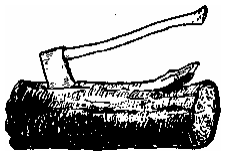
THE "GILCRAFT" SERIES, No. 9

EXPLORING

BY
"GILCRAFT"



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Editor's Note:

The reader is reminded that these texts have been written a long time ago. Consequently, they may use some terms or express sentiments which were current at the time, regardless of what we may think of them at the beginning of the 21st century. For reasons of historical accuracy they have been preserved in their original form.

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EXPLORING

INTRODUCTION

THIS is a book of suggestions for outdoor work. Each chapter contains notes on suitable practices and games, all capable of much variation if only the imagination be used, and the boy point of view kept in mind. Limitations of space have necessitated putting many of the suggestions in the form of brief notes; these should be expanded and adapted to local conditions.

The principle of progressive training has been observed throughout; it will be found that the earlier parts of a chapter or section deal with matters suitable for Scouts who are not yet First Class; practices and further outdoor work for those who are First Class are then detailed; the concluding portions should prove helpful for Rover Scouts who wish to explore in the directions indicated by the Chief in the Chart on page 232 of *Rovering to Success*,

The scope of the subjects touched upon in this book is at first sight alarming, but the variety is purposely made great so that there may be something to attract each type of mind. The Scouter will find that one Scout is interested in one topic, another chooses a different line; he must study the natural bent of each Scout and help the boy to develop his abilities in that direction. This refers particularly to the last four chapters, which are crowded with suggestions. These chapters cannot do more than indicate in outline the vast field that lies open to any Scout of an exploring disposition. To attempt to follow up all the subjects would be to court disaster; the result would be confusion and mental indigestion.

This need for selection is as essential for the Scouter as for the Scout. Clearly it would tax the abilities of an "Admirable Crichton" to acquire a sound knowledge of all the matters touched upon in the following pages. A Scouter should, however, try to get a working knowledge of some one aspect of exploring, otherwise he can hardly prove an effective inspiration to his Scouts. Where a Scouter's own knowledge fails, he should know the best men and books, to help any Scout who is in need of guidance and further information.

The germ of this book will be found in the following paragraphs from *Scouting for Boys* (1929 Edition, p. 61).

''*A good form of scout work can be got by scouts going about either as patrols on an exploring expedition, or in pairs like knight-errants of old on a pilgrimage through the country to find people wanting help and to help them. This can equally well be done with bicycles, or in the winter by skating along the canals.*

Scouts in carrying out such a tramp should never, if possible, sleep under a roof – that is to say, on fine nights they would sleep in the open wherever they may be; or, in bad weather, would get leave to occupy a hay loft or barn.

You should on all occasions take a map with you, and find your way by it, as far as possible, without having to ask the way of passers-by. You would, of course, have to do your daily good turn whenever opportunity presented itself, but besides that, you should do good turns to farmers and others who may allow you the use of their barns, and so on, as a return for their kindness.

As a rule you should have some object in your expedition; that is to say, if you are a patrol of town boys, you would go off with the idea of scouting some special spot, say a mountain, or a famous lake, or possibly some old castle or battlefield, or a seaside beach. Or you may be on your way to join one of the larger camps.

If, on the other hand, you are a patrol from the country, you can make your way up to a big town, with the idea of going to see its buildings, and its Zoological Gardens, circuses, museums, etc. And you should notice everything as you go along the roads, and remember, as far as possible, all your journey, so that you could give directions to anybody else who wanted to follow that road afterwards. And make a map. Explorers, of course, keep a log or journal, giving a short account of each day's journey, with sketches or photos of any interesting things they see."

CHAPTER I

THE SCOUT AS EXPLORER

"Something hidden. Go and find it. Go and look behind the Ranges – Something lost behind the Ranges. Lost and waiting for you. Go!"

RUDYAKD KIPLING.

BOYS are captured by the Romance of Scouting: they knew little or nothing of the movement before they join; it is the promise of adventure that draws them. If that promise is not fulfilled, the boys begin to drift away, and the fault, in most cases, is to be found in the lack of imagination and colour in the way hi which the Troop has been run. The spirit of adventure must inspire all our Scouting: the boy wants to live dangerously, to run risks, to break ordinary routine: all these tendencies should find legitimate avenues of expression in the Scout Troop, and if the boy is disappointed and finds that he is caught in a dull routine, he will rightly break away.

All Scout training can be clothed with romance if only an effort of the imagination is made. Indeed, Scouting properly done can be such an enjoyable and exciting game that it will hold the enthusiasm of any boy. Troop meetings indoors are at their best indifferent substitutes for real scouting out-of-doors. One well-planned and exciting Saturday afternoon is worth a dozen indoor meetings. It is better to sacrifice the latter, rather than give up the out-of-doors games and expeditions. But lack of imagination can even wreck an afternoon's open-air scouting.

One way of getting at the boy's point of view is to read one of his so-called "Bloods." Too often it is in those much-maligned books that he finds the colour and excitement he wants, when he should be getting both in his scouting. Once his point of view is realized all activities will take on a different aspect. A Flag Raid will become a duel of wits between Smugglers and Revenue men; tracking practice becomes more exciting when imaginary criminals have to be caught. There is, indeed, hardly a single scout activity that does not lend itself to this imaginative treatment. These methods of adding life and colour to what may otherwise be dull affairs, are sound, as the additional interest means quickened senses and more alert minds.

The attitude to adopt is well put in the quotation from Kipling's poem, "The Explorer," at the head of this chapter. There is a potential explorer in every Scout; it is our business to see that he gets the opportunity of finding an outlet for that longing for adventure even in the dullest of surroundings. Sometimes we are tempted to think that because perhaps our scouting has to be done in a great town, there can be little scope for romance: the truth is exactly the opposite.

The duller the surroundings of ordinary life, the more romantic does the outside world appear. This applies with greater force to boys than to grown-ups. It is so easy to forget that a few yards off his accustomed beat, lies an unknown land for every boy. An instance from actual life is very much to the point. A twelve-year-old London boy was once walking along the banks of the Thames at Chelsea; he had never, except by bus, or in those happy days, by steamboat, gone further east than the Albert Bridge. On this occasion he thought it would be rather fun to keep on walking and to see what lay in the unknown land ahead. He saw much that fascinated him, shipbreaking yards and wharves, buildings that were new to him and all the life of the river flowing by as he was lured from one interest to the next. Finally he was amazed to see the Houses of Parliament, for he had never realized that it was possible to walk there. Westminster came as a discovery to him and immediately a new world was revealed. It was a very tired but happy boy who got home that night, but before he fell asleep he had resolved that he would know all about what lay beyond his immediate home district. Many a happy half-holiday he spent exploring the City, its old buildings and strange back alleys, and in a few years' time he had acquired an unusual knowledge, for a boy of his age, of the City of London.

A sophisticated grown-up may smile at such a curious enthusiasm, but what was true for that boy applies to most boys: they know their immediate neighbourhood in a patchy way; all that is

beyond is "lost behind the Ranges," and for them it is just as much an adventure to go outside their usual orbit, and make discoveries for themselves, as it is for a grown-up to explore unmapped lands.

A Key to this land of romance is available for every Scoutmaster. The trouble is that it is so seldom used for opening the door. Some of us can remember vividly the effect of our first reading of *Scouting for Boys:* to a boy that book is an unending joy; here he finds just the things he wants to know – how to live in the open, all about camping, tracking, bridges, pioneering, stalking – they are all there. It was that book that inspired boys all over the country to start Scouting on their own without any help from grown-ups. Our job is to see that this enthusiasm is used as the driving power in all our Scouting; we must find the opportunities, we must lead the way and see Romance all around us.

It would be no exaggeration to say that the First Class Scout is the boy who has seen his dreams come true: he can now *do* many of those things he always wanted the chance of doing: in the process he has gained confidence in himself; he has learned to stand on his own feet; he has discovered his ability to be of real practical use to other fellows; he has been tried, and proved worthy.

As the Chief wrote in *Aids to Scoutmastership:* "The tests for First Class Scouts were laid down with the idea that a boy, who proved himself equipped to that extent, might reasonably be considered as grounded in the qualities which go to make a good, manly citizen.

"He could not but feel himself a more capable fellow than before, and, therefore, he should have that confidence in himself which will give him the hope and pluck in time of stress in the struggle of life, which will encourage him to keep his end up, and to stick it out till he achieves success."

It is to two of the First Class Tests that this book is partly devoted, namely:

(g) Read the conventional signs of a map correctly, and draw an intelligible rough-sketch map. Point out a compass direction without the help of a compass.

(i) Go on foot or row a boat, alone or with another Scout, to a point seven miles away and return again, fifteen miles and back: he must write a short report of the journey, with special attention to any points to which he may be directed by the examiner or his Scoutmaster (a route map of the journey is not required). It is preferable that he should take two days over the journey.

These requirements may be regarded as the testing of the Scout as Explorer. It is hardly necessary to point out the significance of the mapping test in such a connection, but some general considerations on the journey may be given here.

Wherever possible the full requirements should be carried out, not the minimum that is laid down. To give full value to the test, the following might be chosen from the alternatives. "Go on foot with another Scout to a point seven miles away and return again; he must write a short report of the journey." A journey on foot is a better test for observation purposes; it means greater opportunities for noticing things, and in addition it is also a more thorough test of endurance, although endurance as such is not the main quality that is under consideration. An explorer on a bicycle seems out-of-character, but with his gear on his back and his staff in his hand the Scout will feel that he is really setting out on an adventure. A companion adds considerably to the fun and is a reminder of the Scout brother idea; this companion should not, of course, be a Scouter; preferably let him be a Scout of the same standing, or one who is hoping to be ready for his journey later on. The Chief definitely wishes the journey to be of two days' duration, so that the additional test of camping may be included.

The easier alternative conditions are provided to meet unusual circumstances where it is quite impossible to satisfy the full test. But the line of least resistance should not be taken until every possible means of overcoming difficulties have been investigated. Any deviation from the full test robs the journey of some of its value and romance. The Scoutmaster's business is to see that the journey is made a real adventure: he must choose the most suitable routes for this purpose, and

include activities that will give the Scout the feeling that at last his dreams have come true, and he is a real explorer dependent on his own resources, and out to prove himself.

Since the object of the journey is to find out how far the Scout has benefited by his previous training, he should not attempt it until he has had at least two years' training after becoming a Second Class Scout and has reached the age of fourteen. This will be self-evident when it is considered what he will have to show himself capable of doing; he may have to carry out any of such practices as the following: cook, use map and compass, use an axe, select a camp site, stalk and track, use fully his powers of observation and of thinking, make a log of his journey with sketches and rough maps, make nature notes, collect specimens, and all along look after himself with the minimum of aid from others.

Put in this way, the test may seem formidable; it would be so indeed if, as does happen sometimes, the Scout were expected to do his journey without previous training; the point to bear in mind is that the test should be the culmination of at least three years of preparation. Everything mentioned above should naturally find its place at some time or other in the normal Troop work; if programmes are planned with foresight, then any Scout should be able to take the journey is his stride.

The considerations outlined above will also make it dear that it is desirable that this test should be the last of all in the First Class Badge tests as it sums up nearly all the others. It is also necessary to have actual journeys done before the test itself; these should increase in scope progressively. A two hours' hike will make a good beginning in company with a Scouter who can point out what is worth observing. It is hardly fair to expect any Scout to go out on his own and make a log that shows an observant mind, unless be has been shown the way and the method. Later practices could be of longer duration; Patrols could go off for the day; later, Scouts in pairs could be sent out.

Two recent alterations in the wording of the test are important. "Special attention to any points to which he may be directed" indicates that the principle of selection must be applied. It is obviously impossible for any boy to observe and note everything, therefore he should be given a definite purpose and object on which to concentrate. What that purpose is, depends on local conditions, on the Scout's own interests, and on other varying circumstances. Thus, to carry the opposite principle to absurdity – anyone who set out to make notes on all the various topics suggested in this book, would need, not twenty-four hours, but a lifetime. Material is given here of a wide variety so that, if possible, all interests may be captured by something. The Scoutmaster's job is to determine which and how many of the suggestions made are applicable to the case of the particular Scout who is setting out on his journey.

The words "a route map of the journey is not required" have been added because sometimes an impossible standard of map-making has been expected. The separate test in sketch-mapping and the use of the compass have already been noted: these lead up to the First Class Journey. It is impossible for a Scout on his journey to make a detailed route map; he hasn't time and there are too many other more important matters that need attention. One or two thumb-nail sketch maps are a kind of shorthand method of getting facts down, and may save a considerable amount of description and also be more accurate and easier to understand. A few maps of this kind will therefore be needed in most cases, but provided they give correct information, they serve their purpose, however rough-and-ready they may be.

This detailed consideration of the requirements of the test sounds rather dull; but it should be remembered that the conditions laid down are only the framework on which the Scoutmaster can build up any Castle of Romance that his imagination suggests. In drawing up his instructions for the Scout he should let his fancy loose. Here is his great opportunity for using some of that desire for exploration and adventure referred to at the beginning of this chapter; there is no need to call always the First Class Journey; rename it THE ADVENTURE, or THE EXPEDITION, what you will, as long as the Scout's imagination is appealed to, and his interest thereby quickened. Frame his "sealed orders" to fit in with local history, if there is anything striking that can be so used. If

necessary invent a story that will appeal to him, but remember that Scouts vary in interests, and while one may be thrilled with a yarn of a Band of Outlaws, another will be bored, but will be captured in his turn by the suggestion that he is off to the Darkest Africa.

For those Scoutmasters who find it difficult to hit on a suitable idea as a starting-point, there are plenty of suggestions to be found in any of the accounts of exploration written by the men who have been on expeditions. A simpler method is to let the Patrol Leaders make suggestions; their imaginations generally prove fertile enough to supply unending yarns of the wildest and most improbable adventure!

Here is the type of yarn that is useful for firing the keenness of any boy.

"You are setting out from the village of Kabwabwata, near Lake Tanganyika, to explore in a north-easterly direction for seven miles as far as the town of Mpweto. These are marked on your map as A and B, as the natives will never put down the real name of anything. The territory you pass through is inhabited by pygmies; beware of them." (Here is a chance for sending out some of the other Scouts to play the parts of pygmies, and to try to hit the explorers with darts, but without being seen.) "Speak to no man, but notice all men, as a report of their manners and customs will be valuable. Keep to the lesser known paths, but note what roads and tracks are of use; look for streams; note where the open lands are and the forests and their nature; bring back specimens of the ten commonest trees, and if you come across the tracks of any beast, note what they are and make a cast of a good specimen."

This can, of course, be elaborated according to the possibilities of the country available. All kinds of ploys can be introduced that will increase the value of the expedition.

Some are inclined to smile at this method of setting the test, and regard all this romance as so much childishness; of course it's childish since we must use the child's approach if we are to capture the full enthusiasm of the boy at an age when he still dreams dreams, and sees himself as hero of many an adventure. We must recall our own imaginings as boys when the garden became the scene of terrific battles and mighty exploits: or as R. L. Stevenson put it: "We need pickles nowadays to make Wednesday's cold mutton please our Friday's appetite; and I can remember the time when to call it red venison, and tell myself a hunter's story, would have made it more palatable than the best of sauces. To the grown person, cold mutton is cold mutton all the world over."

Behind all this – though the Scout does not and should not realize it – is an attempt to develop character along definite lines. To quote once again the Chief's own explanation of "Scouting": "By the term 'Scouting' is meant the work and attributes of backwoodsmen, explorers, and frontiersmen."

No one is foolish enough to believe that all explorers have been ideal men; but even the worst specimen had certain qualities that pulled him out of the ordinary rut of life. It is as well that we should consider what those qualities are, as our aim is definitely to excite our Scouts to emulate the character of the true explorer.

In his *Life of Daniel Boone*, Stewart Edward White has drawn his hero's character so clearly that it will serve as an admirable exposition of the desirable qualities of the best type explorer.

"He was a *master of woodcraft,* able to find his way hundreds of miles through unbroken forests, able to *maintain himself* alone, not only for a day or a week, but for a year or more without other resources than his rifle, his tomahawk, and his knife; and this in the face of the most wily foes. He was muscular and *strong and enduring;* victor in many a hand-to-hand combat, conqueror of farms cut from the forest; performer of long journeys afoot at a speed that would seem incredible to a college athlete. … He was brave with a *courage* remarkable for its calmness and serenity. Calmness and *serenity,* indeed, seem to have been his characteristics in all his human relations. Those who knew him remark frequently on this, speak of the fact that where everyone else was an Indian-hater, Boone never cherished rancour against them, so that as honourable antagonists they always met, both in peace and war. He was *trustworthy,* so that when wilderness missions of great responsibility were undertaken, he was almost invariably the one called. He was *loyal* to the last drop of his blood. He was *ready ever to help others.* These are simple, fundamental

qualities, but they are never anywhere too common; they are rarely anywhere combined in one man: and in those rough times of primitive men they sufficed, when added to his wilderness skill and determination, to make him the leading and most romantic figure."

A glance at the words italicized in this extract will show that many of these qualities are implicit in the Scout Law; others are the natural accompaniments of the Scout training, and all of them are called into play in the First Class Journey.

THE EXPLORER'S TRAINING

CHAPTER II

USE OF THE COMPASS

"Here hence we steered North and by East, taking the directest course to shorten our way homewards."
LAURENCE KEYMIS TO SIR WALTER RALEIGH, *1596.*

A KNOWLEDGE of the sixteen points of the compass is part of the Second Class Test. It makes a good beginning for our potential explorer, since a means of describing direction, and of following a set course is essential. Before the compass came into general use, the old mariners had to steer by means of sun and stars; those who were bold enough to set out on uncharted seas hugged the coast and kept to well-known coast-marks. Early man avoided the trackless forest and moved on familiar landmarks. The great stride forward in exploration during the sixteenth century was largely due to increased knowledge of the reliability of the compass needle.

The use of the lodestone (a piece of magnetic oxide of iron) was known in the East at a very remote period, but in Europe it was unknown until the twelfth century.

There are two types of compass in use. A needle compass – the ordinary form – consists of a magnetized strip of steel balanced on a pivot so that it can swing freely in a horizontal position over a fixed card marked with the points. In the card compass, the needle is fixed to the underside of a floating card and the whole swings round until it comes to the position of rest when the North point on the card is pointing to the North.

In demonstrations with a large compass card such as Figure 1, the card should always be kept horizontal: if it is hung on a wall, the younger Scouts may imagine that the North point is upwards, and the South point downwards.

The Scouts are quite familiar with the property of magnetism, since they have all used small horseshoe magnets to attract pins and small bits of iron. This also explains why the presence of iron near a compass will deflect the needle. The Earth itself is a kind of huge magnet with Poles, that is with points of greatest attractive force, so that anything magnetic tends to be pulled towards them. We merely use the North as the most convenient starting-point; we could just as well use the South Pole.

In training Scouts in the use of the compass, the aim should be to get them to recognize a direction immediately. Let them be accustomed to getting simple orders in which, instead of naming places, compass directions are used**.** It is better to say, "The 'Peckers will work in the north-east corner "than to point and to say, "'Peckers over there. There are also many compass games that can help to make the points familiar. These will be found in such books as *Gilcraft's Book of Games,* pp.112-113, and Mackenzie's *Games for Scouts,* pp. 22-24.

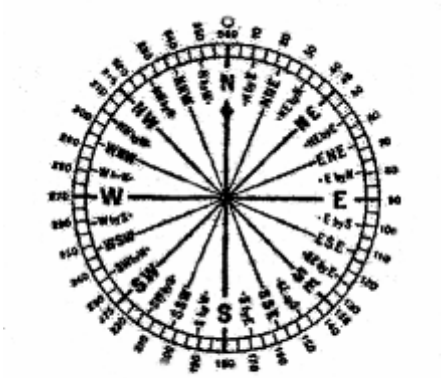

FIG. 1

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All these admit of many variations. One or two other suggestions may be found useful. Prepare beforehand sixteen postcards, each marked clearly with a different compass point. Arrange the same number of Scouts at even intervals round a large circle. Fan the cards out and hold them blank side uppermost. Let each Scout draw a card; until the order "Look" is given no Scout may turn the card over; at that order the one with North immediately holds it above his head; the others must at once re-arrange themselves according to the points on their cards.

In a game like "Ships in a Fog" (*G.B.G.*, p. 62, No. 14), the orders should all be compass directions. A variation of this game is to give the story of a ship's course with plenty of compass directions, and let one Patrol be the ship and as the points are mentioned they should move on the right course. A second Patrol can watch and give a list at the end of the wrong moves made; a third Patrol can then be asked to go through the correct movements from memory. More reality can be given to this by using actual records of ships. For instance, in Hakluyt's *Voyages,* exact details are often given of courses, such as the following:

"We met with the winde at Northeast, and so we ran Northwestward, then we met with the winde Westnorth-west, and at the West within 6 leagues, running toward the Northwest, and then we cast about, and lay Northeast, untill we came in 42 degrees, where we set our course Eastnortheast."

To make the most of this kind of material, Scouts should be posted at the compass points to represent the winds, and when one is mentioned, that Scout should blow hard!

The following particulars taken from the *Traverse-Books* of John Davis on his third voyage in search of the North-West passage in 1587, will give plenty of practice for the Patrol-ship and for the Winds. This might be linked up with a yarn about the search for that passage. The details should not, of course, be read out just as they are put here; they should be incorporated in a running yarn.

Other yarns where compass directions are used can be made up for exploration in Africa and so on; the point to bear in mind is that in this way the Scouts see the need for compass directions in actual life.

DATE	COURSE	WIND
May 19.	W.S.W.	N.E.
21.	W.S.W.	N.E.
22.	W.N.W.	N.E. by E.
23.	W.N.W.	N.N.E.
24.	W.N.W.	N.N.E.
25.	W.	N.N.W.
26.	W.	S.E.
27.	W.N.W.	S.S.E.
28.	W.	E.S.E.
29.	N.W.	S.S.W.
30.	W.N.W.	N.N.E.

