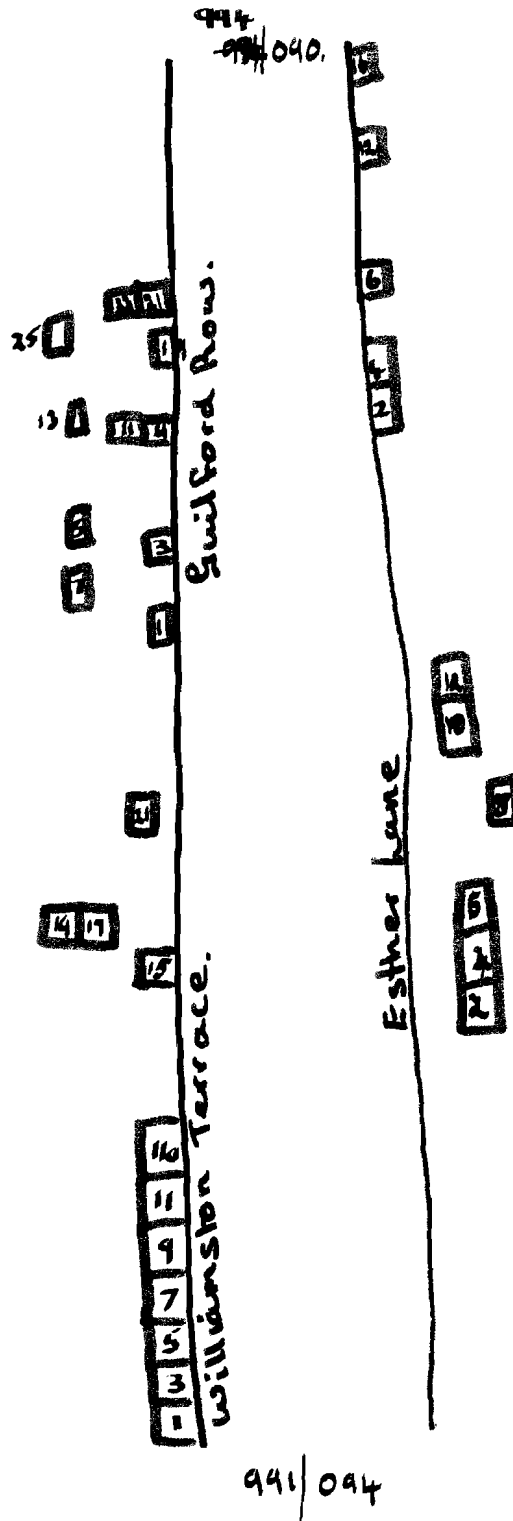
2= Mr+Mrs Davies+2 children:	mechanic:	5 years	: Llangwm
4= Mr+Mrs Cole +1 child	: Council	: 5 years	: Llangwm.
6= Mr+Mrs Allen:	permanent sick	: 5 years	: Llangwm.
8= Mr+Mrs Phillips:	storeman	: 32 years:	Llangwm.
10= Mr+Mrs Phillips+3 children:	Council	: 4 years	: Llangwm
12= Mr+Mrs Davies +1 child:	unemployed:	2 years:	Llangwm.

Guildford Row.

1= Mrs Saies		: 60 years:	Llangwm
3= Mrs Hutchings+1 child.		: 73 years:	
5= Mrs Bryant		: 30 years:	Pembroke.
7= Mr+Mrs Lewis:	Surveyor	: 2 years:	Llangwm.
9=	Summer Residence.		

fig 23

Plan of houses.



