The Canoeing Manual

By NOEL McNAUGHT

With twenty-four photographs
and twelve line illustrations

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MAPS, DIAGRAMS, ETC

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Cartoon "I said roll to the right"	*Light Craft*

FOREWORD

CANOEING as a recreation made its debut nearly a hundred years ago when John MacGregor built his canoe "ROB ROY" and in her made pioneer journeys along European waterways. His subsequent lectures and the books that came from his pen introduced the sport to the public; and the young men who followed it up and persuaded MacGregor to found The Canoe Club in 1866 became responsible for popularizing the sport in Europe and America. As a result of this background, the early books on canoeing were all written by British or American canoeists, and both from a technical point of view and as travel books they made excellent reading.

Times have changed, and the last three decades have seen the sport make tremendous advances, particularly among non-English speaking nations in Europe. These have been reflected in a growing literature in many languages, to which Britain has contributed a fair share as can be seen from the bibliography at the end of this book. Some of these books have been technical treatises on canoe building; some have been guides to specific waterways; others were instruction manuals on particular aspects of the sport. But too little attention has been paid to producing a book with a general picture of the activity for the newcomer. This little book by my friend Noel McNaught does not pretend to be as detailed as an encyclopedia on all branches of canoeing, but it does aim to supply the interested inquirer with the answers to his questions. It gives a general introduction, describes the necessary physical requirements, explains the choice of a suitable canoe and deals

with the accessibility of various waters. It describes and contrasts the joys of canoeing on river, sea and canal, putting in a special plea for the latter waterways so much neglected by adventure-seeking youth. His chapter on canoe touring in Britain makes it very evident that no canoeist need leave these shores to find charm, variety and adventure in the pursuit of his hobby. The brief survey of overseas possibilities further demonstrates that experienced paddlers should never lack new waters to conquer.

I believe this book will whet the appetite of all water-lovers who come to it, and doubtless the old hands will find themselves comparing their experiences with Noel's as they read of the rapids on the Teifi or the Tay. It therefore gives me pleasure to write this foreword, and I hope that many will read this book and decide to join the select company of canoeists who seek their pleasures in quiet lonely places and find satisfaction in pitting their skill and courage against the forces of nature.

JOHN DUDDERIDGE
Hon. Secretary, British Canoe Union

PREFACE

THREE thousand miles by canoe is not really a remarkable achievement. My journeys within the last ten years have not made me an expert. Nevertheless, I wrote this book, so largely based on personal experiences, to guide the beginner in the art of canoeing and to show him what a wonderful sport it is.

My very grateful thanks go to the friends who so kindly supplied photographs and I am greatly indebted for permission to reproduce diagrams and cartoons.

Those who already know all about the subject will, I hope, be suitably entertained when reading these pages about their favourite recreation. They will notice that quite a lot of what I have to say has never appeared before in book form. For example, there is a complete chapter on slalom: the only British book mentioning this branch of canoeing dismisses it in nine lines!

Much as I like quiet backwaters and dreamy canals, my real enthusiasm is for our fast-flowing rivers. Here, if you seek what I sought, you will find that a white-crested rapid is to the canoeist what the exhilaration of a windy hill-top is to the walker.

NOEL MCNAUGHT

Cockpit Chat and Racing Report

YOU can easily learn canoeing. It is a safe sport, now becoming increasingly popular. Today there are in Britain about 10,000 enthusiasts who have made canoeing their choice of recreation. These people mostly belong to various clubs including the Canoe-Camping Club, numerically the largest and the only one run on a national basis. Their headquarters address is 35, Old Kent Road, London S.E.1.

Now canoeing is a splendid sport in that it can be adapted to suit individual requirements. You, perhaps, want to concentrate on adventurous trips down rock-strewn rapids? Or do you fancy drifting along placid little streams with helpful currents ? Do you fancy competing against others in racing and slalom events? Or do you prefer to cruise leisurely on calm canals? Whatever your inclination, there is plenty of choice.