In the above extract from Davis's log, N.E. by E. has been used; there is no reason why a Scout's knowledge should be confined to sixteen points; after passing his Second Class Test he might be encouraged to learn more about the compass card; this will help to keep the matter fresh. A keen Scout should be able to box the compass.

Though much can be done in the Troop Room, more exciting use can be made of the compass out-of-doors; in all Wide Games compass directions should be introduced and the Patrol Leaders encouraged to do the same when they are arranging how their Scouts shall operate.

THE FIRST CLASS TEST

For the First Class Test a more difficult standard is expected. It is true that there is no reference to the actual points, but the Scout has to "point out a compass direction without the help of a compass." This is part of the Chief's scheme for training boys to rely on themselves and not on instruments; it will be noted that this applies also to the test in estimating distance.

There are several methods of finding the North without a compass; if we know where the North is, of course the rest is easy.

1. Remember that at Noon (one o'clock Summer Time) the sun is approximately South in these latitudes. Other useful facts are: in Midsummer the sun rises in the N.E, and sets in the N.W.; in Midwinter it rises in the S.E. and sets in the S.W. This applies fairly accurately to the latitude of London.

2. *With a Watch.* Hold the watch horizontally and point hour-hand to sun; a line bisecting the angle between the hour-hand and Noon points roughly North and South; the South end of the line being nearest the Noon, (twelve or one o'clock). (See Figure 2.)

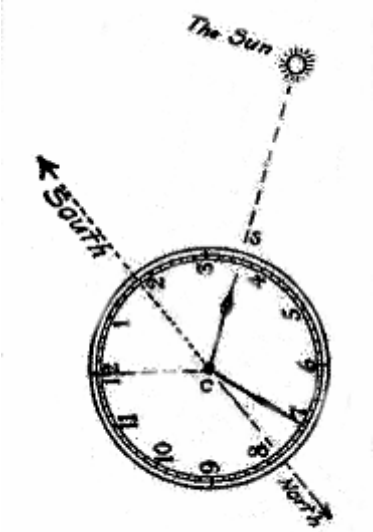

FIG. 2
By permission of Geo. Philip and Son

3. *With a Scout Staff.* At Noon, if the staff is held at an angle with one end on the ground, the shadow will point away towards the North.

Both these methods are only approximate. Greater accuracy can be secured in the following way.

4. Fix a staff as shown in Figure 3. From the end of the staff a string with a weight attached like a plumb line. About half an hour before Noon mark the end of the shadow with a peg. Make a circle on the ground with its centre immediately under the weight, and its radius reaching to the end of the shadow. Now watch from time to time until the shadow has worked round and its end again touches the circumference of the circle. Bisect the angle by the two shadows and this line will point away to the North.

5. *By Stars.* In the Northern Hemisphere, the Plough, or Charles's Wain, gives an easy means of finding the North. This is illustrated on page 69 of *Scouting for Boys* (1929). The distance from the last of the "Pointers" to the Pole Star is roughly four and a half times the distance

between the "Pointers." In the Southern Hemisphere the Southern Cross serves the same purpose. (See *Scouting for Boys,* pp. 69-71.)

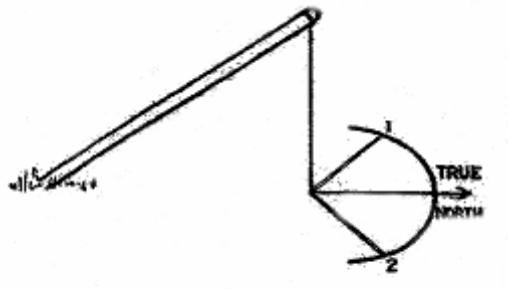

FIG. 3
(1) Represents 1st point where shadow touched circle.
(2) is the 2nd point.

All these methods should be practised from time to time. In camp the North and South should be ascertained as soon as possible and clearly marked. A camp sundial is worth making. Set about it in this way. Fix a staff at an angle in the ground. Do this at a definite known time in the morning, say at nine o'clock. Put a peg in the ground where the end of the shadow comes; then get the Scouts to put in similar pegs for each succeeding hour, and label them. In this way a rough-and-ready sundial is constructed, so that all may know the time, when there is sufficient sun to throw a shadow.

Practice should also be given in moving on a compass direction. The best way of instructing Scouts is to get them out in the open country and give a direction, say N.E. Tell them to pick out some landmark, tree, conspicuous mound or the like, in line with the direction given; this mark should not be too far away. They then walk to that point, and repeat the operation by picking out another mark on which to move.

When they have become proficient at this, practice should also be given at night when the stars can be seen. In these conditions they should pick out a star in line with the compass direction and move on that. The star selected should not be too low down, as it may be cut off from view by intervening obstacles or by mist; nor should it be too high, otherwise there will be stiff necks to attend to. They should not move for more than five minutes on one star, as the stars are apparently revolving round the North Star, which appears as the one fixed

BEARINGS

When the Scouts are really conversant with the use of compass directions, they should be told something about bearings; if they know that explorers refer to bearings, not points of the compass, they will be all the more eager to understand what they mean.

Start with a large chart as shown in the Figure I. This, it will be noticed, is marked not only with the points, but also with figures running clockwise from 0 at the North point round to the same point which also has the figure 360 under it. At the East point the number is 90, a right angle with the North. A complete circle contains four right angles; that is 4 x 90 degrees, or 360. So any point can be given either as a compass name or as a bearing number; thus, South is 180, West is 270, and so on. Instead of saying S.E. we can say 135 degrees; as 135 is less than 180, but more than 90, the direction must be between East and South; if it is over 180 but less than 270, it is between South and West.

A very little practice in translating bearings into points and vice versa will soon make the idea clear; the fact should be emphasized that the numbers *increase* in clockwise direction. After this is clear, go through the same practices in moving on a bearing as were done for compass points; but don't drop the use of the points; there will always be the lesser experienced Scouts to keep in mind, as well as the need for keeping previous training in use and good order.

So far we have assumed that the instrument used is any ordinary, inexpensive compass. The disadvantages of this, in use, will soon become apparent: for one thing, it is necessary to look down at the card, and then up at the landmark, thus by the movements of the head increasing very much the possibilities of error. What we want is a compass so arranged that we can look at the card and at the landmark at the same time. This has been achieved in the type known as a prismatic compass.

Every Troop should regard the prismatic compass as a most desirable part of its equipment – second-hand ones are obtainable for about 15s. Without a prismatic the possible range of compass practices in wide games is restricted. The Patrol Leaders should first be instructed in the use of the compass and a special expedition arranged for them to bring in its use. They can then pass on their newly acquired skill to their Scouts. Once the idea has gained a hold of the Patrol Leaders, the prismatic compass will become an accepted part of the Troop's gear. It should be remembered that Scouts must not regard the prismatic as a substitute for knowing how to point out rough compass directions without an instrument. A Scout does not always rely on mechanical aids – see First Class Tests (*d*) and (*g*) – but the use of accurate instruments is additional skill that should not be neglected.

THE PRISMATIC COMPASS

Figure 4 shows a common type of prismatic: the name is derived from the most important part of the instrument, the prism at the ring-end; this makes it possible to sight an object and at the same tune read the bearing on the card (see Fig. 5). The parts of the compass are as follows, starting at the left of Figure 4 and moving to the right.

The ring is used not only for attaching the compass, but also for holding (see Fig. 6).

Above the ring is the hinged prism enclosed in metal, except for a sighting hole above the hinge and a corresponding hole at the bottom to admit light from the card. The top hole is continued by a slit for sighting on the hair line on the window in the lid (extreme right of Fig- 4).

Along the brass outside ring are two screws: the first is for lifting the card off the pivot when the compass is not in use; the second is for clamping the glass cover so that it cannot be rotated. At the bottom of the brass ring, the compass points are marked.

The glass cover over the card has a white (luminous) line marked on it (almost in centre of far side of Fig. 4). This is the direction mark.

The card itself is made of mother-of-pearl, with a luminous North arrow pointing to 0 on the inner circle of figures. The two circles of figures are so arranged that a direct reading can be obtained from the inner circle, and a corresponding prism reading from the outer circle: this is why the latter figures are "inside-out."

Inside the rim on the extreme right is a metal triangle with a line marked on it: this is the lubber-line.

The lid has a circular glass window with a hair line on it: luminous continuations of this line are put on the metal frame for night use.

If the whole compass is opened out flat it will be found that a notch on the outside of the ring, the lubber-line, the hair line, and notch in the lid catch are all in one straight line: this is called the notches line: this is useful when setting a map.

To take a bearing: Arrange the compass as in Figure 4 with the lid at right angles to the chart. Release the chart by sliding the stop towards the prism. The method of holding is shown in Figure 6. If the numbers are not clear, slide the prism up or down until correct focus is obtained. Place the eye close to the prism and sight the object through the slit above the prism, adjusting the compass so that the object is cut by the vertical line on the glass. The vertical line and division on the compass card will then appear to be coincident and the magnetic bearing of the object is read through the prism. The check stop at side of compass assists in bringing the chart to rest.

Fig. 4
Prismatic Compass.

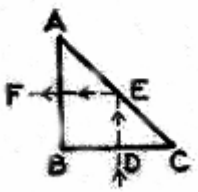

Fig. 5
ABC is the prism. DEF represents path of a ray of light. The bearing numbers are under D: the eye is at F.

Fig. 6
By permission of Geo. Philip and Son

Practice should be given in taking bearings and in walking on a given bearing. At first the Scouts may find it difficult to get out of the compass-point habit, but the simplicity and accuracy of the bearing method will soon appeal.

Begin with an object that is not directly on any one of the sixteen points. Put the problem to the Scouts: "How can we describe the direction of that object from here? It is not N.N.E., not N.E." Then show how a bearing, say, of 30, gives the exact direction. Such a practical difficulty overcome will soon prove the usefulness of bearing over point.

In compass work where accuracy is essential it is important to remember that the compass needle points, not to the North Pole as on a globe, but to the Magnetic Pole in Boothia Island. Hence we speak of the True North (North Pole) and the Magnetic North. The difference between the two bearings is called the *variation.* In 1927 the variation for London was about 13 degrees *West,* and this decreases by eleven minutes annually (each degree is divided into sixty minutes). An Ordnance Map always shows this variation for the date at which the last revision was made and this figure should be noted when the map is used. The importance of this fact lies in its application to map-setting. This will be considered in detail in the next chapter.

A Scout should also be able to use a Protractor to lay off Bearings on a map. The older boys will probably know the use of a protractor from school experience. One form is shown in Figure 7. It will be noticed that the front and two side edges are graduated in degrees similar to a compass card. The lines radiate from the centre of the back edge. Degrees up to 180 are shown by the outer line of figures; those from 180 to 360 by the inner line.

To lay off a bearing on a map, place the radiating centre on the spot from which the bearing has been read: the edge should point North and South. Mark on the map where the degree, corresponding to the given bearing, is shown on the protractor: a line draws from the point of

observation through this mark, will be the bearing, and you can then pick out a suitable object from the map on that bearing. Remember that for bearings up to 180 degrees the graduated edge of the protractor is laid to the right or East: for bearings 180 to 360 degrees the graduated edge is laid to the left or West.

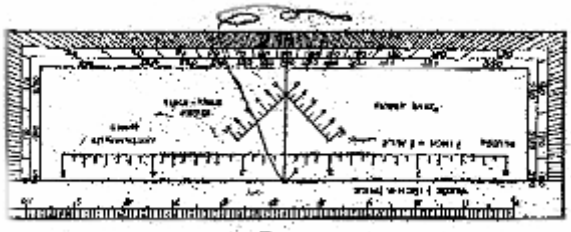

FIG. 7

With a protractor it is also possible to read a bearing on the map and then with the prismatic compass to get the same bearing on the country. To do this, pencil on the map the North and South line through the spot where you are. Lay the protractor's bottom edge along this line with the centre on the spot. Pencil in a line joining the object whose bearing you want to know, with the point of observation: read off the degrees where this line cuts the protractor: that is the bearing.Remember that the map is true North and the compass Magnetic. In this country where the variation is always West of true North, the Magnetic is *greater* than the True by the amount of the variation. Thus, if the variation is 20 degrees West, and the magnetic (compass) bearing is 190 degrees, the True bearing will be 190 degrees minus 20 degrees equals 170 degrees.

Sometimes it is necessary to get a back bearing owing to the object being unapproachable, or to the magnetic interference of such things as railways lines, tram lines, iron palings, and so on. The observer may be standing on a bridge and he wants to get the bearing of a windmill to the bridge, but is unable to get to the windmill to take the bearing. He first reads the bearing of the bridge to the windmill. He then applies the following simple rule: if the bearing is less than 180 degrees ADD 180 degrees to give back bearing. If the bearing is greater than 180 degrees SUBTRACT 180 degrees to give the back bearing. On the protractor (Fig, 7) the two lines of figures are so arranged that each gives the back bearings of the other.

When the use of bearings is understood, practice in moving on a given bearing can be given as suggested with the ordinary compass. Night work can also be great fun: for this the prismatic with its luminous markings is specially adapted. If it is light enough for objects a little way ahead to be distinguished a line can be obtained on one; if it is too dark for this, then the compass must be constantly consulted.

WIDE GAMES WITH PRISMATIC COMPASS

OBSERVATIONAL

This game is suitable for woods or close country.

Mark a route in straight lines on the map with pencil, making a five-, six-, or seven-sided figure, preferably through woods. (If four Patrols are to compete it is better to make two such routes, which can overlap without detriment.)

Before the competition takes place two people should go over the route with the compass as accurately as possible and pin to trees, palings, on the ground or anywhere, suitable square 1½-in. bits of neutral coloured paper.

The Patrol is given the map showing the route, and a bit of the coloured paper; they have to follow the route, and find as many bits of paper as they can, they have also to find as many leaves of trees and shrubs as they can of different varieties, and complete the course in a given time.

The Patrol on the other route have a different colour paper.

With four Patrols two work each route at about half-hour intervals; the first Patrol on each route is given different coloured squares of paper which they are required to put in the place of each paper they find, the second Patrols on each route then have two specimens of paper to find.

Points are given for each paper found, for every variety of leaf identified, and half-points for those not named.

The Patrol have to take the bearings from the map with a protractor, add the variation, and march on the lines indicated. If they put the variation the wrong way they find no papers.

Papers should not be put too close together, otherwise it becomes a paper chase; nor should they be placed in obvious positions, but some are on the far side of trees facing away from the direction of march, some of them under boughs facing the ground, and so on.

Well done, this will take a winter's afternoon. The best way to prepare the route is for one to stay behind with the compass, to keep the others on the line, as far as visible; it is fatal to go together, as the line is soon lost, and the accuracy of the lay-out is a necessity.

IDENTIFICATION OF SITES

Suitable for mixed country, some wood advisable.

A series of photographs are taken looking in any direction and without any prominent feature easily recognizable; each photograph is taken at the "station" at the end of a bearing either from the starting-point, or the preceding station; eight photographs is a useful number. The Patrol is given a starting-point, a list of true bearings from station to station (no distance stated), and a set of photographs numbered consecutively. They add the variation, set their compasses, and have to find the spot from which the photograph was TAKEN. They are given a little garden-peg tally with name of Patrol and number of station, and have to put this in the ground where they think the photographer stood. Other Patrols should be sent off at not less than twenty-minute intervals, but in the case of four Patrols send two the reverse way to halve the time.

The photographer wants someone with him to take the bearings of his position and check them; there should also be left some secret mark by which the exact spot can subsequently be determined quickly. This should not be sufficient to attract the eye of the Patrols.

Ten points are given for the tally nearest each station; 7½ next; 5 next; and 2½ next, but any peg to score has to be within 30 ft. of the station. A time limit is essential; points may be given for time saved, and deducted for time lost.

This develops into a race, and is much enjoyed. The secret here is the Direction; leave the best man with the compass at the point or station from which you are moving, to keep the Patrol on the line, then scatter along the line till you find something like the photo, then concentrate on the photo; the exact spot is found by comparing the distant objects with nearer ones.

VARIATIONS

It would be quite possible to run this game using natural features, or man-made, as stations. Features such as groups of trees, isolated boulders, geological outcrops, could all be found by directional marching, keeping this, of course, to the simpler things known to boys.

BOOKS

On Taking Bearings. Walsh. (Murray.) 1s. 3d.
The Mariner's Compass. Suter. (Browa.) 1s. 6d.

CHAPTER III

MAP-READING

"I am told that there are people who do not care for maps, and find it hard to believe. The names, the shapes of the woodlands, the courses of the roads and rivers, the prehistoric footsteps of man still distinctly traceable up hill and down dale, the mills and the ruins, the ponds and the ferries, perhaps the *standing stone* or the *druidic circle* on the heath; here is an inexhaustible fund of interest for any man with eyes to see or twopenceworth of imagination to understand with!"

R. L. STEVENSON.

PART of an explorer's job is to map the country that he is going through. Before he can do this he must know information on a map.

In this chapter we shall first of all consider how the modern map has developed from the early beginnings of cartography, secondly the technical characteristics of a map, and thirdly, the best method of interesting Scouts in maps and getting them to become really proficient map-readers.

It is only within the last two hundred years that maps have become scientifically accurate. The Babylonians, Egyptians, and Greeks had no accurate maps. In the time of the Roman Empire there were a number of hand-drawn road maps. During the Middle Ages there was a very big advance in map-drawing, and some of the productions are extremely interesting. Many of them tried to combine both a plan and a picture of the district mapped. A small portion of such a map, published in 1560, is reproduced here (Fig, 8). During the seventeenth century there was an increase in accuracy, but at first the method employed was that of slowly accumulating details from observation, largely without the use of instruments. The modern map can be definitely taken as beginning with the year 1744, when triangulation was used scientifically in France.

For those who may be interested, there is a collection of postcards of Early Maps, published by the British Museum for 1s., which will be found extremely interesting as a beginning in the study of the development of mapping.

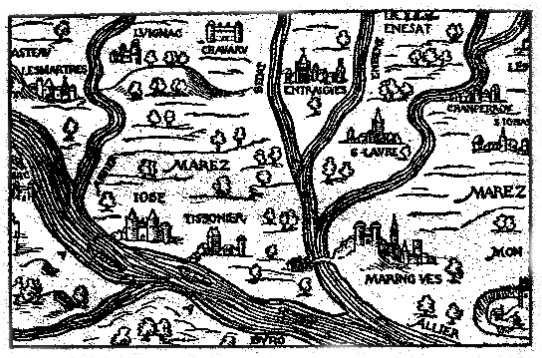

FIG. 8

Modern maps, especially those of our own country, produced by the Ordnance Survey, are productions of considerable skill and merit. Some of the latest issued by the Ordnance Survey are really more than maps, they are works of art and of real romance. For instance, the new series of Tourist District Maps is a fascinating production, especially those for Dartmoor, Snowden, The Lake District, The Trossachs, and the Cairngorms. With such a map in one's hand, one can spend many happy hours in the midst of winter mentally visualizing the country, planning tours, or hunting out desirable camping areas. Arm-chair exploring of this kind is not to be despised as it is an aid to familiarity with an essential part of the Scout's equipment.

Indeed, any map opens a door to Romance. For instance, look at the One-Inch Ordnance Map of the country round Gilwell Park. Chingford is the nearest station; near by you will see marked "Queen Elizabeth's Hunting Lodge": that immediately calls up the great days when Epping Forest was the Royal Forest of Waltham, hunted by the kings and queens from the times of Harold until those of Charles I. We can imagine the gay hunting scene during the gorgeous times of Queen Elizabeth as she rode through the forest accompanied by a train of nobles and gallants, she, a huntress as intrepid as any. So, too, she may have rested at the old hunting lodge, now part of Gilwell Hall, and looked down into the valley of the River Lea, up which once the long ships of the Danes were rowed to Waltham where they were trapped by King Alfred.

Further north is marked Ambersbury Camp, where it is said Boadicea was defeated bv Seutonius in the year 60. Other names are full of suggestion, Monk Wood, The Manor House, the Long Running, Jack's Hill, Haroldspark, and so on. Any map is really a record of the storied past if only we learn how to read it with understanding and imagination.

If only our Scouts can capture some of this romance of map-reading, all the apparent drudgery of learning technical details will soon be overcome. Some may be inspired to reach that stage of knowledge at which they can share the pleasure expressed in the following passage from an essay by an enthusiastic traveller, C. E. Montague:

"The maturing map-reader, planning his holidays in the hills, will now be able to know much more besides the height at which he would stand at any point on a fell path or on an open mountain-side. The map will also tell him what he would see in every direction if he were there. The sensitively winding contour curves will show him from just what point on the Watendlath-Rosthwaite track the top of Great End will come into sight. They will show him whether, from Seatoller Fell, Helvellyn will be within view, or whether the intervening Armboth Fell is just high enough to blot the greater mountain out. A glance at the condensing or spreading lines should tell him which side of Scawfcll is a crag to be climbed and which is a turf slope to be walked. Before he has ever tramped up Borrowdale or Greenup Ghyll he will know how much of the valley in front will be hidden by each jutting promontory of high ground on either side."

ORDNANCE MAPS

There are many kinds of maps, and it is important to make the right choice for whatever purpose we have in view. The basis of all reliable maps in this country is the work of the Ordnance Survey. It is rightly claimed that "no country possesses a series of maps at all comparable with that of the Ordnance Survey of Great Britain." The term Ordnance indicates the military origin of the Survey; we owe the scheme to the '45 Rebellion, when the need for accurate maps was first realized during the campaigns in the wild parts of Scotland. The first survey was completed in 1755, but the results were never published; another was started in 1794, and the first sheet of the 1-in. map appeared in 1801.