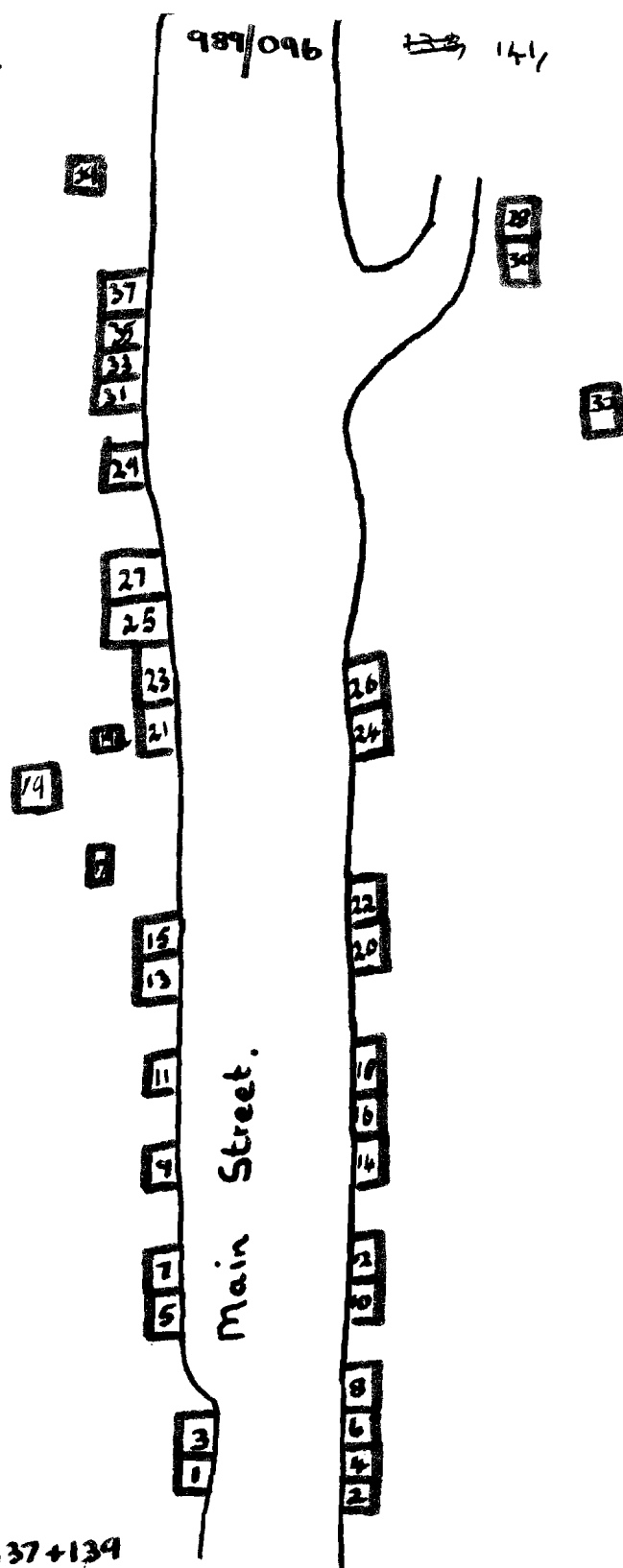
1st - see pages 134 + 136.

<u>Name</u>	<u>Occupation</u>	<u>Time lived there.</u>	<u>Lived before.</u>
11= Mr Palmer :	permanent sick:		Life.
13= Mrs Owens :		17 years:	Llangwm.
19= Mr + Mrs Kingsland:	retired :	5 years:	Portsmouth
21=	Summer Residence.		
23= Mr + Mrs Bryant:	retired	: 20 years:	Llangwm.
25= Mr + Mrs Esmond:	retired	: Life ,	
2= Mrs Morgans:		: 1 year.	Llangwm
4= Mr + Mrs Jennings:	retired	: 3 years:	H/west.
6= Mr + Mrs Morgans		: 6 months:	Llangwm.
12= Mr + Mrs Hughes:	retired	: 12 years:	Portsmouth
16= Mr + Mrs Scourfield :	delivery man	: 14 years:	Llangwm.

2

2

Plan of houses in
Main Street.



Key

1-39 see pages 137+139

139, 142,

<u>Name -</u>	<u>Occupation</u>	<u>Time lived there</u>	<u>Lived before.</u>
26= Summer Residence			
27= Vacant			
28: Mrs John + 1 child		40 years: Llanguwm.	
29: Mrs John			Llanguwm.
30: Mr + Mrs Brock	Retired	38 years: Llanguwm.	
31: Mrs Jones		28 years: Llanguwm.	
32: Mr + Mrs Bolt	Public House	6 years: Kent.	
33: Summer Residence.			
35: Mr + Mrs Reas	Retired	42 years: Llanguwm.	
37: Mr + Mrs Bevan	Retired	30 years: Llanguwm.	
39: Mr + Mrs Morgan + 1 child	Farmer	40 years: Llanguwm.	

Acknowledgements.

Books.

J. + Pringle British Regional Geology S. Wales. H.M.S.O
 T. Neville George

People:

Mr Bennett	farmer	Bennett Farm.
Mr Crow	farmer	Newton Farm.
Mr Edwards.	Ex miner.	
Mr Griffiths	farmer	Ditch Farm.
Mr Harries	headmaster	Llangwm School.
Mr James	Farmer/Butcher	The Quarry Farm.
Mr James	Farmer	East Hook Farm.
Mr John	Farmer	Sprinkle Farm.
Mr Lewis	Farmer	Little Nash Farm.
Mr Morgan	the Farmer/Butcher	Llangwm Farm
Mr Morgan	in connection with	Fishing.
Mr Peters	Farmer	Knapp farm.
Mr Rees	Ex miner.	
Rev Richards.		
Mr Scale	Farmer	Great Nash Farm.
Mr Scale	Farmer	Ashdale Farm.
Mr Thomas	Farmer	Deerland farm
Mr Thomas [deceased]	late of.	Honey Hook Farm.

145,

Mr Warlow [deceased] in connection with fishing.

Also those people mentioned in appendix pages 137-142.