There are virtually no age limits for canoeists. A 3-year-old child can merrily splash her miniature paddle and enjoy the outings; while the late author, William Bliss, who wrote the classic *Rapid Rivers,* went canoeing when well past the age of 80. Women, too, have proved their prowess at paddling, even to shooting difficult rapids. Contrary to general belief, canoeing does not develop the wrong muscles in a woman—it tends to improve her figure and make her more graceful.

In most parts of the country there are canoeing clubs that give a warm welcome to beginners. By joining one of them you obtain many advantages. Technical advice, itineraries of rivers, insurance on favourable terms, illustrated magazines, fixture cards, coloured pennants

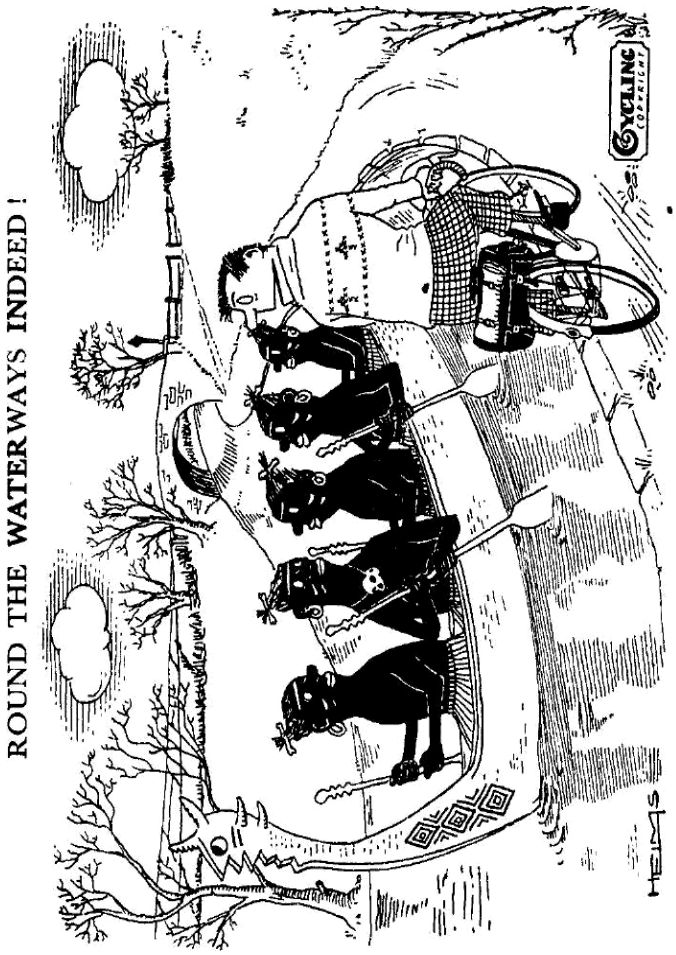


Fig. 1. "*You must have taken a wrong turning. This is the Shropshire Union Canal.*"

and badges at low prices, access to canoeing books—these are just a few of the benefits available to members of clubs.

Great strength is quite unnecessary for successful canoeing, which calls rather for skill than force. If the intention is to train for the Olympics or a Channel crossing to France, then certainly develop your physique by any method you like; and run before breakfast to tone up your whole system! For ordinary touring, nothing elaborate like this is required—you need neither visit a gymnasium nor undertake strict dieting.

Of vital importance is the 'safety first' question. The rules are few and simple. Canoeists must be swimmers and should have a practical knowledge of methods of resuscitation of the apparently drowned. Not that normal sensible canoeing is at all risky; in fact I know of only half a dozen fatal accidents within the last twenty years. Compare that figure with all the mountaineering tragedies and the toll of the road! But you should take a lifebelt on rough rivers and go with companions—just in case of mishaps.

Many weekend courses and week coaching holidays are held at the Central Council of Physical Recreation's Bisham Abbey Centre, near Marlow, and these afford an admirable opportunity for novices to learn the first principles of the sport. Other short courses are held at various places—for particulars of these and for canoe-building courses or easy tours for novices, write to any CCPR regional office. Their head office is at 6, Bedford Square, London WCI.