Every Scouter should make himself familiar with the range of maps that are published by the O.S. This can best be done by getting two pamphlets, *Small Scale Maps* and *Large Scale Maps,* each 1s., obtainable from H.M.S.O. or a bookseller. These contain specimen pages of all the different scales, and will incidentally prove a source of useful and varied material for map work. A rebate of one-third in cost is made to Scout Troops in the case of 1-in. maps and smaller scales, and one-quarter for 6-in. and larger scale maps. Application for this rebate must be made to the Ordnance Survey Office, Southampton.

In addition to these various official maps, there are many others such as Motoring maps, emphasizing roads – the Ministry of Transport published one series – Ramblers' maps, emphasizing footpaths, Geological maps, and so on. The important thing is to select the map which gives the sort of information suited for our purpose, and also one of the appropriate scale.

The technical characteristics of a map must next be considered. The four important points that have to be dealt with are: (1) Direction; (2) Distance; (3) Location; (4) Representation.

(1) DIRECTION

The first thing that we expect the map to tell us is where a road or river, or some other feature leads. The earliest maps were road maps, giving ideas of how to get from one place to another. This necessity explains the popularity of the numerous Road Books that were issued in the eighteenth and early nineteenth centuries. A typical strip from such a Road Book is reprinted here (Fig. 9), giving the route from London to Waltham. This may be regarded as the map reduced to its simplest form, as it will be noticed that only features actually affecting the road are marked, as, for instance, the two hills near the fourth milestone. This particular road strip was printed in 1719, and it will be seen that it introduces the important information of compass direction. In the last chapter, the use of the compass was explained in detail and it is important that Scouts should get into the habit of looking, first of all, for the compass direction marked on any map they handle. Generally speaking, maps are printed with the True North at the top, but this is a purely arbitrary arrangement and is not always followed. Roman maps generally had the South at the top, and medieval maps the East, and a representation of Paradise in the border! Note that an arrow is always used for the Magnetic, and a cross or star for the True North.

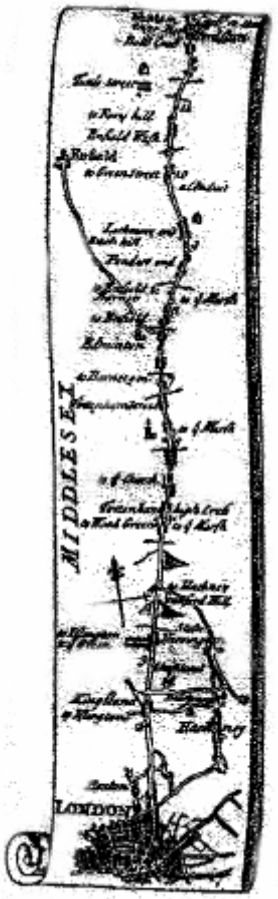

Fig. 9

Unless the map can be arranged so that the directions on it correspond to the directions on the surface of the land, it is not of much practical value; so that our first task is to *set the map.* This may be done in several ways. The easiest method is with the use of the compass. It will be noticed on any Ordnance Map that two directions are given, one for Magnetic North and one for True North.

a) To set a map with a compass, lay the instrument over the *Magnetic North Line*, which may have to be produced (see note on variation at end of last chapter). With the Prismatic Compass, the whole should be opened out flat so that the notches line exactly covers the Magnetic North line. Now revolve map and compass together until the needle, when at rest, points in the line of the Magnetic North. The map is then set.

b) The map can also be set when two objects can be identified on map and ground. Arrange the map so that a straight line joining the representations on the map coincides with an imaginary line joining the two objects on the ground.

c) If there is on the ground some straight feature such as a railway or a road, the map can be set by arranging it so that the representation of the feature on the map is parallel with the actual object.

(2) DISTANCE

It is of great importance to understand exactly what is meant by scale. This is the second feature to look for when the map is consulted, for without a scale a map is merely a vague sketch and gives no idea of distance. Ordnance maps express the scale in three ways; first by stating in words that the scale is, for instance, "One inch to one statute mile," secondly by a fraction, such as 1/63,360, and thirdly by a line divided and numbered in miles and fractions.

The first and third methods do not call for any comment. The second is the "Representative Fraction" (usually referred to as the R.F.). In the case quoted it means that 1 in. on the map

represents 63,360 in. on the ground, that is, one mile. The chief value of this method is for comparison with the scales of foreign maps where the metric system is used. There are various ways of measuring distances on maps: it is not a simple task, as, of course, very few distances are straight. One method is to lay a piece of thread along the line to be measured, carefully following all the curves. The thread can then be straightened out and measured on the scale or on a ruler. Some prefer to use a strip of paper in a similar way.

A special instrument called a map-measurer is obtainable; at the base is a small wheel which is run over the roads on a map and by means of a pointer and a scale, the distance covered is indicated with great accuracy.

(3) LOCATION

In a sense it may not seem necessary to deal with this, because when we buy a map we know presumably what part of the country it represents. But there are one or two points to mention. On the margin of the map, or sometimes on the back cover, references are given to the adjacent sheets with some indication of their scope. This is most useful, as the general experience is that the bit really wanted comes on the edge of one sheet, so that the neighbouring one has to be bought as well! Location is also given by the lines of latitude and longitude; the lines of latitude give the distance in degrees (an angle measurement) from the Equator, running from 0 degrees at the Equator to 90 degrees at the Poles. The lines of longitude give the distance in degrees West or East of an accepted meridian or datum line, the degrees going up to 180. The position of this line has varied considerably. During the seventeenth century it was in the Azores; the French used this up to the Revolution. In England from 1676 it was London, and later St. Paul's; Greenwich Observatory was first used as the Meridian by John Cary in 1794. The Greenwich Meridian is now being used for the International Map of the World; so this probably settles the matter for all time.

To give the position of a place we need two facts, the latitude and the longitude; the intersection of these imaginary lines gives the exact situation of any particular spot. Thus, Gilwell Park is Lat. 51 39° N., Long, 0, since the Greenwich Meridian passes through the Camping Field.

(4) REPRESENTATION

It has already been pointed out that the early maps (see Fig. 8) attempted to combine both plan and picture, this soon proved impracticable from the point of view of perspective alone. The problem arises, how to represent all the features of a district on a workable scale and yet be recognizable? Roads and rivers are easy, but what about mountains, trees, and buildings? The present systems adopted are the result of many experiments and it is instructive to compare an old Ordnance map with a recent one from this point of view.

The features to be represented may be grouped as (a) Natural and (b) Artificial.

(a) NATURAL

That is, mountains, lakes, rivers, forests, plains, etc. Of these features the most difficult to represent are hills and mountains. The first aid to a knowledge of height on a map is the spot-level: this is a definite point with the actual height given in figures. But spot-levels alone would not be sufficient to give a real idea of the variations of height unless they were so thickly placed as to obscure all other features on the map. So additional means have to be devised for this purpose. The early maps (Fig. 8) showed hills as little pictures; the next stage was the representation by means of shading, and hachures, that is, lines drawn to indicate slope. Some very beautiful hachured maps have been produced; the difficulty here is to keep a consistent direction of lighting. The modern method is to use contours; this system was adopted in the Ordnance Survey maps after 1843; since then has come the additional refinement of layering, that is, using colours in a settled series of tones to give a more solid appearance.

Contours are lines drawn through places having the same altitude above an agreed level. For Ordnance Survey maps this level is taken as the mean height of the sea at Liverpool between the

tides. Since Liverpool is in enclosed waters, a new level is now being used; – though not yet applied to maps – the level is now taken at Newlyn, Cornwall.

CONTOURS

Perhaps the simplest way to understand contours is to take a large, irregularly shaped potato, and cut it in half lengthways. The half potato placed on its flat base on a piece of paper represents a hill. Suppose the potato is 2 in. high and we want to show heights at intervals of half an inch. Cut the potato again, lengthwise down the centre at right angles to the base. Across the new sections we can draw parallel lines at half-inch intervals: cut horizontally along these lines in both parts; place corresponding slices together: the shapes of these will give us the shapes of the contours at intervals of half-inch. This little experiment and Figure 10 should demonstrate the principle of contours fairly clearly. Actual models can be obtained, but it is rather more fun making your own.

If we now look at any Ordnance Survey map, say the Brecon sheet opposite Page 6, of *Description of Small Scale Maps,* we shall see that exactly the same principle is applied to mountains. The hill to the N.E. of Brecon is a good example. In our model the lines were at intervals of half-inch: on Ordnance Maps this vertical interval is generally 100 ft.

But contours will tell us much more than the height of various places: from them it is possible to know something of the slope of the land. When contours are at equal distances apart, the slope is uniform: when the intervals are closer at the top than the bottom, then the slope is concave: if they are wide apart at the top and bunched together at the bottom, the slope is convex. Generally speaking, any crowding together of contours indicates a steep slope.

Perhaps the finest examples of contouring are to be found in the Siegfried maps of Switzerland. Scouts who go to Kandersteg should get sheets 473 and 488 and study them on the spot. A copy of one of the finest maps in the world – Frey's Berner Oberland – is also worth having on such a visit.

After this elementary beginning, the map-reader can follow up with more advanced contour work, such as working out road gradients, deciding problems of visibility, and so on. To quote again from C. E. Montague's Essays, *The Right Place:*

"As in the reading of printed words or a musical score, precision and speed in the reading of maps can pretty rapidly be carried further and further. Soon the map is read, as it were, not word by word, but phrase by phrase; the meaning of whole passages of it leaps out; you see, with something like the summary grasp your eye would get of the actual scene, the long facades of precipice and hanging glacier that there must be where the blue contour lines crowd up closely together right under a peak of 12,000 ft., with a northern exposure, and also the vast, gently sloping expanses of snowfield below, where the lines flow out wider and wider apart, expressing broad shelves, and huge, shallow basins hoisted on upper floors of the mountain. . . . He no longer has to tell himself, as he cons the endless lines: 'Where I see a succession of rising contour lines close together, and, just above them, a few lines further apart, and, above these, others close together again, it means that there is here a hollow in the mountain'; or 'where the curvilinear contours change their course and all slab inwards pointedly towards the heart of the hill roughly parallel to each other, make an acute angle, and then come out again to resume their old general direction, it means a deep, narrow glen or gully running up the hill-side.' The notation once learnt, the map conveys its own import with an immediateness and vivacity comparable with those of the score or the poem. Convexities and concavities of ground, the bluff, the defile, the long mounting bulge of a grassy ridge, the snuggling hollow within a mountain shaped like a horseshoe – all come directly into your presence and offer you the spectacle of their high or low relief with a vivid sensuous sharpness."

Other natural features, rivers, woods and plains, call for no special explanation.

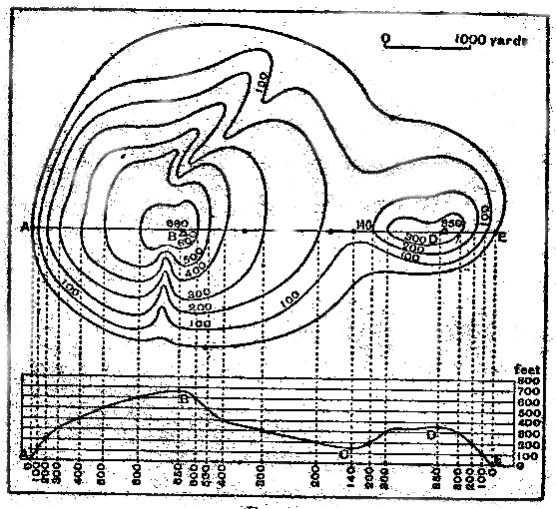

FIG. 10

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(b) ARTIFICIAL

In old maps each cartographer decided for himself how he would represent various man-made features: thus in the road strip, Figure 9, churches are shown as tiny pictures, and all roads look very much alike. There is an obvious disadvantage in this: it would necessitate learning a fresh set of signs for each maker's map. All these signs have therefore been conventionalized. The most convenient lists of these will be found in the two pamphlets of Ordnance Survey *Descriptions.* An abbreviated list is put on each map.

The best way of instructing a Scout in the meaning of conventional signs is not to give him the list and say, "Now, learn those." No surer way of blunting the edge of keenness could be invented. Take him for a map-walk with you, or get his Patrol Leader to do the job with him. As you come to the various signs, get him guessing as to what each represents: look round at the scenery: ask him lots of questions such as, how far is it to the nearest church? are we going up or down? does the road go over or under the railway? what do you think L.B. stands for? is the country well wooded? and so on.

GAMES AND PRACTICES IN MAP-READING

1. Many useful practices will be found in Laborde's *Popular Map Reading* (Cambridge), 4s. See especially page 13, Nos. 15-17; page 35, Nos. 13, 14; page 44, Nos. 15-20; page 54, Nos. 6-14; page 112, Nos. 43-46. These are by no means academic exercises, but are so framed as to appeal strongly to the boy's power of visualization and imagination.
2. Making of models in clay, etc., of a small area of the map.
3. Finding camping areas.
4. Planning hikes to avoid main roads as much as possible.
5. Planning wide games on 6-in. maps.
6. Planning treks when roads have to be used,
7. Picking out footpaths in neighbourhood.
8. Finding suitable signalling points.

BOOKS

Laborde, *Popular Map Reading.* (Cambridge.) School ed. 4s.
Unstead, *How to Read Ordnance Maps.* (Philip.) 6d.
Fordham, *Maps, Their History, etc.* (Cambridge.) 6s.
Notes on Map Reading. (H.M,S.O.) 1s.

Esson and Philip, *Map Reading Made Easy*. (Philip.) 3s. 6d.
Junior Contour Exercise Book. (Philip.) 9d.

CHAPTER IV

MAP-MAKING

"It was probably because Columbus was a map-maker and the brother of a map-maker that he discovered the New World."

W. P. JAMES, in *The Lure of the Map.*

AN explorer is not out merely for the fun of the thing: he regards himself as a maker of the trail so that others can follow after him without going through the same perils that he has experienced, so he makes a map of his route and puts in the positions of any notable landmarks.

The early map-makers did not work on any scientific plan: they used whatever rough ideas of size and distance were current at the time, and whenever facts failed them they filled in the gaps with their own beasts and monsters as space-fillers. The results were often of considerable pictorical and artistic merit.

With our more accurate instruments, and clearer distinctions between fact and fiction, such imaginary maps are not tolerated; the first thing we expect from any map is that it should be accurate as regards distance, direction, and description.

It is true that the parts of the world in which we live have all been accurately mapped, so that there is no immediate purpose in Scouts learning how to make a detailed survey: they will, however, find an added pleasure in the use of maps if they know a little of how the facts are ascertained, and this knowledge they can apply to such jobs as mapping a camp site.

Let us be quite clear as to our object. We are not aiming at producing a corps of surveyors. Possibly the very elementary work we do, may rouse an unsuspected interest in surveying, but that is a secondary consideration. When such an interest has been roused, the Scouter should put the boy into touch with an expert to see what possibilities there are for developing his talent.

The Scouter who is keen on maps and mapping – and once the enthusiasm has gripped him, it becomes irresistible – sometimes forgets this important limitation and tries to carry the whole Troop with him, sometimes achieving remarkable results, but, at the expense of other sides of Scouting.

The average Scout who is in training for his First Class Badge should at least be able to do the following:

1. Know his compass directions wherever he may be and point out and follow compass directions.
2. Be able to read a map.
3. Be able to make, for ordinary purposes, a sketch map of a camp site or a stretch of road.
4. Be able to make from a printed map, a sketch map of a stretch of country for such purposes as wide games, pathfinding, etc.

In the case of First Class Scouts – and perhaps Patrol Leaders – further stages might be:

1. Read and follow bearings.
2. Greater skill in map-reading.
3. Be able to make a triangulation of a field, camp site, etc., and make a fairly accurate road traverse.
4. Enlarge part of an Ordnance Map for some special purpose. The extent to which these more advanced stages can be carried depends entirely on each Scout's aptitudes and interests.

The point to keep in mind is that in this, as in all Scouting, the work must be gradually progressive. In this chapter, therefore, the following matters will be dealt with:

a) Sketch maps.
b) Triangulation.
c) Simple road traverse,
d) Enlargement of maps.

(a) SKETCH MAPS

A sketch map is one in which main outlines and prominent features only are given, without detail or elaboration. The only instrument used should be a compass. The result will not be scientifically accurate, but it should be near enough to give a working idea of direction, position, and relative size.

We all make such maps on occasion: if we have to send directions to anyone as to how to find, say, the Troop Room, we usually sketch out the streets near by and the main turnings: as long as such a sketch map serves its purpose it is a good piece of work.

On a First Class Journey, for instance, it is obviously impossible to produce an elaborate map: the report (see Chapter IV) will be adequate if the reference is given to the map used, and small sketch maps of awkward cross-roads or pathways added where it is felt they would make the route clearer.

Certain essential facts should appear on every map, however sketchy: these are – True North point, an approximate scale, and names of chief features. The True North point should be clearly marked, and normally it is best to have the North at the top, simply because we are accustomed to maps arranged in that way.

An approximate scale is important to give some idea of distance; this will probably be in yards. The Scout should know, of course, the average number of paces he takes for 100 yd., as this is his measuring unit.

A first map might very well be after the pictorial manner shown in Figure 8. Some very good camp-site maps of this type have been drawn by Scouts, and touches of humour can be introduced by means of matchstick figures and amusing notices.

There has been an interesting revival in the use of pictorial maps mainly for advertisement purposes. The "Jamboree, 1929" poster is one example, and others are in use on the Underground Railway. More accurate pictorial maps are of value for showing important buildings in towns such as London and Oxford.

Very soon, however, the use of accepted signs will be needed. Conventional signs on sketch maps are really simplified forms of those on printed maps, so there is nothing really new to learn. A list of useful ones is given in Figure 11. A conventional sign should always be clear, so that there can be no doubt as to its interpretation. If an object has to be represented for which the sign is unknown, then write in what the object is, so that there can be no misunderstanding. A specimen, sketch map is given in Figure 12.

For road strips, the specimen given in Figure 9 might serve as a very practical example – all necessary information is there given, and even the method of showing hills is worth imitating as the effect is quite clear.

It is very helpful in wide games to have sketch maps showing the area to be covered and the main features: here careful selection of essentials is necessary, such as any natural cover that will be an aid in stalking, slopes of hills, and bases, and so on. The Patrol Leaders should be given the job of making such games maps from the 6-in. sheet; they will then get an idea of the general lie of the country over which the game is to be played,

Special maps are also a help in training for the Pathfinder's Badge: large outline maps of the area should be prepared and on them such information marked as: Doctors, fire-stations, alarms, hospitals, post offices, railway stations, garages, and so on.

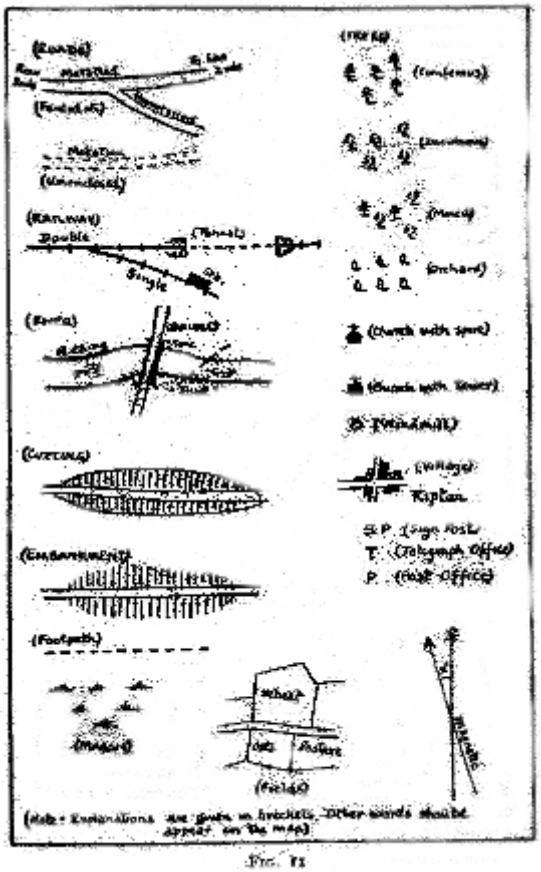

FIG. 11

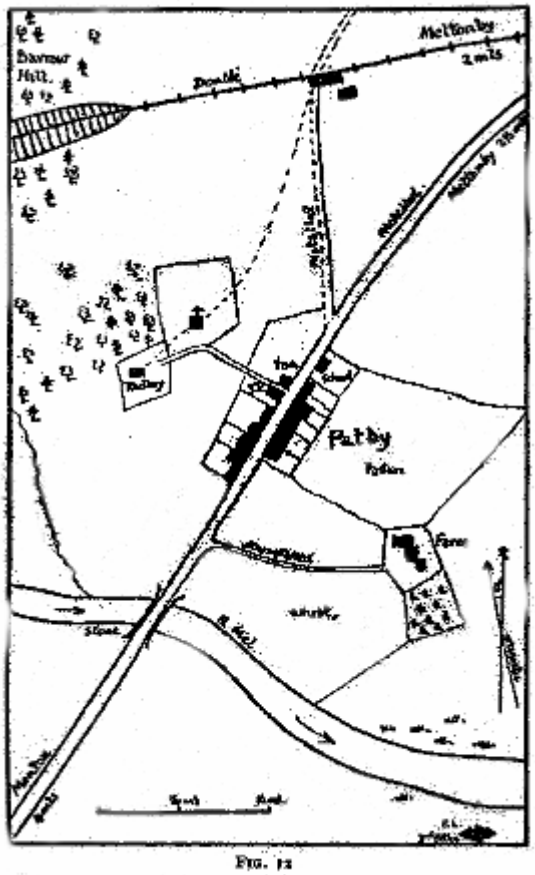

FIG. 12

Constant use of modelling should be made at this and all stages both of map-making and reading. The two, for instance, can be dovetailed together by first making a model to include a fair selection of different features – road, stream, bridge, railway, church – and setting this as a problem in mapping. In reverse order, a sketch map can be given out and each Patrol asked to make a model of it. Wet sand, plasticine, and modelling clay can be used: and much ingenuity can be called into play in the making of buildings, bridges, and so on, out of paper, matchboxes, and other odds and ends. A model of a new camp site, for instance, can be of great use in planning a summer camp. All kinds of interesting Patrol competitions can be worked out which include both operations, model from map and map from model.

(b) TRIANGULATION

Fairly accurate results can be obtained by triangulation with a Prismatic Compass.

A base line is first chosen: the longer this is the better the results will be. Mark the ends of the base with staffs: measure the length very carefully and take its bearing. Draw this line to scale on paper. At each end of this line draw in the Magnetic North and South line to make the plotting simpler (see Fig. 13). It is easier to work with magnetic bearings throughout and then to put in true bearings afterwards. Now select a number of prominent features that can be seen from both ends of the base line. Take two bearings of each of these features, one from each end of the line. Plot these bearings on the paper and the intersection of the two lines gives the position. Now, visit each of the various features which have been plotted, counting paces in order to plot the positions of intermediate objects. Occasionally, as for instance with a hedge or road, a bearing should also be taken along the object, to ensure its being correctly plotted on the map. Other details can then be filled freehand into this framework.

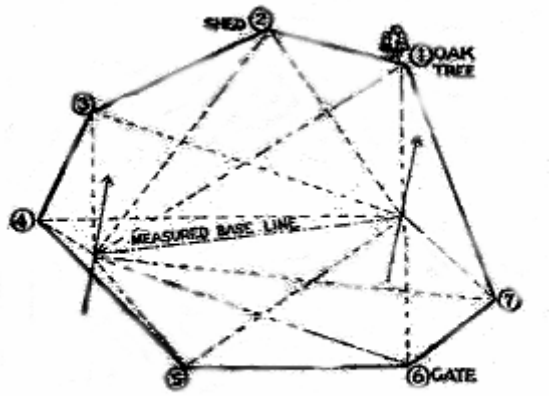

FIG. 13
Triangulation of an irregular field. (1)–(7) points to which bearings were taken from each end of the base line.

Sometimes it is necessary to find the distance of a near but inaccessible object. The simplest method of doing this will be found on page 72 of *Scouting for Boys* (1929). It may be also necessary to get back bearings of such objects; the method of doing this has been explained on page 14.

(c) SIMPLE ROAD TRAVERSE

Scouts who become keen on mapping should be encouraged to go yet another stage and make a road traverse. This is after the style of the actual work done by an explorer as he goes through an unknown country. He tries to include everything he can see and to get the positions of objects represented on paper as accurately as possible. The method here suggested is not, of course scientifically accurate, but it is a good beginning in what can be made a sound piece of Scouting.

The only materials required are (1) a strip of ruled exercise paper, about two inches wide, and (2) a compass.

Prepare the strip by drawing a line from the top ruling to the bottom one, then draw a small circle round the point where the line meets the bottom ruling, to indicate the starting-point, or "point of departure." Regard the space between each ruling as equal to 25 paces. Choose a quiet and rather winding road or path for your first practice.

On arrival at the starting-point:

1. Take a compass bearing along the road you propose mapping: sighting on the point where it disappears round a bend, or over a hill.
2. Note the bearing on your strip, to the left of the circle.
3. Pace the distance to the point you sighted on.
4. Record the distance on your strip by drawing a small circle the required number of spaces up the line.

(Assuming the distance to have been 100 paces, and remembering that each space on the ruled strip equals 25 paces, the circle will be drawn 4 paces up.)

Take a bearing along the road as before and note the new direction beside the circle you have just drawn.

The same procedure is to be carried out if a bearing has been taken on a point where the road disappears over a hill, and you find that it continues in the same direction. Pace the distance, and record on your strip accordingly.

Repeat these operations over a distance of, say, 450 paces. Figure 14 illustrates the following series of compass bearings and paced distances.

315/100; 290/50; 45/100; 68/75; 22/100; 350/75

To plot your map, pin a sheet of paper to a board. Regard the sides of the sheet as running North and South. Put the Magnetic North point in the top right corner. Consider, from your ruled strip, how far the road extends in the various directions and mark a suitable starting-point

on the paper. Place the starting-point on your strip over the selected spot on the paper, and put a pin through both to the board. Using the pin as a pivot, swing the strip until the line points in the directions given in the first reading, viz. 315 degrees. Use a protractor to get the angles. Hold the strip firmly in position, and move the pin from the first circle to the second. Swing the strip until the line points in the direction given in the second reading. Move the pin to the third circle. Continue until each circle has been pinned in its proper position.

To ensure accuracy in direction, draw a pencil line parallel to the side of the paper on which you are plotting the map. Place the compass over the pencilled line, and turn the board round until this line coincides with the North and South line given by the compass. With the pin as a pivot move the strip until it is in line with the required direction as indicated on the protractor. When all the points have been plotted according to the bearings, join each pricked point with a pencil line.

The result should be a fairly accurate map of your course (Fig. 15). Three spaces on your strip will probably equal 1 in., and in that case the scale of your map will be 1 in. to 75 paces.

So far, Direction and Distance only have been dealt with: and nothing more should be required in the first practice. On the next effort, intersecting roads, rivers, etc., can be indicated across the line: and notes made of interesting features on either side. At this stage the need for Conventional Signs will become apparent. For fixing the position of points of interest the following methods are available without further materials:

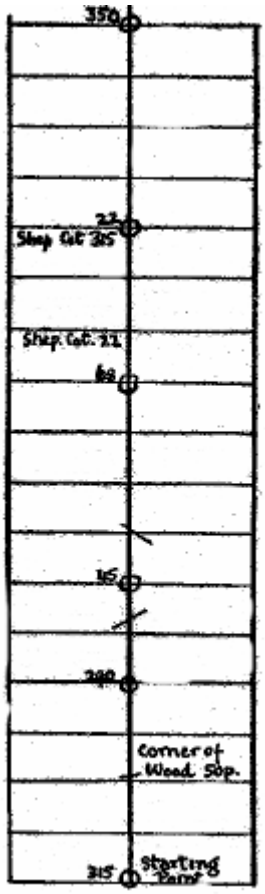

FIG. 14

(1) Off Sets and (2) Cross Bearings.

To make an Off Set: pace on till the point to be fixed is on a line at right angles to your course; say, the corner of a wood. Mark the position on your strip by a dot. Pace the distance from the road to the wood: record on strip as "Corner of wood, 50 paces." Cross Bearings: take a bearing, from one of the stations on your strip, on perhaps a shepherd's cottage. Note, Shepherd's Cottage, 22. Pace on to the next station: record distance as usual, then take a fresh bearing on the cottage. This time you may find that the bearing is 315. "Shep. Cot. 315" is noted.

When making your map, plot these two bearings from the two stations. The intersection of the lines fixes the position of the cottage.

(d) ENLARGEMENT OF MAPS

It is useful at times to enlarge part of a map: occasions on which this would be useful have already been mentioned. The method is very simple and calls for no particular skill. The part of the map to be enlarged is divided into squares of a workable size: 1-in. squares are usually sufficient. The paper on which the enlargement is to be made is then divided into the same number of squares as on the map. The features in each square on the map must then be copied carefully (measuring with ruler, getting angles with protractor, etc.) on to the corresponding large square on the paper. If a map has to be reduced the same method reversed can be followed, only some of the minor detail will have to be left out.

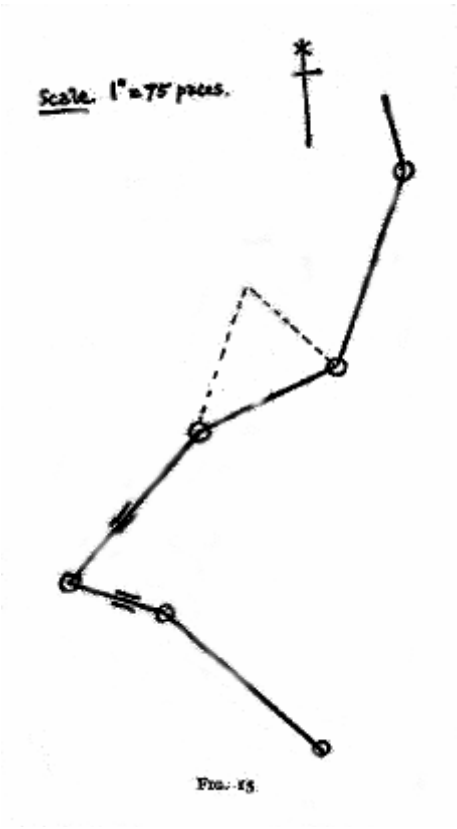

FIG. 15.

PRACTICES AND GAMES IN MAPPING

Some suggestions have already been made in the course of the chapter as to suitable practices and uses of map-making. A few additional ones may be of help.

1. Laborde's *Popular Map Reading*, page 13, Nos. 18-20; page 35, No. 5; page 55, Nos. 1-7.

2. Aerial photos can be used very effectively. Such photos are obtainable from the Surrey Flying Services (London Terminal Aerodrome, Croydon) and from the Air Ministry (Adastral House, W.C.2). The latter also give the reference to the O.S. 6-in. map, so that the actual map can be compared with the one drawn by the Scouts from the photograph. Occasionally such photos appear in the newspapers.

3. Drawing Treasure Island maps.

4. Maps for yarns, e.g. *Kidnapped, John McNab Coral Island,* etc.

5. Maps of explorers' journeys, e.g. Livingstone.

BOOKS

Surveying and Mapping, by Mackenzie. (Brown.) 1s. Gives a useful suggestion for mapping by "Ray Method."

Camping and Woodcraft, by Kephart. (Macmillan.) 10s. 6d. Volume II. Chapters III-VI.

Surveying for Schools and Scouts, by Richardson. (Philip.) 2s. 6d.

Map Work, Bryant and Hughes. (Oxford) 5s.

Open Air Geography, Vinall and Smith. (Blackie.) 5s.

CHAPTER V

REPORTING

"You will herewith receive my journals containing an account of the proceedings of the whole voyage, together with all the charts, plans, and drawings I have made of the respective places we touched at. . . . I flatter myself that the latter will be found sufficient to convey a tolerable knowledge of the places they are intended to illustrate, and that the discoveries we have made, though not great, will apologize for the length of the voyage."

JAMES COOK,
12th July, 1771.

POWERS of observation are not always linked with the ability to record clearly the results. We must therefore train our explorer in making useful reports that will give a "tolerable knowledge," as Captain Cook expressed it, of what has been seen and done.

The practice of making reports has a definite educational value; a good report implies clear thinking, and ability to marshal facts in due sequence and suitable form, so that their significance can be quickly grasped by the reader. Experience shows that under careful guidance, progress can be rapid in this type of work which makes a demand on the intelligence of the Scout. In after life he may well find this ability to be a valuable asset.

At first glance we may think that our own country, which must be the training-ground, has been so thoroughly explored that there is nothing further to do about it, but when we get down to it, we shall find that there is a considerable amount of intelligent observation needed to get a proportioned view of even our own small district. We must start with the right point of view, and know why we are asking our Scouts to learn all they can at first-hand about their neighbourhood, and of the parts of the country in which they camp.

There is no similarity between a military reconnaissance and a Scout journey; the objects of the two are quite unlike each other. A reconnaissance is described as "an expedition to obtain information concerning the country through which a march is to be made, the ground in the vicinity of a position or post, or the position of the enemy's troops." A Scout journey might be described as "an expedition to obtain a general idea of the countryside, its people, and its development." A big order! It certainly would be an impossible order were we to expect any one Scout to achieve all that is implied in that definition. Part of the difficulty about First Class Journeys and other hikes, in the past, has been that there was no certainty as to what was wanted, so the "tendency was developed to pass as satisfactory a pseudo-report of a military nature as if invasion were imminent! There is a real necessity now to revise our requirements and to settle in our own minds what it is we want our Scouts to do. It was with this in mind that *Exploring* was chosen as the title of this book, so that the key-note might be sounded throughout. We want our Scouts to develop the alertness of outlook that is typical of the best explorers; a keen interest in the life and occupations of the people they meet – "a keen interest" is not the same as "an inquisitive interest" – an appreciation of the beauties and antiquities of their own country, and a lively enjoyment of the facts of nature all around them. We want this not only so that they may enjoy a fuller life themselves through having acquired new interests, but also so that they may become informed citizens. The problems that confront us in our corporate life as citizens, can only be solved if we all get to know the facts on which alone intelligent opinion can be based; we must not only know our facts, we must be able to set them out clearly and without bias. Hence the need for practising our Scouts in methods of reporting facts they have observed.

The military type of report is excellent *for its own purpose;* but it is not our purpose. In this, as in all our training methods, we must allow for the personal element, and let each Scout develop the particular interest that appeals to him. One boy may be a naturalist; his reports should be largely, not entirely, from that point of view; another may be keenly interested in transport, let him concentrate on that during his journeys; a third may be attracted by the historical development of the district, he should be encouraged to pursue that line. The variety of interest possible is almost

without end. In one Troop there may be as many interests as Scouts; the pooling of all these individual contributions will constitute a fair survey of the district. Some Troops have done this and have produced a kind of local Doomsday Book; it is a work that Rover Scouts, for instance, could follow along more advanced lines.

The second part of this book deals in detail with a number of lines of investigation, and suggestions are given as to how they can be followed. In this chapter we are immediately concerned with training in reporting results.

A sound beginning can be made with verbal reports. This is worth doing thoroughly not only for its grounding in accuracy, but also as of service. Messengers are frequently wanted in camp, or the Scout may be asked to take a message for someone at any time. Some boys seem able to do such jobs with greater ease than others, but whatever the natural ability of the boy, his memory can be aided by showing him how to get the facts clear and organized. His first job is to weed out unimportant details and to concentrate on the main things. Take such a common type of message as this: "Go to the chemist's and buy 2 oz. of Epsom Salts." What are the main facts? CHEMIST: 2 ozs.: EPSOM SALTS. Or another type: "Go to the railway station and look up the trains leaving for London about ten o'clock." What are the key facts? TRAINS: LONDON: TEN O'CLOCK. If the Scout attempts to memorize a whole passage of this type word for word, he will probably get confused, so get him to pick out the key words only and memorize those. Such simple messages hardly call for any special method, but it is as well to start in this way so that more difficult types may be similarly tackled.

Other examples, gradually getting more difficult, are given below with the key words in capitals.

1. Go to Mr. COATES and tell him that I am catching the 9.35 tram on TUESDAY MORNING, and ask him to MEET me at 9.25 at the BOOKSTALL on the UP PLATFORM.

2. When the BAKER calls at the camp this afternoon tell him that we are LEAVING on FRIDAY MORNING, so that his LAST DELIVERY should be made on THURSDAY. But we shan't need our full order, 4 QUARTERNS will be sufficient. Ask him to let me have his BILL without fail on WEDNESDAY.

3. Take your PATROL and the TREKCART down to the village and get the following supplies:

2 lb. TEA @ 2s. a lb.
6 2-lb. pkts. QUAKER OATS.
2 lb. tins Red, White, and Blue COFFEE.
14 lb. POTATOES.
TIN OPENER.

(The wise Patrol Leader, when given such a message in camp, would ask each of his Scouts to remember one of the above items.)

4. Spotted Dog for Dinner to-day. Here's the recipe for your Patrol: 1 lb. FLOUR; ¼ lb. SUET CHOPPED fine; pinch of SALT and BAKING POWDER; ¾ lb. CURRANTS. MIX all together, add WATER until stiff PASTE. Make into a roll; tie up in FLOURED pudding CLOTH; put into BOILING WATER; and BOIL for just over 2 hours.

5. You want to know something about the Peewit? Usually seen STANDING MOTIONLESS in meadows, or FLYING in large FLOCKS slowly. SIZE of a large PIGEON; NECK short and thick; LONG CREST shown when disturbed; Colours; GREEN-BLACK; WHITE CHEEKS; UNDERPARTS WHITE: WHITE RUMP seen in flight; SHORT-TAILED; a PLAINTIVE CRY.

6. The way to Blunden village?

Follow this road until you come to the LETTER BOX on the gate-post on your RIGHT; about 20 yds. further on is a lane leading to the LEFT; go down that for about 200 yds., and you will see a STILE on the LEFT at the side of a five-barred gate; cross the stile and keep to the FOOTPATH; this comes out at the back of the CHURCH; go through the CHURCHYARD and you will be in the main street; the POST OFFICE is at the NORTHERN end of that street.

It will be noticed that the above are all practical messages, and it is desirable that generally we should use messages such as might conceivably be given to a Scout. Occasionally, a complicated one might be used for competition purposes to pick out the best message-runners, but common sense suggests that normally when a message gets a little beyond our memory powers, we should jot down the main points on paper; it is better to do this than to run the risk of making mistakes through forgetfuhiess. For instance, if a Scouter is sending a message to a doctor, he should undoubtedly write the facts down to avoid risk of error.

There are various games in message-passing that are good practice. Particulars of two will be found in *Gilcraft's Book of Games,* No. 13, page 80, and Mackenzie's *Games for Scouts,* page 124. In such games accuracy should count far more than speed.

The following further suggestions may prove helpful:

1. Useful especially for young Scouts. Post the Patrol Leaders at the end of the room each with the same assortment of miscellaneous articles spread out in front of him. Send one Scout at a time from each Patrol to a Patrol Leader (not his own) to bring back articles as detailed in a verbal message; e.g. 3 2-in. safety-pins and 5 1-in.; 4 red tram tickets; 7 clothes pegs; 9 square envelopes; 2 quarto sheets of note-paper. Amongst the articles displayed there should be, in this case, varied sizes of safety-pins, different coloured tram tickets, and some bus tickets, variously shaped envelopes and sheets of paper. Points are given for accuracy only. It adds to the possibilities of confusion if the rest of the Scouts are playing a noisy game.

2. Hand out to all the Scouts any old lengths of string that you have collected off parcels, etc. Give them such verbal instructions as the following: read out the whole series twice, and then let the Scouts set to work. Tell them to cut off various lengths with their knives; for example, 3 pieces about 2 in. long; 4 pieces 5 in. long; 1 piece 4 in. long. They have then to join them in, for instance, this order: a 5 in. to a 2 in. by a reef, add 5 in. by sheet-bend, add 2 in. by sheet-bend, add 4 in. by reef, add 2 in. by reef, tie on rest with sheet-bends. Points given for accuracy in lengths, in order and knots. Obviously a knowledge of personal measurements is required. This is a practice in accuracy of receiving a message and putting it into practice.

3. In the open country. This must first be worked out carefully with a large-scale map. Send out Patrol Leaders to points on the circumference of a wide circle and as far apart as possible. Now send out their Scouts one at a time with messages as to how far and in what direction each Patrol Leader is to move, e.g. 50 paces to the N.N.E. The Scout who has delivered that message returns and another is sent with a new order; 75 paces to the S.S.W., and so on, until each Scout has delivered two or three messages. When the game is concluded each Patrol Leader should be near the spot previously plotted on the map. Wrong position means either that a wrong message has been delivered, or that the Patrol Leader doesn't know his compass directions. Bearings could be used instead of compass points. This game is capable of many variations.

4. Looking and reporting. Send off the Scouts to some distant object; if possible each to a different one; tell them to bring back a verbal report of what they have seen *en route* and a full description of the object; suitable objects would be, a cottage, the village post office, the local policeman, the church tower, etc. In a town this can be done by sending the Scouts to the museum with instructions to look carefully at one particular thing, say a case of birds, or a lion, and then to describe it on return. Fix a time-limit according to distance. The Scouter must, of course, have previously studied the object – a little tact may be required if people are included!

5. A somewhat similar game can be played in a club room by showing an object or picture for two minutes, and asking for detailed descriptions. This combines observation and reporting. Insist on accuracy: "a red-book," for instance, is not sufficient – expect other details such as approximate dimensions, title, author, publisher, etc. The writing of "wanted" descriptions of each other is also good fun.

WRITTEN REPORTS

So far we have only been concerned with training in accuracy in repeating facts; the written report is an advance on this, and will need a considerable amount of preliminary practice before it can be done well.

The modern explorer – such as Captain Scott – is accompanied in his journeys by a number of experts such as geologists, meteorologists, naturalists, and so on. The leader writes a general report of the expedition, so that the Public can get some idea of what he has accomplished; then each of the specialists writes a learned report on his section; thus Scott's last expedition was described in two volumes – fascinating reading they are too – but the scientific reports fill eleven volumes.!

The Scout is not expected to write a popular work on his journeys, nor a scientific report of his observations; he is expected, however, to produce a general account of where he has been and what he has seen, with notes on whatever is his particular line of interest.

For such a report there is no ideal form. Suggestions can be made, however, as to methods which have been found helpful in presenting a clear report; that is one in which the information and observations are marshalled in such an order that they are easy to understand. This last sentence gives the test of the efficiency of the method employed, but it does not follow that because such a method is adopted therefore the report is a good one; there are many ways of doing the same job quite as effectively, A report is judged mainly on the accuracy of its information, the degree of observation revealed, and the general Scouting qualities shown. A methodical way of setting out the information is undoubtedly a help, but it must not be stressed too much at the expense of more important matters.

One or two general suggestions on method may first be dealt with.

(a) Be concise and exact; telegraphic language should be used where possible. If an attempt is made to write an essay, the amount of time required will be more than can be spared, the inevitable result will be that the report will lack proportion – much space will be given to the first stages, and very little to the last. Exactness means strict correctness and the avoidance of woolly expressions, such as "large" and "small" without any reference to a standard of judgment; thus it is clearer to say, "a bird about as large as a crow" than to say "a large bird," because everyone has some idea of the size of a crow.

(b) All NAMES should be printed in capitals.

An elementary precaution and not a slight on handwriting!

(c) Plenty of spare room should be left on the paper for additions.

(d) When finished, the writer should re-read the whole to see if he has omitted anything.

(c) and (d) are linked together.

(e) Common sense should be exercised in selecting facts.

To cumber a report with a lot of trifles that are not significant is to defeat its primary object. This also implies that permanent things are more important than passing accidents.

Now as to one method; this is based on experience and has been found helpful. A large-paged exercise-book or drawing-hook is used. On the front page the following facts are noted: Name: Troop: Place and Time of departure: the reference number of Map used, and the general state of the weather (as this affects visibility).

The left-hand side should be ruled into three columns; 1 and 3 should be about an inch wide, leaving 2 for the main report. Column 1 can be used for stating times at convenient stages; column 3 for giving distances covered corresponding with the stages in 1.

The right-hand pages should be left free for putting in thumb-nail sketches and details of cross-roads, etc. If this can be of blank paper it will make for neater effect.

What kind of things may be expected in the second column? This is the general report apart from any special bias that the writer may have.

First of all a clear account of the route travelled with references to the map used may be expected. Where there is likely to be any confusion in following the route, awkward cross-roads, or

paths not too clearly marked, care should be taken to get the directions clear; a sketch of a land mark or a small map will help.

Secondly, some idea of the type of country travelled through should be given; the natural features should be mentioned; kinds of crops; nature of woods; open spaces; public footpaths; streams, lake; canals; bridges; roads.

Thirdly, an interest in the human and national life of the district should be shown; whether it is largely industrial or agricultural; what kinds of houses and cottages there are to give an idea of the well-being of the people; whether there are any local crafts carried on; animal and bird life.

Fourthly, the writer should show his interest in man's structures, his churches, castles, ruins, country houses, windmills, and any other historical features of interest.

An intelligent Scout should, after his long training up to the time when he is fit to take his First Class Journey, be able to note such matters as are mentioned above.

This all implies previous training; this has been constantly mentioned, but at the risk of boring the reader, it is worth underlining the need for preparing the Scout by short tramps with the Scouter, by short journeys on his own or with a pal, and by practice in this very business of reporting. We have been too apt to expect a Scout to write intuitively a good journey report, and when he has naturally failed, except in a few cases, we have blamed the test!

Certain things have been purposely missed out in the above list. Roads are mentioned once, because the map will give us all the information we want about them, whether they are First Class or metalled and so on. Nor are pubs referred to. If you want to know where the nearest one is, look at the map. The same applies to railways, stations, post offices, etc. There is no point in expecting the Scout to write down any information that can be read off the map with ease. It may be said that the map includes many things mentioned above; true, but it tells us very little about them; no one is interested in the architecture of the average pub, but whether a church is old or modern is of interest – certainly if the pub is of additional interest apart from its normal function it should be mentioned as an historical feature.

It will also have been noticed that very little is said about Nature. This is better left as an additional report for the boy who is specially interested; other special reports should deal with whatever the boy is keen about – this might refer to any of the matters listed above, or to those dealt with in the latter part of this book.

The right-hand pages have been left free for thumbnail maps and sketches. Sketching is merely another way of recording facts and often a few rough lines will give a clearer idea of an object than a page of writing: it does not imply the talent of an artist, nor even of an amateur, but the ability to see things in their right proportions and to represent form in simple outline. Many Scouts have never even tried to do this, and once they are encouraged for report purposes, they will soon be able to sketch recognizable outlines, and will thereby have acquired an additional means of recording information.

A few practical hints may be of help to the tyro, though the Scouts would learn more by watching a sketcher at work than by oral instruction.

1. As much time should be spent on observation as on the actual sketch. Accuracy of observation should be tested by closing the eyes and trying to recall the shape; open eyes and compare.

2. Chief feature should be first selected; every sketch should have one main object, all else must be subordinated so that.

3. That object should be represented with a few decided lines giving it height and width, these should be used for measurement of all the other objects in the sketch.

4. Detail to be ignored; half-shut eyes helpful; making silhouettes is excellent training in finding FORM,

5. From simple to elaborate, e.g. tent before church. Don't start with trees, but when drawing them, find their essential forms, leaving out small details.

6. *Perspective*: don't be frightened at the word, it merely means representing things as they *appear,* and not as they are. Look at a line of telegraph poles; the farthest appears the shortest, but they remain *upright.* Look at line of railway; lines *appear* to meet on eye level. Apply these two facts to lines of buildings, etc. One way of showing this: with a piece of pointed soap, follow on a window-pane the lines of any outside object, e.g. house.

7. Nearest lines should be sharpest; farthest lines faintest. This gives *depth.*

8. Shading should be reduced to minimum to give *solidity.*

Figure 16 contains a number of thumb-nail maps and sketches of the type found useful in reports.

Journeys should not stop with the First Class Test; that should be regarded as the stage at which the Scout is a proved explorer. He should then be encouraged to go further with his interests, and get to know all he can about some district; he is now qualified to make himself an expert in one branch. Future developments will include overnight hikes, and hiking tours both in this country and abroad. The value of keeping a log and possibly of making a full report should be urged upon Scouts or Rover Scouts who undertake these more advanced forms of journey.

BOOKS

Discovery (Leplay House, 65 Belgrave Road, S.W.1). 3d.

Sketching from Nature, by Littlejohns. (Winsor and Newton.) 2s.

THE EXPLORER IN ACTION

CHAPTER VI

EQUIPMENT

"It is one of the blessings of wilderness life that it shows us how few things we need in order to be perfectly happy."
KEPHART.

BEFORE he can set out on his journey, the explorer has to consider carefully what equipment he will need. If you read the accounts of big expeditions – such as that to Mount Everest – you will find that a great deal of time had to be given to all preliminary arrangements before a start on the actual job could be made; every item of equipment tested thoroughly, food supplies arranged, bases fixed, and every detail thought out many months in advance. The same applies to Scout journeys on their much smaller scale; we must think ahead and settle in our own minds what essentials will be needed to meet the requirements of our expedition. Scout exploring is carried out mainly in three forms:
(1)The First Class Journey, (2) Trekking, and (3) Hiking.
These must be considered in turn as each has its own particular limitations as to what can be taken.

(1) *First Class Journey*

The Chief is keen on this being an overnight business so that all the best of a Scout's training may be tested. The value of that test can be increased if it is assumed that the Scout and his pal are going to be out of touch with ordinary civilization, and must therefore plan accordingly, carrying with them shelter and food.

Two items of the necessary equipment have already been dealt with in detail, the compass and the map. The Scouter should hand these over to the Scout with the sealed instructions for the journey. As far as clothes are concerned, full Scout uniform will, of course, be worn; for this one night a spare pair of stockings and a sweater and a light-weight mackintosh will be all that are

necessary. Pyjamas, towel, and the usual toilet gear should be taken. Knife, fork, and spoon, a mug and perhaps a plate, will be needed. A sound ground-sheet is perhaps most important of all the gear taken.

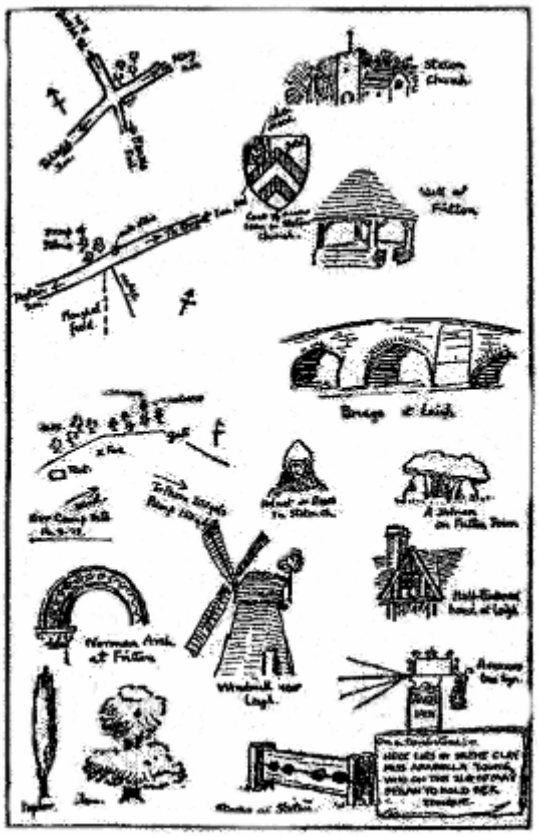

FIG. 16

Some kind of shelter will have to be carried. There are, of course, innumerable (and generally expensive) light-weight tents on the market, and some Scouts have made their own. A home-made tent is of the simplest design, really amounting to an A-shaped piece of canvas; it is not beyond the skill of any Scout to carry out the task of making it himself. Perhaps the most convenient form of portable shelter is made up of two bivouac sheets. Each sheet consists of a rectangular piece of waterproof material, 5 ft. 6 in. by 5 ft., with a triangular piece attached, 4 ft. long (see Fig. 17). A series of buttons and corresponding holes makes it easy to fasten two sheets together to form the tent; the two triangles can be buttoned together in bad weather or pegged out as wind screens, or just as extensions. Each sheet weighs 3 lb. The great advantage of this form of shelter is that a stout piece of cord serves as guy, pegs can be made from any bits of wood, and the poles can be the ordinary Scout staffs. The cord and the staff should be part of the Scout's equipment in any case.

FIG. 17
Bivouac shelters

Some kind of cooker will also be needed. There is no need to have any of the elaborate arrangements that are sometimes advised. The two essentials are something in which to boil water and make porridge, etc., and something for frying. For these purposes a round-shaped pot will do,

and a small fry-pan; both can be obtained for very little cost. Whatever is chosen should be serviceable; the type of billy with a small base and tall sides and a fry-pan with a hinged handle is a nuisance, as the billy may upset when at boiling-point, or the fry-pan fold up at the wrong time. Matches are also part of the cooking equipment, and should be kept in a watertight bottle or box.

The choice of a satisfactory pack is the next matter to consider. Undoubtedly experience says, a rue-sac. This is used all over Europe in mountainous countries where people are accustomed to carrying their gear on the back. Rue-sacs large enough for the First Class Journey can be obtained as cheaply as 3s. 6d.

A hand axe may be useful but is not essential, as all the wood needed for the type of small fire made on a journey can be broken off or cut with a Scout knife.

Notebook and pencil should not be forgotten, and advantage should be taken of rests for jotting down the main facts of what has been observed: important details should be noted at once.

Before setting out, the Scout should plan his general procedure. He does not know yet the exact details of the route, but he knows that he has to cover at least fourteen miles, so he should first decide how he is going to apportion his time. At whatever hour he starts he should determine to fix his camp site soon after tea-time; he will then have leisure to cook his meal in comfort, write up his notes, and settle down for the night.

Farmers and landowners are generally willing to allow Scouts to camp for the night on their land, and it is rare to hear of a refusal. The Scout should be reminded that this ready permission is based on courtesy, and that equal courtesy is expected from him; town boys, and even country boys sometimes, need to be reminded of one or two points, such as shutting gates, keeping out of standing hay, leaving hedges alone, and keeping the camp site clean.

A good night's sleep is essential. There is much to be done before getting away in the morning, but there is no need to be on the road too early. Gear will need drying out – there is dew to be considered as well as actual rain – washing and cooking will take some time, clearing up must be very thoroughly done, a sketch map of the site should be made, gear packed carefully, the farmer should be thanked, and if there is a small job that will show the Scout's gratitude, that should be gladly undertaken. All this means that he will not be on the road much before ten o'clock.

Two hours' tramping before lunch will be sufficient, and this should be done at a comfortable pace; there must be no idea of breaking records; he is out to use his eyes, and that cannot be done when going ahead as fast as his legs will take him. He may want to turn aside to look at some object of interest, or to make a sketch. A rest should follow lunch during which notes should be made up and the rest of the route looked out on the map. He can then decide how much time he has for the remaining part of the journey, and plan out his time accordingly, leaving opportunity for finishing off his report and sketches.

This last point is important. It should be possible for the report to be done *en route*, considering that the mileage is small for the number of hours allowed. The Troop and the local Association should establish the tradition that First Class Journey Reports are handed in on return, and someone should be ready to receive them. The objection may be raised that the result will not be so satisfactory to look at, as a report written up at leisure; certainly this may be true, but it is better to get the report hot from the trail than cold from the arm-chair; such an unedited account of what the Scout did and saw will give a far better insight into his abilities than any number of perfectly written sheets adorned with red ink.

This is another reason for urging the value of the overnight journey; there is not time to write up notes when fourteen miles have to be covered in one day, nor is the Scout given a chance of exploring off his route at all. So whenever possible, the overnight journey with the report on return should be the normal practice.

In judging such reports, the following points are important:

1. Ability to look after himself, in providing shelter and food.
2. Ability to follow a given route accurately.

3. Powers of observation.
4. Ability to make a clear report of what has been done and seen.
5. Use of thumb-nail sketches and maps to illustrate important facts.

Here, as in all Scout tests, *effort made* should count before all else, bearing in mind that this test is the culmination of work up to First Class standard. "Culmination" does not mean "end," and this point should be stressed with the Scout. Passing the test is a sign that he is now, as it were, a licensed explorer, authorized to go out on his own for fresh adventures; he should be encouraged to go further afield, to get to know all he can about his surrounding district from his own observation, from talks with people he meets, and from maps, museums, books, papers, and all the innumerable sources of information that are open to him.

(2) *Trekking*

The Troop, or one or two Patrols, should also go exploring. Since the Scouts will be at various stages of experience, they will not all be capable of carrying their gear on their backs, nor will they all be sufficiently expert in looking after themselves to be allowed to go off without guidance and training. This is where the trek can be such a useful stage in Scout life before the hike becomes practicable.

There are advantages in trekking as a form of moving camp; the very name has romantic associations. The name comes from the Boers of South Africa *(voortrekker* means pioneer) who rather than submit to the restrictions of a political Constitution, sacrificed their land and belongings in the south, and putting their movable possessions into wagons, struck for the north, and so occupied such territories as Natal and the Transvaal. The Boer wagons were drawn by oxen, sometimes twelve yoke of them, and most Scouts have read yarns about these original trekkers who "out-spanned" at night and "in-spanned" in the morning. That type of life is well described for instance in *Jock of the Bushveld.*

The Scout trekker depends on his own strength for pulling power, but he, like the Boer, puts his gear in the cart and strikes out into unknown country, relying on his skill as a camper to see him through. This moving camp calls for every bit of out-of-doors craft of which a Scout is capable; there is more actual camp work involved than in a standing camp; there is the daily search for a site; pitching tents and striking them once a day; improvising fireplaces; finding fuel; adjusting themselves to a new set of conditions each day; during the journey there is constant need for use of maps; the changing scenery calls for open eyes, and the labour of pulling, however light, demands team work and cheerfulness.

Equipment will be slightly different from that for a standing camp. One advantage of a trek is that the use of a cart allows a stronger type of tent to be taken than on a hike. Bell tents are very heavy for this job – they weigh about 80 lb. each – and their poles are awkward for packing. Small A-shaped tents are best, as they are light and pack up into a small space. The rest of the gear will be much the same as for ordinary camping. Cut down cooking pots to a minimum, and take a Primus or other stove as a good standby in case there is real need for a quick hot drink after a wet day.

The most important new piece of equipment is a trek-cart. There are a number of different designs on the market; in choosing one pay most attention to its springing; a well-sprung and balanced cart exacts very little effort in pulling. A waterproof cover will also be needed. The temptation with a trek-cart is to overload it; remember that every pound added has to be pulled uphill at times.

The normal procedure is as follows. Breakfast should be over by 8.30 a.m. Washing, etc., has been done previously; have an easy half an hour for doing odds and ends, using latrines, etc. At 9.30 call the Troop together, assign jobs (if not already detailed) such as striking tents, clearing ground, filling in rubbish pit, and so on. All these should be finished by ten o'clock. Personal gear must then be packed and brought to the trek-cart where one of the Patrol Leaders will take charge and see to good packing; that is, kit so stacked that the cart will almost balance without support.

The party should be off by 10.30 a.m., after thanking the owner and asking if there is any job that the Scouts can do for him.

Trek *leisurely*, until 12. By leisurely is meant going along steadily for say half an hour and then easing off for ten minutes. Stop, if possible, at places worth while. Have a cold lunch of fruit, cheese, bread, butter, with water to drink. Ban all mineral waters! Rest for an hour or more until 2 p.m. Then take the road again until 4, or if things are in good swing, until 5. Look for the camp site, and get camp pitched and all snug as soon as possible. Cook the big meal of the day, and then finish with a camp-fire or a yarn.

Some trekkers like to fix up their camp sites beforehand. There is much to be said against this; it robs the trek of some of its romance, and it ties you down to getting to a definite place each night, and any walker will agree that this is most undesirable when on foot. It is a good plan to fix on one or two villages to which letters can be sent poste restante, so that parents feel that all touch is not lost. Have a general plan, but don't hesitate to change it as you go along. In making that general plan, select the second-class and third-class roads, if you value your peace of mind. Get into the wildest country you can, right away from everybody; the trek-cart makes it possible to carry a good supply of food, so there is no need to stick too much to towns and villages for supplies.

(3) *Hiking*

This may be regarded as *the* explorer's method above all others; therefore it should come as the final method used by Scouts. Some suggest that, apart from the overnight journey, it should be used only by Senior Scouts and Rover Scouts. It is hardly necessary to go to this extreme limitation provided common sense is used in deciding whether a boy is fit enough and sufficiently experienced to go hiking.

The method has one great advantage over trekking; it is not necessary to stick to roads, but use can be made of every footpath available; the essence of hiking indeed is striking across country. One of the best hikes described was made by Hilaire Belloc; he ruled a straight line on a map from a town in the Vosges to Rome, and then said, "I will walk along that line," and he kept to it as near as it was humanly possible. The story of that hike can be read in the *Path to Rome.* Another good hike of recent date is described in Gibbon's *Tramping to Lourdes* – an amusing book and full of hints for the hiker. Other kinds of hike are described in Morley Roberta's book *The Western Avernus,* or in Davies' *Autobiography of a Super-Tramp.* The Scouter will find some rare yarn material in these books.

No two people take the same kit on a hike; it is largely a matter of experience; but if it is borne in mind that every ounce has to be back-packed, unwieldy loads will be avoided. The tendency is to imagine all kinds of awkward situations in which such and such would be useful; after one or two hikes, it is found that these situations occur so rarely that provision for them is a waste of energy. Certain items must not be sacrificed for lightness. Chief of these is the ground-sheet, which is more important than a tent or bivouac. The total weight should be kept to an average of 20 lb. for a fortnight's hike. Sometimes it is useful to post on parcels of clean clothing in advance to save weight. Three pairs of stockings should be taken, not too new, and worn on different days. A hiker depends on his feet, so some advice may not be out of place. Wear stout shoes or boots, not new, but sufficiently worn to the feet to be comfortable. Take some dubbing to keep the leather pliable. Wash the feet night and morning and dust with boracic powder. Some people soap their socks, but this is messy and no better than using powder. All kinds of tips are given by some walkers, such as using methylated spirit to harden the feet, rubbing lard over them, or – in the days when it was cheap – pouring whisky into the boots! If, however, the hiker gets into training before setting out, and takes his first days quietly, he will have very little trouble. If blisters come, as they will on the best regulated feet, prick them at the side, squeeze out the fluid and put a piece of adhesive plaster over the blister. Note that plaster is an essential item, and should be kept with some darning materials.

Hiking is a matter of experience, bitter experience sometimes, but once the fever has been caught, all other methods of camping fade into tameness.

Finally, treks and hikes should not be confined to this country. There is, of course, much fine country in these Islands for the trekker and hiker, but he should also get abroad. It will add to the sense of adventure, and he will be able to get into greater forests and wilder districts than any of which we can boast. The expense, apart from getting to the jumping-off place, is not great, and the additional experience and interest make it well worth while. A slight knowledge of the language is enough, though Gibbons when he tramped to Lourdes did so with a minimum of French and that mostly not understood!

BOOKS

The Gentle Art of Tramping. Stephen Graham. (Benn.) 6s.
Hike and Trek. Morton. (Harrap.) 3s. 6d.
School Scout Troops. Reynolds. (Pearson.) 2s.

The last two contain accounts of trekking and hiking on the Continent.

CHAPTER VII

THE COUNTRY-SIDE

An endless quiet valley reaches out
Past the blue hills into the evening sky;
Over the stubble, cawing, goes a rout
Of rooks from harvest, flagging as they fly.

So beautiful it is, I never saw
So great a beauty on these English fields,
Touched by the twilight's coming into awe
Ripe to the soul and rich with summer's yields.

JOHN MASEFIELD.

THE remaining chapters of this book will be concerned with a number of topics that will suggest lines of interest for the explorer. It is impossible to make an all-inclusive grouping of such matters, but the following classification will cover most things.

1. The country-side.
2. Highways and waterways.
3. Man and his work.
4. Things of the past.

Perhaps it is as well to reiterate the need for selection in dealing with such a vast mass of facts as any expedition brings into notice. The Scout should have a good eye for general features, but also a particular interest in some subject that appeals to him strongly. The development of such an interest is part of our work as Scouters, but we must go warily. To put the whole of the suggestions contained in this book before any Scout is to court disaster. In short rambles with his Scouts, in camp expeditions and during other outdoor activities, it is usually a matter of time only before each Scout's line of country is revealed; once that is known, then the appropriate matter in this book can be chosen to suggest further means of investigation.

Apart from this encouragement of specific pursuits, the Scouter should try to rouse in each of his Scouts a real enthusiasm for the country-side; indeed it is difficult to imagine a Scout who is

not keen on the out-of-doors world. We can here do valuable work. Much is written about the destruction of the scenery of England, but consolation may be found in the undoubted fact that side by side with much desecration, there is developing a strong public feeling, expressed in the formation of various Societies as well as in print, that it is a common duty to preserve whatever is beautiful. If we can get our Scouts to enjoy the unspoilt country-side, they will be missionaries for its preservation, for no man destroys what he loves.

The reasons for encouraging this attitude have been well expressed by Professor G. M. Trevelyan. "The preservation of natural beauty as an element in our nation's life is a cause that deeply concerns people of every sort who are working to maintain any ideal standards and any healthy life. The world of religion in all its branches, the world of education, the patriot, the social reformer, the lover of old times, the lovers of literature and poetry, the artists and musicians, the bird-lovers and zoologists, all have the strongest possible motives to forget all feuds in common support of this cause. They give it too little attention, for if natural beauty disappears, religion, education, national tradition, social reform, literature and art, will all be deprived of a principal source of life and vigour that in our island has helped them immeasurably in the past and is helping them still. Without vision the people perish, and without natural beauty the English people will perish in the spiritual sense. In old days the English lived in the midst of Nature, subject to its influence at every hour. Thus inspired, our ancestors produced their great creations in religion, in song, and in the arts and crafts – common products of a whole people spiritually alive. To-day most of us are banished to the cities, not without deleterious effects on imagination, inspiration, and creative power. But some still live in the country and some still come out on holidays to the country, to drink in with the zest of the thirsty man the delights of natural beauty, and return to the town re-invigorated in soul."

We may feel that all this is rather high-flown for our Scouts, especially for those who spend their lives under the worst of town conditions, but experience proves again and again that such a love for the country-side is latent in everyone, and needs little to call it into life.

GENERAL FEATURES

A Scout should be able to give a clear, general description of a stretch of country through which he may pass. For this purpose he will need to know the meaning of a number of useful terms which have definite applications, and for that reason offer ready means of accurate description. The most useful are here explained in alphabetical order for convenience of reference: the best way of getting Scouts to understand such terms is to give the description and then ask them to make models of what they imagine each feature looks like: mistakes can then be rectified by the Scouter making a correctly shaped model.

Bluff: a low headland with perpendicular broad face.
Brow: part of a hill where the lower slopes become much steeper.
Crest: just before the actual summit of a hill or mountain, where the slope lessens.
Foot of a hill: the slope rising from the plain to the brow.
Foothill: one lying near the base of a mountain.
Knoll: a small foothill.
Plateau: an area of high, level ground.
Ridge: high ground connecting two hills or mountains – in latter case sometimes called a *col* or *saddle.*
Spur: a projection from a mountain: short spurs are also called *shoulders* or *buttresses.*
Undulating; ground that alternately rises and falls gently.

Local variations of terms should be noted on the Ordnance Map, such as, for *hill,* the terms *fell, low, ben,* and *tor,* the prefixes *pen, carn, cairn,* and the suffix *don;* for *lake,* the terms *tarn,*

loch, *mere*, and *broad*. Sometimes there are slight modifications in the applications of such parallel terms.

A real understanding of the formation of the surface of the earth, necessitates a knowledge of geology (see Prospector's Badge). A Scouter who has such knowledge can add considerably to the interest on an expedition, and with the aid of geological maps explain much that otherwise could not be understood. He could explain, for instance, that the great extent of London Clay in the south-west of Essex was favourable to the growth of forests, consequently for centuries that part was not settled in and was left to the wild beasts. But the parts of Essex where there are sands and gravels formed more open country, and gave a good supply of water, and were consequently the sites of all the earlier settlements. Such matters as ice-action, river-erosion, and well-exposed strata will also be of interest in explaining the formation of scenery.

NATURE LORE

The acquisitive instinct is strong in all of us, and its first form is a desire to collect things, tram tickets, stamps, birds' eggs, flowers, matchboxes, indeed anything that can be collected. As we grow older so our subjects change in character; with some it is a passion for collecting titled acquaintances, with others, Old Masters. They are all about as useful as each other, unless appreciation goes with the mere amassing of specimens.

Little harm is done by most of these manias, but when it comes to collecting specimens from Nature, other considerations have to be taken into account. Collection in this case so often means destruction; and the Scouter must try to substitute the higher motive of collecting knowledge by observation. The rifle is giving place to the camera in the wilds, and the specimen box must give way to the notebook and field-glasses.

This is not an easy task, but it is well worth striving to achieve with those boys who show an interest in natural life. Even in the Troop Room something can be done to encourage the better outlook. Photographs of birds and animals in their natural haunts might be put up on the walls from time to time; but they should be frequently changed. The Scout will soon appreciate that it is a far greater achievement to have shot a lion with a camera than with a rifle; he will at once realize the courage required to get such photographs, and the considerable Scouting skill of the man who used the camera at such short range.

Many of the Natural History books published now are illustrated with photographs of birds and animals in their familiar surroundings; full use of these should be made to inspire the Scout with a desire to know wild life at first-hand by observation.

Naming things is the preliminary step to knowledge. Encourage the Scouts to recognize flowers, trees, birds, and animals by name, but let them realize that this is only a beginning; a label is useful for identification, but it tells us very little about the nature of the object itself. To the town boy it is marvellous that the shepherd can distinguish one sheep from another as if they were personal acquaintances; the shepherd, can do that because he lives with the animals; he gets to know them so well by their habits and peculiarities that to him they are separate personalities. That is the stage we want our Scouts to reach.

The field is a wide one, and the trouble is to know where to begin. Each Scout must choose his own line of interest, and pursue that for a time until he has got a fair grasp of the scope of that particular part of the field. The best way to encourage all such Nature observation is by out-of-doors expeditions and hikes. The worst way is to start in a museum. Stuffed animals mean nothing to a boy; he wants life, and the sight of one live cuckoo, or the sound of one woodpecker, in the wood, will do more to quicken his interest than the whole realm of ornithology stuffed and displayed in glass cases. The Museum can be a valuable aid, but *after* observation in the open, not before. The naturalist goes to the Museum to verify some detail of colouring or form.

Birds

(a) Make lists of local birds under three headings.

1) Residents
2) Summer visitors
3) Winter visitors

(b) Note from personal observation dates of arrivals and departures of migrants (the explorers of the bird world).

(c) Search for nests to find out when eggs are laid, period of hatching, and date of first flight. After chicks have flown, note materials of nest. WATCHING, NOT TOUCHING!

(d) Observe end note down habits of birds; feeding, Sight, song, etc.

(e) Photograph birds under natural conditions.

(f) Make nesting-boxes.

(g) In winter feed birds and supply water.

Beasts

(a) Hunt for tracks, and make plaster casts.

(b) Try to find out where animals live.

(c) Photograph animals under natural conditions.

Trees

(a) Learn to recognize them at all seasons.

(b) Make carbon impressions of leaves.

(c) Make a local map showing where different species are to be found.

(d) Discover by experiment values as fuel.

(e) Find out local use of timber and underwood.

(f) Get information on what planting is being done locally: learn something about afforestation.

(g) Make maps showing local hedges and of what they are composed: get a hedger to teach you something about how to keep a hedge in condition; help to mend them.

Flowers

(a) Make lists of flowers seen with dates of first flowering.

(b) Make a map showing where each species is seen at its best.

(c) Make sketches – made out of doors – of flowers with notes on colours: better than pressing.

(d) Find out what wild flowers and ferns are protected.

It would take too long to detail all the branches of Nature Lore and make suggestions for the explorer who is keen on this aspect of the country-side, but the above will indicate the type of activity that should be encouraged, namely, observation, not collection. All information of this kind should be pooled: some of it could be recorded on a large seals map of the locality kept on the Troop Room wall: this would be an additional incentive to each Scout to add his bit to the common stock.

The various Proficiency Badges – Bird Warden, Naturalist, Stalker, and Prospector, will attract some boys; they call for a good deal of stickability, so should be left until a real enthusiasm has been roused, otherwise they may put the Scout right off instead of encouraging him. Much tact will be needed by the Scoutmaster in this matter of Nature Exploration; if he goes too fast, he will do more harm than good; if he goes cannily, he may achieve much. It is easy to rouse the first keenness; it is far more difficult to maintain the interest until something definite has been achieved. An

occasional enquiry does much; the boy likes to know that you are also interested, and he is glad to be able to give an answer that shows definite progress.

An appeal to the Troop specialist on any matter that may arise connected with wild life will also help, and will encourage others to become specialists in their own lines. Occasionally, it is a good idea to have a yarn evening, when Scouts can tell of their discoveries, show then- photographs, sketches, and other records. Encourage Scouts to go off exploring in pairs; an old hand with a young one, so that some of the enthusiasm can be passed on and fostered.

Quite apart from the value of this Nature exploration as such, other good results may be expected. There is nothing like a genuine love of Nature for producing an attitude of reverence, since the mind is brought into contact with something greater than any of man's creations. We are apt to forget that, simply because he does not say much, the boy is sensitive to all the influences of Nature, perhaps more keenly than those who have long passed boyhood. A chance word will often show that he has felt deeply; but if we enquire too closely into his mind and try to get him to express his feelings, he will hide his thoughts and become dumb. Our business is to get him-into contact with Nature, and let her do the rest. Rarely has a boy's deepest feeling been expressed more truly than by Wordsworth. His boyhood was spent amongst the mountains and lakes of Cumberland, and in his sports and explorings he was a typical boy. Such an incident as the following brings that out dearly, and expresses what many a boy has felt but could not put into words:

> There was a Boy: ye knew him well, ye cliffs
> And islands of Winander! – many a time
> At evening, when the earliest stars began
> To move along the edges of the tills,
> Rising or setting, would he stand alone
> Beneath the trees or by the glimmering lake,
> Ane there, with fingers interwoven, both hands
> Pressed closely palm to palm, and to his mouth
> Uplifted, he, as through an instrument,
> Blew mimic hootings to the silent owls,
> That they might answer him; and they would shout
> Across the watery vale, and shout again,
> Responsive to his call, with quivering peals,
> And long halloos and screams, and echoes loud,
> Redoubled and redoubled, concourse wild
> Of jocund din; and, when a lengthened pause
> Of silence came and baffled his best skill,
> Then sometimes, in that silence while he hung
> Listening, a gentle shock of mild surprise
> Has carried far into his heart the voice
> With all its solemn imagery, its rocks,
> Its woods, and that uncertain heaven, received
> Into the bosom of the steady lake.
>
> (PRELUDE V.).

High-flown? Read that passage to any boy who has been out in the open and you will find that he does not think so; it's just what he too has experienced. It is true that we are rather shy of poetry, and regard it as a kind of secret vice, but it happens that this matter of contact with Nature has found its best expression through the poets. That is why in a thoroughly practical book, a poet's words have been used to illustrate what one boy felt when he was practising his Patrol Call!

BOOKS

For topographical description:

Laborde's *Popular Map Reading.* Chapter II. (Cambridge.) 4s.

For the ruc-sac:

Skene, *Wild Flowers.* (Nelson.) 1s, 6d.

Crabtree, *Woodland Trees.* (Epworth Press.) 1s. 6d.
Westell, *British Nesting Birds.* (Dent.) 2s.
Batten, *British Wild Animals.* (Pearson.) 2s.

SOME USEFUL ADDRESSES

Scooters will find it useful to acquaint themselves with the work and publications of the following Societies:

NATIONAL TRUST. 7 Buckingham Palace Gardens. S.W.1. **See** *Must England's Beauty Perish?* by G. M. Trevelyan. 1s.

ROYAL SOCIETY FOR THE PROTECTION OF BIRDS. 82 Victoria St., S.W.1. See *How to Study Bird Life.* 1d.

SCOTTISH SOCIETY FOR THE PROTECTION OF WILD BIRDS. 207 George St., Glasgow. See *Behold, the Fowls of the Air!* 2d.

COUNCIL FOR THE PRESERVATION OF RURAL ENGLAND. 17 Great Marlborough St., W.1.

SCAPA SOCIETY, for the Prevention of Disfigurement in Town and Country. 7 Buckingham Palace Gardens, S.W.1.

THE SELBORNE SOCIETY. The Hermitage, Hanwell, London., W.7. For general information on wild-flower preservation.

CHAPTER VIII

HIGHWAYS AND WATERWAYS

Here, when they heard the horse-bells ring,
The ancient Britons dressed and rode
To watch the dark Phoenicians bring
Their goods along the Western Road.
RUDYARD KIPLING.

THE explorer blazes the trail; others follow in his footsteps, so the track is made and later will come the road. That, in brief, is the story of civilization, and it is written on every road in the land. The Scout who realizes something of the romance of the King's Highway, will have a fascinating subject to pursue. Much studying of maps will be needed, not only present-day productions, but old ones that can be seen in libraries and museums.

It is not sufficient to trace a road on a map: it remains lifeless: the Scout who wants to know a road must hike along it, and so get that familiarity that only personal contact can achieve.

A good approach to the subject is through the Map of Roman Britain published by the Ordnance Survey (1s. 8d. for Scouts). The Scout should see if there is a stretch of Roman road near enough for him to explore; he will compare this map carefully with a modern one, and will find it interesting to puzzle out doubtful parts of the roads. On that map he will also find several of the older trackways marked, the Icknield Way, the Harrow Way, the White Way, and the Lincolnshire High Street. There is a great deal yet to be found out about these old *Trackways.* Four types can be recognized.

1. *Ridgeways.* These are the earliest; they kept along the crests of the hills, since the dense forests in the valleys made it difficult to move rapidly and safely. They avoided river crossings and consequently wide detours were often made.
2. *Harrow Ways.* These were more direct than the ridgeways; they sometimes came lower down the hills, and did not avoid crossing streams.

3. *Hill-side Roads.* These were often parallel to the ridgeways, and as the forests were cleared they tended to get lower down the valleys.
4. *Hollow Ways.* These were not of great length, but led from the hills down into the valleys.

Trackways survive best in the downlands. They are now, in places where they have not been ploughed up, broad grass tracks covered with a very fine turf that is often darker in colour than the surrounding land. All kinds of theories have been suggested to explain the presence of these trackways, and later on the keen Scout may find it a delightful outdoor hobby to test these various ideas for himself, and possibly make discoveries of his own. Some of the books dealing with this subject are mentioned at the end of this chapter for the benefit of any Scouts or Rover Scouts who get keen on this fascinating subject.

The Romans made a network of roads throughout the country, partly for moving troops rapidly. "The four Roman ways" are Watling Street, the Fosse Way, the Ermin Street, the Icknield Street. These main highways – so called because they were raised above the level of the surrounding ground – were connected by many cross-roads. So well constructed were these roads, that they outlasted the neglect of centuries. Occasionally, these roads followed old tracks, but more usually they ran straight from point to point.

During the Middle Ages, the burden of upkeep was placed on the manors, and this duty was more often neglected than carried out. A load of stones would be thrown into a hole and it would be left to the traffic to hammer them down. If we can imagine the worst cart-track we have ever seen, add another foot or two of mud, and deepen the ruts considerably, we shall get a faint idea of what was called a road in the Middle Ages. When one part became impassable, another track was made alongside; hence the "rolling English road" – "a reeling road, a rolling road, that rambles round the shire."

One incident will give a good idea of the general conditions at the beginning of the sixteenth century. An Aylesbury miller wanted clay for making bricks, so he dug a pit, 10 ft. by 8, in the roadway outside his mill. This filled with water, and during one night a traveller fell into it and was drowned. The miller was charged with manslaughter, but when he explained that he couldn't get clay elsewhere he was acquitted!

Packhorses were used for carrying goods, unless there was easy water transport available. Wheeled traffic was not known to any extent until the fifteenth century, and carriages did not come into use until the middle of the next century. It was then realized what an appalling state the roads had fallen into, and efforts were made to put things right – partly, curiously enough, by trying to limit the wheeled traffic.

In the reign of Mary Tudor the first serious attempt at dealing with the problem was made. A Law was passed making the Parishes responsible for upkeep, and appointing Surveyors of the Highways (also called Waywardens and Boonmasters) to see that roads were kept in reasonable repair. Every man had also to put so many days' labour annually on the roads, but even this enactment had very little result. Complaints of the condition of the main roads were constantly being made, but little was done to improve them. Under the Commonwealth things were better, but it was still possible for Charles II in 1661, when he was setting out to meet his bride at Portsmouth, to ask the Commons to see that "the ways may be mended, so that the Queen may enter with decency, and not find Whitehall surrounded with water." In those times when the King went to open Parliament it was necessary to throw down brushwood so that his coach would not get stuck in the mud.

In 1663 the first Turnpike Act was passed, and until well into the nineteenth century the system of Turnpikes and Tollbars was maintained. This was an attempt to solve the difficulty of finding money for road repairs; the old labour method had fallen into disuse, and for a time the liability to work on the roads was commuted for a money payment to the local Justices; but this brought in too little. The Turnpike Acts allowed the Justices to erect gates and levy tolls at certain strategic points; the money so collected was to be used for repairs. The system spread rapidly until along

the main roads there were toll-gates at every few miles; this increased the cost of travelling and raised much resentment.

The Turnpike period was the golden age of the Highwayman, of the stage-coach, and the Inn. The names of Claude Duval, Dick Turpin, and Jerry Abershaw, sound romantic to our ears, but they spread terror amongst our ancestors, who set out on their journeys as if they were going to battle.

"Rogues were they all; but the white dust assoils 'em!
Paradise without a spice of devilry would cloy.
Heavy is my pack till I meet with Jerry Abershaw,
The gay Golden Farmer and the Hereford Boy."

Dick Turpin "operated" the district lying between Waltham and Loughton, and must have known Gilwell Park: indeed there is a legend that he used the old hunting lodge as one of his lairs. To make the London to Epping road safer, the forest was felled for some distance on either side of the road.

Coaching days also have their glamour. No reader of Dickens can escape it: perhaps the best idea of the travelling in those days is given hi the second chapter of *A Tale of Two Cities.*

In 1752 a stage-coach took four days to get to Exeter from London: as roads improved and the coaches themselves were better constructed, speed increased, so that in 1824 it was possible to do the same journey in twenty-four hours. Many tales are told of rival coaches trying – how modem it sounds – to cut each other out. In 1831 the "Subscription" and the "Defiance" coaches were the great rivals on the Exeter road. On one occasion they raced neck for neck and reached London in thirteen hours, a dead-heat. One coach had run over a flock of sheep, and several horses had died as a result of the strain.

Coaching meant an elaborate system of inns, not only for the travellers, but also for changing and baiting horses. Many of the famous old inns were most flourishing at that time: the motor age has brought back their prosperity.

The late eighteenth century saw a vast improvement in the condition of the roads, otherwise coach traffic would have been impossible. Two names are chiefly connected with this improvement: Thomas Telford (1757-1834) and John London Macadam (1756-1836). Telford made his roads with a camber and paid attention to drainage; Macadam invented the method called after him of making the surface with small angular stones, but he gave no care to foundations. Both were Scotchmen and did their best work in England, Telford in making the Holyhead road and the Menai Bridge, Macadam in remaking the Bristol road. Scotland owes its roads appropriately to an Englishman, General Wade, who after the '15 Rising made great military roads throughout the land. On an obelisk between Inverness and Inverary is the inscription,

Had you seen these roads before they were made,
You would lift up your hands and bless General Wade.

There is no space here to tell the full story of these three men, but their lives and achievements would supply good material for yarns to the Scouts.

The coming of the railway meant the end of the coaching period, and the gradual loss of tolls. The last stage-coach from London to Bristol ran in 1843 (the Stockton-Darlington Railway was opened in 1825). The Highway Act of 1835 dealt with the whole problem of the roads, and made the local authorities responsible for upkeep. This meant the gradual break-up of the Turnpike system. All those near London had been abolished by 1870. The last public toll-gate was removed in 1895 in Anglesey, though there are still some in existence on private roads.

On the historical aspect of roads much interesting work can be done.

1. Tracing trackways and Roman roads. A hike along the "Pilgrim's Way" or "The Icknield Way" would be an enjoyable experience. (See "Books" at end of chapter.)
2. Finding out the reasons for the windings of a road: many causes may come into play; avoiding natural obstacles; abandoning an impassable stretch; diverting a road for estate purposes, as in case of Dawes Hill by William Chinnery of Gilwell (see *Gilwell Book*); taking the line of least resistance, and so on.
3. Marking Turnpike roads and toll-gates on local map.
4. Finding out the old coach roads, and the routes taken, with times of journeys.
5. Looking for old coaching inns; making sketches of them.
6. Collecting local legends of highwaymen.

During this century roads have undergone another revolution; the motor has brought the roads into general use again for transport; now it is the railway that feels the competition just as the Turnpike Trusts did when trains became a means of quick travel. We are entering on a period of road construction that can rival the work of the Romans, and of Telford and Macadam.

This modern side of the road question will interest many Scouts; certainly all should know the local roads and where they go; the state in which they are, and any schemes for improvement. To-day it is urgent that all should be familiar with the traffic signals, and the local arrangements for controlling traffic.

The system of classifying roads as shown on the official maps and sign-posts should also be understood.

A beginning can be made with the nine great roads:

A.1. London – Edinburgh.
A.2. London – Dover.
A.3. London – Portsmouth.
A.4. London – Bath.
A.5. London – Holyhead.
A.6. London – Carlisle.
A.7. Edinburgh – Carlisle.
A.8. Edinburgh – Glasgow – Gourock.
A.9. Edinburgh – Perth – Inverness.

Map-tours can be planned; Patrols should be set problems of finding the best routes from one place to another, first, by car; second, on foot; third, by bicycle. Every Scout should also know how to use a Railway Time-table and a "Bradshaw." This can be best done by again setting definite problems to work out with the aid of time-tables. Later on the same should be done for Continental Travel, using a good Railway Map for working out the best routes. Scouts will also get considerable fun out of planning a World Tour. In the course of this they will have to consult the time-tables and shipping lists published by the various companies. Incidentally, they will at the same time be acquiring much useful information.

FOOTPATHS

The trackways have already been mentioned as being older than any of the roads; footpaths may be the remains of these trackways, of pack trails, or of ancient rights of way. Any Ordnance Map will show where such paths exist, but occasionally they have been closed up by illegal obstruction following disuse, so that the path becomes overgrown. One of the best ways of retaining a footpath is to use it so that the public right is constantly maintained. Here Scouts can do good service by knowing all the footpaths in their districts and making a point of perambulating them from time to time. Old maps will sometimes show where paths have been formerly; it is not an easy matter to re-establish the right to a path, but it has been done; where paths are in danger of being lost the facts should be reported to the Secretary of the Commons and Footpaths Preservation Society (71 Eccleston Square, S.W.1).

Footpaths are frequently lost by illegal obstruction, and also by disuse so that they become overgrown, or otherwise impassable; stiles may be allowed to become defective.

One good turn Scouts can do the Public has already been mentioned – the keeping of paths open by walking them; they should also report any obstruction, or lack of attention, to the Parish Council. Rover Scouts might very well undertake another valuable piece of work, the making of a survey of reputed public footpaths in a district. For this purpose the 6-in. sheets of the Ordnance Map should be used. The following suggestions by Sir Lawrence Chubb, the Secretary of the Commons and Footpaths Preservation Society, will prove useful in such work:

"The Ordnance Maps should only be taken as a basis of a Footpath survey for, while they purport to show all visible tracks without discriminating between the public and private paths, it is often found that unquestioned public ways have not been marked by the Ordnance surveyors. This is especially the case in districts where Field-paths are regularly ploughed up in the course of husbandry, as they were probably invisible at the time of the survey. Paths marked on old Ordnance Maps are often omitted from revised issues, and whenever it is possible the old survey should be compared with the new.

It is also important to compare the Ordnance sheets with the Parish map, Tithe map, and Inclosure Award map, where these exist. In rural districts, these maps should now be under the control of the Parish Council, or of the Parish meeting where no Council exists.

Tithe maps do not often show Footpaths, but sometimes they will be found to do so. On the other hand the carefully prepared Parish maps which were frequently made, often show Footpaths, and the maps attached to Inclosure Awards will show any Rights of Way set out when the local Commons were enclosed. Old plans, such as those attached to the Particulars and Conditions of sale of property submitted to auction, also afford valuable information and should be inspected whenever an opportunity presents itself.

Having obtained all the available help afforded by the maps specified or by other local documents known to be in existence, a systematic survey should be made of every reputed path in the area under investigation, and a careful record made of all stiles and gates, foot-bridges, gaps, hurdles, posts, or other facilities for passage. It is desirable that this information should be marked upon the maps, and that a schedule should also be prepared giving any other facts about each path which cannot be written on the map. For instance, when a path has been repaired a note should be made of the circumstances and particulars given as to the person or local authority by whom the repairs were executed, all notices applying to the use of the path should be carefully copied, and where the path has been ploughed the fact should be stated.

The following is a list of the abbreviations and signs used in map-making by the Commons and Footpaths Preservation Society:

BRIDGE – ..... Cart	C.B.
..... Foot	F.B.
FINGER OR DIRECTION POST (Copy what is on it)..	D.
GAP – (In Fence or Hedge)	Gap.
GATE – Bridle	B.C.
Carriage (found crossing Carriage Drives)	C.G.
Field .	F.G.
Field (with Step Stile)	F.S.
Movable or Slip Panel	S.P.
Wicket or Latch	W.G.

HURDLES – (Note if apparently only temporarily .....erected)	H.
PATHS – Metalled or Made	M.
POSTS.....	P.
RAILS OR BARS – Movable (if fixed, state so) ..	R,
STILE – On wall, fence, or hedge (with step) ..	S.
On wall, fence, or hedge (without step) ..	S.^.
TURNSTILE –	T.S.

Fords or Stepping Stones and any unusual features not covered by the above signs should also be noted.
Brackets [ ] placed round any of the Signs denote that the object indicated is in a defective or damaged condition – e.g. *[C.B.] = Defective Cart Bridge.*

The letter 'O' should be placed after any of the foregoing signs, where obstruction exists. The nature of the obstruction and dates of inspection should also be noted.

All public Footpaths and Bridle roads should be numbered and also denoted by a red line (where possible) whether crossing Commons, following an occupation road or not, and full particulars as to their condition should be entered in the schedules, which should give a complete and numbered list of the paths to correspond with the numbers on the maps.

Paths about which there is any reasonable doubt should be marked by a dotted line.

Commons, Village Greens, Roadside Wastes, Recreation Grounds, and all other public Open Spaces should be coloured green.

Steps on a locked field-gate are considered as stiles, a special note being made of the fact in the schedule; it should be remembered, moreover, that it has been held that the public may have a right to pass over a field-gate which has been locked from time immemorial.

As a general rule a stile is good evidence of the existence of a public path, and so are bridle or wicket gates, foot-bridges, or other erections to facilitate the passage of the public.

It is further desirable to recognize that the public frequently possess a right of Footway or Bridle-way over estate or 'accommodation' roads, which are rigorously protected from general vehicular traffic. The words 'Private Road' therefore, do not necessarily imply that it is denied that the public have a right of Footway, though the words 'No Thoroughfare' would have that

When the map has been fully marked, an effort should be made to clear up all doubtful points, and landowners will often be found ready to assist in doing so. Where necessary, signed statements should be obtained from old inhabitants in regard to questioned ways, an effort being made to secure evidence from every point of view

When completed, such a Footpath map is of incalculable benefit, as it furnishes reliable information valuable alike to the landowners, local authorities, and general public. Every effort should therefore be made to prepare a Footpath map of each parish, and the Commons and Footpaths Preservation Society will be happy to give advice on any points not included in the above notes."

BRIDGES

In dealing with ridgeways, it was pointed out that they avoided crossing streams wherever possible. First crossings were probably by fords, and many of these are still in use: very often the bridge has been constructed near by, and the ford is used now for wagons. Our ancient bridges are

amongst the most picturesque features of the country-side. From earliest times their construction and maintenance were regarded as peculiarly pious acts, and special guilds were formed for keeping them in repair. The expenses were sometimes met by bridge-tolls. On some old bridges, as at Wakefield, chapels were erected, and on others, as at Monmouth, defensive towers.

Bridges were allowed to fall into decay in much the same way as the roads. The beautiful Clopton Bridge at Stratford-on-Avon, for instance, was broken at both ends by a flood in 1588, and traffic for some time was hindered.

Of all bridges, perhaps the most famous is London Bridge: for five centuries it had houses erected on it, and the traitors' heads over the gates were a familiar, gruesome sight. The houses were demolished in 1758, and it was probably then that the stone balustrading was erected, part of which is now at Gilwell Park: this was removed in 1831 when the present bridge was constructed.

As roads improved, so bridges were reconstructed, and new ones built. Telford, for instance, not only made good roads, but he was also a bridge-builder, as the suspension bridge over the Menai Straits testifies. Since that time many wonderful engineering feats have been accomplished in spanning great rivers. There is romance in the engineering triumphs of the modern age. It is a far cry from primitive man avoiding even streams to the modern engineer, who builds his bridges wherever man or train can travel. Kipling's story of "The Bridge Builders" in *The Day's Work* brings out some aspects of the romance of modern engineering.

Scouts should map the bridges in their districts and history. The Scouter will find that he can spin many a romantic yarn with a bridge as setting.

WATERWAYS

Waterways have always offered an easy means of transport, and in the Middle Ages they were so important for purposes of trade, that opposition was often made to the erection of bridges as being obstacles to navigation. Towns regarded their control of the waterways as an important part of their powers, and Royal Charters generally included provisions of this

Many of the old waterways are now silted up, or have been diverted. The River Lea, for instance, now runs through a chain of reservoirs, but at one time the Long Ships of the Danes sailed from the Thames up to Waltharn Abbey. It is surprising to find that many towns that we now regard as right inland were at one time called ports. Such were York and Doncaster, which both enjoyed rights of wrecks at sea.

During the eighteenth century inland navigation was improved by the construction of canals. The name of Telford again crops up! He was responsible for the Caledonian Canal. It is not always realized what a network of waterways we have in these islands. A useful map is Bradshaw's *Canals and Navigable Rivers* (Stanford, 2s. 6d.). With this in front of him a Scout could plan some delightful water tours through some of the most beautiful scenery of the country. Some Troops have had jolly times "barging" along canals, camping on the banks, and exploring in this way many of our lesser known waterways.

Rivers have been described as "liquid history." Some have almost taken part in history: such are the Nile and the Thames. But all have their own stories, and the Scouts will find some good exploring in following rivers and streams from source to mouth, finding out where they have changed their courses and why, and learning something of how they have affected, and still do affect, the development of the surrounding country.

BOOKS

The Story of the Roads, by C. H. Hartmann. (Routledge.) 10s. 6d. A good general history.

The Green Roads of England, by R. H. Cox. (Methuen.) 10s. 6d.

The Old Straight Track, by A. Watkins. (Methuen.) 18s. and *The Ley Hunter's Manual,* by A. Watkins. (Simpkin, Marshall.) 2s. These two books propound a theory of the old trackways that has not yet been generally accepted; but they provide good fun if not taken too seriously.

The Open-Air Guide. Ashton and Stocks. (Heywood, Manchester.) 3s. 6d.

Oceans and Rivers. Taylor. (Bonn's Sixpenny Library, No. 31.)

For special hikes: – The Pilgrim's Road. Elliston-Erwood; (Homeland Association. 37 Maiden Lane, W.C.2.) 4s. 6d.

The Icknield Way, Edward Thomas. (Constable.) 3s. 6d.

CHAPTER IX

MAN AND HIS WORK

"I saw within the wheelwright's shed
The big round cartwheels, blue and red;
A plough with blunted share;
And paint in trial patchwork square
Slapped up against the wall;
The lumber of the wheelwright's trade.
And tools on benches neatly laid,
The brace, the adze, the awl."

V. SACKVILLE-WEST.

A BOY is interested in doing things, and in watching men at work. He likes to see a machine in action, and to find out all about its construction. Here is a side of his nature that we can turn to good use in our exploring. Let him go about the country-side and find out all he can about the life and labour of the people.

Most grown-ups could parallel the following experience described by Mr. Stanley Baldwin. "I had many ambitions as a child; one was to be a blacksmith. What more exciting than the roar of the blast, and even now I can still feel the thrill which stirred my small heart when I was allowed to work the big bellows. I remember riding down the lane to get my pony shod, and the very spot where I could first hear the ringing of the hammers. How exciting, too, the smell of the smithy! The curious acrid smell of water thrown on the red-hot iron, the warm steam of the cart-horses, the burning hoof when the shoe was being fitted. And how I admired when the smith himself hit the shoe by accident against his palm and nothing happened but the sizzling noise of burnt horn and an exclamation of justified dissatisfaction at his own clumsy workmanship. How I longed to have a horny palm!"

If we can get our town boys out into the open country, and make them acquainted with how people live and work there, we shall be doing a good service to the community in these days when on all hands we hear of the decline of agriculture, and the unbroken drift from the country into the towns. There is nothing like firsthand knowledge of facts for producing sympathy and understanding, and too many of our townspeople are ignorant of the ordinary occupations of their fellows on the land and in the villages.

The first step in such an investigation is to get familiar with the various types of vegetation in the district chosen. A sketch map should be drawn to show – arable land, meadow, park land, woodland, pasture, nurseries, and allotments. Each of these kinds can be the subject of an investigation. For instance, the rotation of crops on a particular field might be ascertained. Such a rotation as this is typical; first year, potatoes; second year, barley or oats; third year, peas or beans; fourth year, wheat, and after that the land is left fallow, to rest, ploughed several times, or sown with mustard that is ploughed in as manure. Generally a crop of clover, trefoil, or the like, is sown the year preceding the wheat; this is because such crops are rich in nitrogen and so manure the soil making it good for wheat.

Pasture land leads to an enquiry into the extent of dairy farming in a district. A map should show where the chief markets are for the local farm and dairy produce. Villages are no longer, as in

the old days, self-contained, and it is interesting to discover how far a village community can meet its own needs, and what it requires from the outside world.

Another interesting job for some Scouts would be to work out a diary of a year's work on a farm; it might be possible to arrange with a local farmer for a few Scouts to visit his farm regularly and to help him in small ways so that they can get a good idea of the progression of events on a farm.

Small holdings, poultry farms, and nurseries come within such a survey. There are also the industries dependent on Agriculture to investigate, such as malting, brewing, milling, and making of agricultural machinery. Other industries may be the result of local conditions, such as brickmaking dependent on clay. The Scouts, but more particularly Rover Scouts, should be encouraged not merely to find out the bare facts, but to discover for themselves reasons for these facts, why a particular industry flourishes in a particular place, why dairy-farming is more prominent than other types in certain districts, why certain fields are only used for pasturage, and similar problems.

Apart from the industries directly connected with the farm, there may be local crafts carried on that will repay investigation. There are signs of a reviving interest in such rural occupations, and this is encouraging, for due to commercial competition with the increased use of steam and electrical machinery, but there is also a lack of young men to carry on the old traditions; they are lured to the towns by imagined delights and prefer to work under factory conditions rather than maintain the independence of the village craftsman with his interest in all he makes. His products are individual things and he can take pride in his work since he carries out all the processes from the raw material to the finished article.

Scouts might very well be interested in this side of village life; they will see men actually engaged in making articles of all kinds, using their skill and traditional methods. Scouting in the country itself can do a great deal to show the boys and young men of the villages the value of these traditional industries in developing that pride of workmanship and pride in independence that characterized their sturdy forbears.

There are still a large number of such crafts carried on in various villages. In one Oxfordshire village, for instance, hurdle-making has been carried on in the same family since the seventeenth century. A full list would occupy too much space, but a few may be mentioned in illustration: besom-making, trug-making, wrought-iron work made in the village smithy, rush and sedge industries, glove-making, spinning and weaving, basket-making, hurdles, pottery, thatching. Any one of these would fascinate an ordinary boy, and a Scout with his liking for making things for himself, would be doubly fascinated. If he could pick up the rudiments of one of these crafts for himself, so much the better. There is all the difference in learning, for instance, basket-making in a Troop Room as a handicraft and seeing the actual job being done by real men in a village workshop.

Our handicrafts are too often treated as if they were pretty-pretties; take the Scouts to watch a village potter "throwing" a pot on his wheel, or to see any of the underwoods industries, and they will realize that such crafts are of actual value in ordinary life. The greater variety of such occupations they can see for themselves, the greater chance there is of each Scout finding one that will appeal to him and that he would like to take up as a hobby; the village craftsman will generally be pleased to give him tips and perhaps actual instruction. A good workman is glad to talk about his craft with anyone who shows a real interest.

The life of a village would be a useful subject for exploration for a town Troop or Patrol. Each Scout could undertake whatever aspect interests him most, and the combined results would form an elementary survey that would be of great value as a piece of practical training. The subject might be divided up after the following fashion:

1. Field maps, showing crops, etc.
2. Water supply: springs, streams, etc.
3. Map of old houses with sketches and notes.
4. Roads and communications.

5. Farm maps.
6. Parish boundaries.
7. Markets: where village products go, and where supplies come from.
8. Occupations followed in the village.
9. Tools used and their local names with sketches.
10. For older Scouts, and especially Rover Scouts – the system of local government; the old manorial system; local rights and traditional customs.

Every district has some industry that predominates; the reasons for the presence of such industries are generally discoverable in local conditions; perhaps the raw materials are available, or transport may be particularly favourable, or, as in the case of the old cloth industries of Essex, immigrants may have come from countries where they were persecuted, and have brought their skill with them and so founded a new occupation.

Some districts offer specially interesting industries for the Scout to investigate. A fishing village, or a port, is full of romance, and those Scouts whose homes are near the sea may be counted fortunate. Even a small port has a traffic of some kind, and the finding out of where ships come from and what they carry will occupy much time. Outward-going ships seem more romantic, and their cargo and ports of call should be noted. The coaster is not to be despised even if it is like the one Masefield talks of;

> Dirty British coaster with a salt-caked smoke stack
> Butting through the Channel in the mad March days,
> With a cargo of Tyne coal,
> Road-rail, rig-lead,
> Firewood, iron-ware, and cheap tin trays.

Troops near the sea have unrivalled opportunities for collecting information about the old smuggling days – exploring caves and paths used, finding out where Preventive officers were stationed, recording any legend about local smuggling adventures.

Quarries and mines offer another line of search; what minerals are obtained? Where do they go? What are they used for? How are they quarried or mined? What machinery is used, and what tools? These and similar questions occur at once as matters for investigation.

FOLK LORE

Probably, however, few Scouts will find an absorbing interest in matters of industry. A more fascinating subject connected with the people is that of Folk Lore, and considerable enjoyment can be promised any Scout who sets out to collect the legends and folk tales of the country-side. It is to such personal enquiries amongst ordinary folk that we owe our collections of Ballads and Folk Songs, and our knowledge of Folk and Morris-dancing. A passage from Lockhart's *Life of Scott* shows this type of exploration at its best.

"During seven successive years he made a raid, as he called it, into Liddesdale, in company with Mr. Shortreed; exploring every rivulet to its source, and every ruined *peel* from foundation to battlement. The travellers passed from the shepherd's hut to the minister's manse, and again from the cheerful hospitality of the manse to the rough and jolly welcome of the homestead; gathering, wherever they went, songs and tunes, and occasionally more tangible relics of antiquity. 'He was makin' himsell a' the time,' said Mr. Shortreed, 'but he didna' ken maybe what he was about till years had passed: at first he thought o' little, I dare say, but the queerness and the fun.'" In similar fashion the late Cecil Sharp talked with old country people, got them to sing their traditional songs to him and dance the old dances, and in this way rescued much from oblivion.

We cannot all do as much as those two men, but there is plenty of local tradition, legend, and song still uncollected, which will be lost for all time unless someone records them. Even in our

towns traces of old beliefs are found. For instance, in the East End of London a doctor has estimated that 40 per cent of the school children wear some kind of amulet under their clothes as protection against cold and infection. A belief in witchcraft still lingers, notably in East Anglia and the West of England. In 1926 in the Glastonbury Police Court, an application was actually made for a summons against a man who was said to have bewitched the applicant.

Mascots are really a survival of old folk beliefs; during election times lucky mascots are showered on candidates, and how many motor-cars are without their mascots? And what Cup-Tie Team would dare to set out without theirs?

Ghosts are still seen, and many echo the old Norfolk saying,

"From all ghoulies and ghosteses.
From all long-leggedy beastesses,
From all things that go wump in the night,
Good Lord, deliver us!"

One modern instance of ghost-seeing must suffice. At Christmas, 1926, a night watchman at East Barnet reported that he had seen a clanging apparition of a skeleton in a long cloak. This was identified with the ghost of Geoffrey de Mandeville, first Earl of Essex, who was believed to haunt Camlet Moat, a mile away, where he had been drowned. On this occasion he seems to have wandered off his beat! In consequence of this incident the Urban Council actually asked the surveyor if he thought extra wages should be paid to the watchman, "for work of exceptionally disagreeable character."

These old beliefs die hard, and as long as we refuse to walk under ladders, and regard innocent black cats with aversion, we cannot crow over our ancestors. Indeed it is amazing how strong a hold some of these have in the modern world. In 1910, for instance, "the question of a right of way over a footpath was discussed in the Godalming Council. One member enquired whether anyone knew of a corpse being carried over it. He added that the moment a corpse was carried over a stile the path became an open way; owners therefore took steps to prevent such an occurrence, and in one case objection by the owner of a path leading to a burial-ground caused a corpse to be taken five miles round a mountain from an outlying farm."

Local proverbial sayings are worth collecting. Many of these relate to the weather; a little steady observation shows how much truth can be placed in them. Scouts might test such sayings as these:

"If you hear the sheep at night, rain is coming."
"When cows lie down all facing the same way, sure to rain."
"When sparrows chirrup, sure to rain."
"If rooks build high in a tree, it is a sign of a hard winter."

The collection of these legends, beliefs, and sayings will give much amusement to any Scout who is interested. He should, however, get them at first-hand; this will mean talking to shepherds on the downs, to old villagers, and to country folk of all kinds. But he must do it in Sir Walter Scott's way, for "the queerness and the fun."

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CHAPTER X

THINGS OF THE PAST

"No man can tell flow old my stock.
My sires were here before the grain;
They reared that temple of gray rock
Which in a hollow of the hills
Seemeth our constancy to mock,
So little hurt crude usage skills
To it, so much to mortal men.
The blessed dew; they died and then
They served their dead with barrow and mound.
With wattled burghs on dun and pen
They made this Albion holy ground.
Naming the waters . . ."

MAURICE HEWLETT. *The Song of the Plow.*

AN Ordnance Map gives information not only about the surface of the country as it is to-day, but also about the sites of historic remains. These are indicated by the use of special lettering. For instance, the specimen sheet of the half-inch map of the Torquay district given in *A Description of Small Scale Maps,* has marked on it as antiquities, "Camp," "Cross," "Castle," "Well," and "Mansion." Other sheets show, "Moat," "Tumulus," and "Stone Circle." A Scout reading the Ordnance Map will naturally wonder what these things are, and he should go off exploring such places as are marked in his own district to see what they are, and make rough plans and sketches of them.

This opening interest in what is ponderously called "Archaeology," may be the foundation of a fascinating hobby of considerable intellectual interest that will lead to many days in the open air. Not least of the results will be a quickened realization of the history of the country in which he lives, and a development of that sense of tradition that links us with out forbears.

It is not suggested that Scouts should be treated as if they were budding archaeologists, and taken to some place of historic interest and there lectured. Nothing is more calculated to kill any interest that may have been dawning in the boys' minds. When expeditions are made, any such places within range should be included in passing, and the Scouts allowed to explore on their own. No boy will need pressing to wander about an old manor house or the ruins of a castle in the hope of finding dungeons and secret passages. Questions are sure to be asked as to what is this, and what is that. Here is the Scouter's opportunity. Curiosity has been roused in a natural way, and he should satisfy it as briefly as he can. Incidentally, if he doesn't know himself what anything is, he should say so, and tell the boys that he will find out and let them know. One or two of the Scouts will have had their interest quickened more than the others; for them the way of exploration lies clear; the map will tell them what other places are worth visiting in the district; they should be encouraged to go off and investigate for themselves.

The fatal thing too often is to get the local antiquarian to take a party of boys on such an expedition, unless – and this is the important point – he understands how to enthuse boys, and realizes that without great care he may, by tedious discourse, defeat his own purpose. It is far better to let such visits be part of a vigorous afternoon's Scouting; use the place in a game, or make it the rallying-point after a game is over.

The safest plan is for the Scouter to go over the place with an antiquary first, and so get familiar with the important points; he will then be in a better position to satisfy the curiosity of the Scouts.

The scope of this aspect of exploring is so great that it is impossible to do more here than indicate the main topics.

PREHISTORIC

Some knowledge of the main stages of civilization will be required; the chief divisions are as follows:

I. Stone Age.
   1) Eolithic.
   2) Paleolithic or old Stone Age.
   3) Neolithic or new Stone Age.
II. Bronze Age.
III. Iron Age.

The chief remains of these periods are, Flint implements, Bronze and Early Iron implements, trackways (see Chapter VIII), dwellings, burial places, forts or camps, pottery.

Flint implements are constantly coming to light on fields or heaths on the slopes of the river valleys; an examination of a ploughed field in such districts will often reveal flints in various states of artificial flaking. Scouts may find pleasure in making flint arrow-heads of their own; it is not a very difficult job. If two lumps of flint are banged together, probably one of the flakes so made will be roughly arrow-shaped; this can then be chipped into more regular form by putting pressure on the edges with a pencil-shaped piece of bone or even with another suitably shaped piece of flint; some of the old instruments, called "fabricators," have been discovered. Some kind of palm must be used in flint-arrow making, otherwise the pressure will be painful. A Scout who finds any flint implements in good state, should take them along to a museum to compare them with the best specimens, and to learn more about them, what types there are, their various uses, and the periods to which they belong.

Bronze and *iron* implements are found more by accident than anything else, in quarrying, in making deep trenches, and so on; the chances of a Scout finding any are remote as compared with flints.

Burial places of Early Man are fairly common, and are marked on Ordnance Maps as *Tumuli;* they are generally referred to as *barrows*. Long barrows belong to Neolithic times; round barrows to the Bronze Age; the latter form conspicuous features of some districts, especially of the down country. Many of these burial places have been opened; they contain in some cases skeletons, with other remains such as javelin-heads, or cinerary urns with occasionally bronze implements or ornaments. These sepulchral barrows are almost always found on or near an old road. There are other barrows which were not used for burial purposes but apparently as sighting-points; they marked the trail and must have been prominent objects, much higher than the present remains which have been worn down in the course of time.

Megaliths, or stone monuments, also indicate the former presence of prehistoric man; the most famous of these is Stonehenge, though there are many other Stone Circles in various parts of the country. *Menhirs* are tall single stones chiefly found in Scotland and Ireland. A *Dolmen* consists of two or more stones supporting a large flat one. The best known is Kit's Coty House in Kent.

In addition to these remains there are innumerable *earthworks* to be visited; on the Ordnance Maps these are marked "Camp." Some of these are hill-top forts, defended with banks and ditches. There are over 1000 pre-Roman camps in England alone. Notable examples are the camps at Loughton, and at Ambresbury Banks, both near Gilwell Park. These are situated along the ridge now marked by the Epping-London road.

Considerable light has been thrown on these earthworks recently by the use of the aeroplane for photographic purposes. The value of these photographs is that they give a distant view and bring out the general configuration of earthworks and forts in a way which it is impossible to get on the ground. They also reveal lines of ancient ways and land divisions that are invisible to the eye as a man walks about. The markings on the photographs have, of course, to be examined on the ground itself afterwards to ascertain what they represent. One archaeologist says, "I wasted a whole day recently going to inspect some suspicious circular markings visible on an air-photograph near

Winchester. They might have been a group of barrows; actually they were due to the circular browsing of tethered goats! Fungus rings also mislead the unwary."

There are a few remains of the *dwellings* of prehistoric man; caves and underground dwellings are to be found in Ireland, Scotland, and Cornwall. Oval pit dwellings exist in the Isle of Wight, and groups of hut circles are found in many parts of the country. Beehive huts and lake dwellings have also been discovered.

From these brief notes it will be realized that there is much for the Scout interested in the life of prehistoric man to investigate; such work will involve much tramping about over the downs and uplands, and there is always the further inducement of making small finds for himself.

ROMAN BRITAIN

There are considerable remains of Roman Britain extant. It is as well to remember that the Roman occupation of this country for nearly four centuries was not a military domination by a foreign race. The Britons were absorbed into the Empire and became Romans in speech, habits, and sentiment. Thus the "British-Roman Son" in Kipling's *Puck of Pook's Hill* is sound history,

"My father's father saw it not.
And I, belike, shall never come.
To look on that so-holy spot –
The very Rome –".

The leading Britons were Romans in the same sense as Paul, the Jew, meant when he said, "I am a Roman born."

A glance at the map of Roman Britain referred to in Chapter VIII, will give some idea of the large number of villas, towns, potteries, camps, and stations that testify to the work of the Romans. Nearly every Troop in England and Wales and the Lowlands of Scotland, has something within reach of it that shows Roman work.

Roads have already been dealt with in a previous chapter; of all these remains, however, the finest is probably Hadrian's Wall. A trek or hike along that wall would be a fine expedition for Scouts or Rover Scouts. Another interesting journey would be along the Saxon Shore to visit in turn the Roman fortresses and the later castles. It would take up too much space to detail all the possibilities that occur in connection with the remains of Roman Britain. The following list taken from Gordon Home's *Roman Britain* will give an idea of how widely spread these remains are.

1. MILITARY

Hadrian's Wall in Northumberland. Museums at Chollerford and Newcastle-on-Tyne.
York. Fortifications of legionary camp; important museum.

Burgh Castle, near Lowestoft.	Saxon Shore fortresses
Receiver, near Herne Bay.	
Richborough, near Sandwich.	
Lympne, near Hythe.	
Pevensey, near Eastbourne.	
Portchester, near Portsmouth.	

Caerleon, near Newport, Mon. Walls of legionary base camp, amphitheatre, etc.; museum.
Cardiff. Fort walls and museum.
Ardoch, near Stirling. Entrenched fort.

2. CIVIL

London. An angle bastion of walls in G.P.O. yard, Guildhall, London and British Museums.
St. Albans. Remains of walls of Verulamiuin; museum.
Cirencester. Amphitheatre and two museums.

Bignor, near Pulborough. Pavements
Bath. Roman baths and museum.
Lincoln. Gateway and walls; museum.
Colchester. Gateway and walls; notable museum.
Wroxeter. Forum, baths, etc.
Aldborough, Yorkshire. Walls, pavements, and museum.
Folkstone. Villa.
Rochester. Walls and museum.
Dorchester, Dorset. Amphitheatre.
Caerwent. Amphitheatre.

LATER PERIODS

Naturally the later we get into historic times, the greater the wealth of material to consider. It will be clearer if instead of dealing with periods we divide the matter under classes.

a) Castles
b) Churches
c) Other buildings

(a) CASTLES

A castle is the most romantic of ruins; it calls up pictures from the storied past of knights and bowmen, of sallies and sorties, of sieges and escalades. The very names of its parts are full of colour, drawbridge and portcullis, moat and battlements, keep and bartizan. It will need no persuasion to get Scouts to explore any such ruin they may be able to visit. They have all read such stories of the Middle Ages as Conan Doyle's *White Company,* so that it will take very little to create the right atmosphere.

The Normans were the great castle builders, and William the Conqueror's first act on landing was to build a castle at Hastings. The Saxons were an agricultural people, and preferred to live in little settlements in forest clearings; an earth rampart or a stockade was the extent of their fortifications. The first castles built by the Normans consisted of a mound, on which stood the stockade, or keep, and in front of it an enclosed bailey, or base-court, protected by an outer moat and a bank for a palisade. Wood was used for the construction of these hurriedly built castles; of these there are naturally no remains, but when the country was more settled, stone was used, and so we get the innumerable ruins that date back in some cases 800 years.

The palisade was replaced by a thick stone wall with battlements and small towers; inside this was built the keep, the main fortress to which they could retreat if the walls were captured; the first type of keep was square with walls 12 to 20 ft. thick; in the twelfth century cylindrical keeps were built. Round the outer walls and keep were moats and these could only be crossed by drawbridges.

There are many examples of Norman castles still in good preservation; such as the Tower of London, Rochester, Dover, Richmond (Yorks), and Hedingham in Essex.

During the thirteenth century there was a further development; defence was not so important, and keeps were uncomfortable places to live in; so buildings were added round the Norman keep, a hall would be built with additional and more convenient living-rooms. To this type of early residential castle belong Stokesay in Shropshire, and the Welsh castles of Edward I as at Caerphilly, Beaumaris, Conway, and Pembroke.

The increase in the use of cannon, and the skill of sappers, gradually rendered the castle of little defensive use, and the old buildings were adapted more and more to ordinary life. Kenilworth is a good example of the late type, others are Raby Castle (Durham), Broughton Castle (Oxfordshire), and Ludlow Castle in Shropshire. These were largely altered during the fifteenth century. In the following century, the gloomy old castles gave way to more cheerful fortified buildings, planned

somewhat on the same principles. Such are Warwick Castle – one of the best preserved – Warkworth Castle, Hurstmonceaux in Sussex, and Lumley in Durham.

During the Tudor period very few castles were built, as they had really become obsolete; but Tatershall Castle in Lincolnshire belongs to this period, and although it has a moat and keep, it is really more a large manor house than a castle.

Scouts can get much fun out of a castle; some may be used for games and other purposes; all can be used as settings for yarns round the camp-fire, and if the Scouter has any imagination he can make the past live again in the old walls.

(b) CHURCHES

Churches make a less dramatic appeal than castles, but they do enshrine, as no other buildings can, the history of the common folk like ourselves. There is nothing in the world quite to compare with our Parish Churches whether looked at from the point of view of antiquity or from that of influence on men's lives. It is, of course, easy to get too sentimental about them, and any tendency of that kind would find little response in a Scout; he will feel something of the age-old associations of the building, he may sense some of the deeper appeal it makes, but he will say nothing about these feelings, and the Scouter will not do so either if he be wise; he will, however, see that opportunities occur for his Scouts to come into direct contact with such experiences.

It will be helpful if the Scouter has even an elementary knowledge of the development of architectural styles and of the plan of the Parish Church. This is not the place to go into any detail about such matters, but a rough indication of the scope of the subject may be of use. The following summary of periods and chief features will serve as a chart to guide the beginner.

I. *Pre-Roman.* Few traces found; some have been referred to in the last chapter; i.e. dolmens, stone circles, etc.

II**.** *Roman.* (55 B.C.-A.D. 420.) Remains of Roman work have already been mentioned in this chapter. Materials from destroyed buildings will often be found in the walls of later ones; especially note the use of the typical thin red tiles or bricks.

III. *Saxon.* (449-1066.) Some remains will be found in most English counties. Chief features: walls built of rag or rubble; with "long and short" stones at corners; triangular-headed windows; small round-headed arches sometimes used.

IV. *Norman.* (1066-1189.) Extensive remains. Strength the typical note. Round arches; massive pillars; zigzag mouldings used.

V. *Early English.* (1189-1307.) Style also called Lancet. Tall and narrow lancet openings; groups of slender shafts to form pillars; foliage used for ornament; high-pitched roofs. This is the first of the Gothic styles.

VI. *Decorated.* (1307-1377.) Sometimes called Geometrical. Richer in ornament than Early English; geometrical and intricate tracery in windows; use of many ribs in vaulting.

VII. *Perpendicular.* (1377-1485.) The name indicates the general appearance, which is derived from the upright lines of window tracery and of panelling; enormous windows; fan vaulting.

VIII. *Tudor.* (1485-1558.) Not unlike Perpendicular, but use of style spread to ordinary building; typical square-headed doorway; mullioned windows; lavish use of heraldry; lofty pinnacles on gables.

IX. *Elizabethan Renaissance.* (1558-1603.) Mostly secular architecture. The period of the great mansions with terraces, formal gardens, etc. Oriel and bay windows; use of towers, gables, chimney stacks, etc.

X. *Jacobean Renaissance.* (1603-1625.) Irregularity of Elizabethan fancy gives way to more classic ideas; finds expression more in church monuments and furniture.

XI. *Anglo-Classic*. (1625-1702.) Dominated by work of Inigo Jones (1573-1652) and Sir Christopher Wren (1632-1723). Gothic style no longer used but based on classic styles; e.g. compare St. Paul's with Westminster Abbey.

XII. *Georgian.* (1702-1830.) A development of the former period. Increase in the use of exterior symmetry; beautiful in proportion.

(c) OTHER BUILDINGS

The list of periods in the last section was purposely carried beyond the Parish Church stage, to avoid break in continuity. Obviously the styles sketched in the above brief notes also refer to domestic and other buildings, and of these there is no lack. A few types may be mentioned.

Manor Houses. Gradually developed from a fortified and moated house into the more homely dwellings of Tudor and later times. Some of the great houses of England are well worth visiting, e.g. Penshurst Place (Kent), Haddon Hall (Derbyshire), Compton Wynyates (Warwickshire).

Smaller Houses. Often like small manor houses, with general living-room and kitchen at one end, and private rooms at other; there are many examples, such as Butcher's Row (Shrewsbury); Paycocks at Coggleshall, Essex. The character of building depended on local materials; in a stone district, houses were solidly built; in the clay lowlands of East Anglia, red brick was used; in timber areas half-timber houses are plentiful. Nowadays we forget all this and plant our red-brick bungalows in stone countries and wonder why they look out of place.

Colleges. Notably Oxford and Cambridge; each of these towns is an epitome of English architecture (see Lamborn's *Architecture in Oxford Stone.* Oxford, 5s.).

Schools. Probably not too attractive to Scouts, still some of the old ones are worth a visit, such as Eton and Winchester.

Inns. Many of these are very old; some are medieval, such as The George Inn, Glastonbury, and The Feathers Inn, Ludlow. Coaching inns have already been mentioned.

Guildhalls, Market Halls. Many of these are notable examples of early periods.

Tithe Barns, City Walls and Gateways, Bridges. All these and many others should be looked for; each has played its part in the history of the locality,

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English Architecture in a Country Village, by Plaisted. (Longmans.) 2s.

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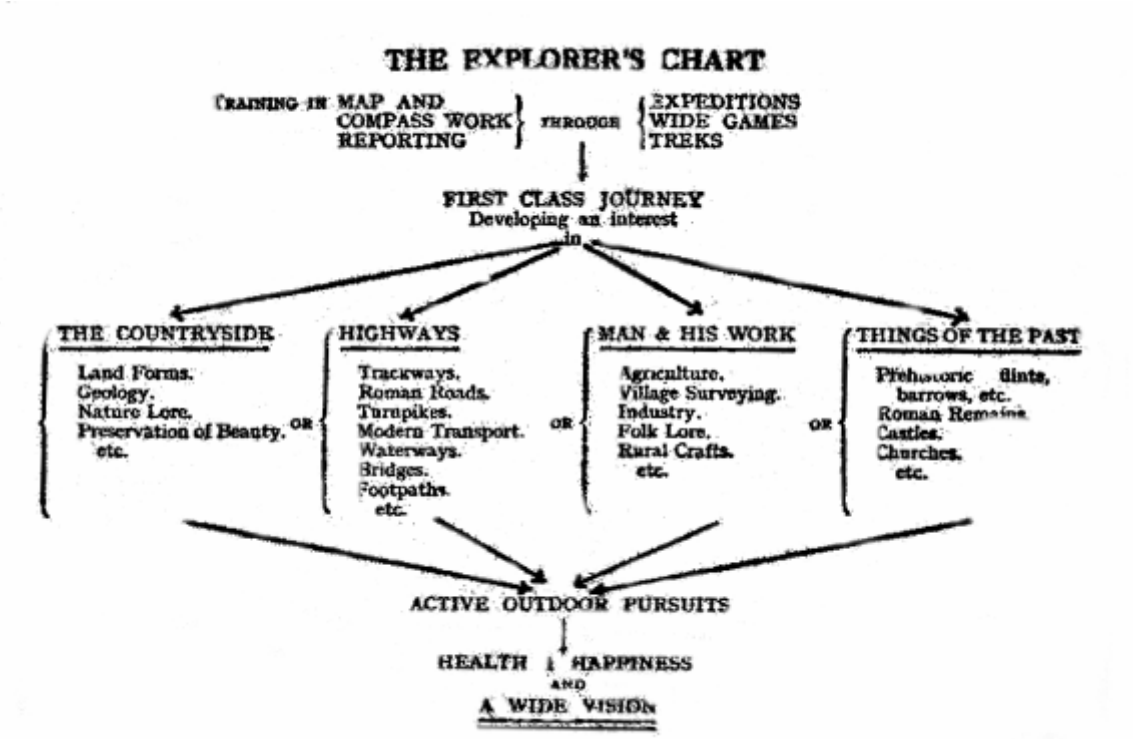
Man and His Past, by O. G. S. Crawford. (Oxford.) 10s. 6d.

H.M.S.O. publishes a valuable pamphlet of *Notes on Archaology,* 4d. which contains a full description of the new classification to be used on future editions of the O.S. maps.



EPILOGUE

A FEELING of confusion may have resulted from a first reading of the preceding pages. So many topics have been mentioned, so many big subjects have been dismissed in a few pages, or even paragraphs, that the path may have got lost amongst the trees. A clearer view will be obtained if the book be regarded as a kind of map; the map-reader is aware of the multitude of roads and paths depicted, but once he has found his own position, and has set his map, the one road that matters stands out plainly before him. He does not ignore all else that the map has to tell him, but he uses his sense of proportion, and chooses those details that are important for the next stage of his journey, and allows other information to take a subordinate place. The same principle should be applied to this book.

The first stage of the road is marked by the First Class Test. Until that mile-stone is reached, all the Scouts in the Troop will have followed much the same route; they will have learned something about Maps, how to read them, and how to make sketch maps, something about the Compass so that they can find their way about any tract of country; they will have gone on expeditions with the Scouter, and have taken part in many Wide Games in which the use of Map and Compass will have played an important part. Some will have made trial journeys in preparation for the biggest test of all – the First Class Journey.

At that mile-stone, the road divides. During the first stage, the Scouter will have indicated the general lie of the land on either side of the route, and he will have discovered what particular aspect of exploration appeals to each of his Scouts; at the cross-roads he will then encourage them to strike out along their own paths, confident that their general training will have fitted them for more venturesome journeys.

Some Scouts may find it difficult to decide in what direction they wish to explore; they should try a stretch of one path then of another, until they have found their true line of country. The Scouter will be in the background, ready to cheer on their efforts, and to foster any growing enthusiasm.

When Troop days are over, some may continue as Rover Scouts, and will pursue still further the old paths as they carry out the Chief's idea of Rovering; "They are Hikers on the Open Road and Campers of the Woods, able to shift for themselves, but equally able and ready to be of some service to others." Those who do not continue as Rover Scouts will have discovered an enduring interest in out-of-doors life; a few may have acquired an enthusiasm for one branch of exploring – they will have many happy and healthy hours before them in following up the few signs given in this book.

This scheme of suggestions may be put in the form of a chart. (p. 60.)

That chart may help to keep the general plan in mind. The advice of the old backwoodsman applies not only to the explorer but to those who have lost a sense of direction in things of the mind and of the spirit. "If you get lost, *sit down*! – sit down and give yourself half an hour to think it over." So thinking over the value and purpose of this exploring work, we shall see that it has at least two objects in view.

It makes the Scout free of his rightful heritage. A poor man once left a curious Will; one paragraph read; "I devise to the boys jointly all the useful idle fields, all the pleasant waters where one may swim, all the streams where one may fish, or where, when grim winter comes, one may skate, to have and to hold the same for the period of their boyhood. The meadows with the clover, blossoms and butterflies thereof, the woods and their appurtenances, squirrels, birds, echoes, and strange noises, all the distant places which may be visited, together with the adventures there found." The signposts set up in this book will all lead to the fuller enjoyment of this common heritage.

But of greater importance is the ultimate object: the providing of activities that will help the boy to develop his abilities and those qualities of character that make for independence of outlook and boldness of spirit. As one writer, Principal L. P. Jacks, has put the matter, "Playing the man is substituted for playing the fool, and mutual loyalty promoted by common participation in that splendid game, The ideal of service, translated from a moral generality into a skilful occupation, is present throughout, and wisdom is taught by working contact with elemental things. Dark days, wet weather, obstructions, difficulties and contradictions are freely encountered, the manful confronting of them being an essential part of the game. The sportsmanlike spirit, under a businesslike discipline, has here been brought into the service of a moral idea; and the spirit of youth rejoices in the combination."

SOMETHING HIDDEN. GO AND FIND IT. GO AND LOOK BEHIND THE RANGES – SOMETHING LOST BEHIND THE RANGES. LOST AND WAITING FOR YOU. GO!