At the outset of your canoeing career, it is imperative to know the legal position as regards venturing by canoe on waterways. Taking tidal waters first, every subject of the Crown is entitled to boat on them and use

the foreshore, which is that part of the beach or land between low-water and high-water marks. So you can canoe along the coast visiting estuaries and bays to your heart's content: the only places where you are not allowed are War Department properties like the Artillery Ranges at Shoeburyness. Sometimes a small fee is payable for entering a harbor, such as at Shoreham in Sussex.

Broadly speaking, non-tidal rivers are private and belong to the owners of the banks. Canoeing is therefore by courtesy of the various landowners and is not a right that can be enforced; but there are exceptions to this general classification which I shall come to in a moment. It is especially important that a canoeist should respect someone else's property and refrain from paddling along a private stretch of water if requested or ordered to do so; otherwise he may be the cause of the banning of all canoes from that particular piece of water for many months. If you are, then, paddling down a small stream and you see a person who looks like the owner of the land or a bailiff on that part of the river, you should stop and ask permission to go ahead. A tactful approach almost always ensures that you are permitted to proceed; whereas argumentative behavior gets you nowhere and spoils things for the next canoeist coming along that route. It goes without saying that you will never attempt canoeing in the vicinity of trout hatcheries and other places preserved for fishing.

The position is different on some of the larger rivers on which barges or other boats regularly ply. Here there is an undisputed right to canoe as they have been made accessible by Acts of Parliament. Thames, Severn and Trent are examples of this type of waterway. In a similar category are the 'navigations' or canalized rivers

such as Weaver in Cheshire and Wey in Surrey. You are able to canoe up and down them without risk of being turned off, provided you have paid any charges leviable.

Now about the canoeing possibilities on certain rivers which are exceptions to the general rule that inland waterways are private. Considerable doubt exists as to which streams are affected. The question hinges on whether or not the riparian owners have automatically dedicated the rights of navigation to the public through allowing craft to pass and use the waters over many years.

A parallel can be found in the cases of footpaths crossing private land that owe their present accessibility to the fact that they have been walked on since time immemorial. So, too, with a number of rivers, mainly those down which our ancestor, the ancient Briton, floated in his coracle. The Welsh Dee is, I think, a good example, since coracle-men have fished this rough river for centuries, even from the time of Julius Caesar. Towy and Teifi are two other rivers in Wales that could also be listed.

Undoubtedly the most important canoeing organization in England is the British Canoe Union, which is the federation of clubs and performs many useful functions. The BCU is a constituent of the International Canoe Federation and its representatives attend conferences to discuss canoeing matters at international level. Racing and the Olympic Games are major items on the Agenda. The present Honorary Secretary is Mr. J. W. Dudderidge, who conducts the Union's business at 3, The Drive, Radlett, Herts. Individual membership of the Union is possible, but canoeists normally join by belonging to one of the affiliated clubs.

Largely owing to the organization's efforts, purchase tax was taken off canoes. Also, agreement was reached with the Railways that folding canoes packed in their bags could be carried as passengers' luggage without payment of freight charges. Incidentally, it is useful to note—because some railwaymen do not appear to be aware of this concession to canoeists—that the authority for such free conveyance is contained in Amendment Slip No. 57/January 1949 to Regulation No. 18 on Page 11 of the Railway Book of Regulations.

Tours at home and abroad are arranged by the British Canoe Union, and cruising information is available at short notice. A film library has now been established: color as well as black and white films can be withdrawn on hire for trivial fees. Some of these films are instructional; others show the thrills of canoeing fast rivers or journeying through the countryside in leisurely fashion. The following titles are some of those available:

(1) Wild Water Canoeing in the French Alps (16 mins.)
(2) Kayaking on the South Coast (14 mins.)
(3) Sailing Canoe Racing (12 mins.)
(4) Canoeing for Beginners (in 3 parts) (40 mins.)
(5) Glen Albyn (34 mins.)
(a trip from Taynuilt to Inverness)
(6) Journey down the Spey (in 2 parts, color) (25 mins.)

A lot could be written concerning types of craft but many have no practical importance nowadays. Canadian canoes are becoming a rarity in Britain. They must be considered as being on the heavy side for moving overland and cannot always be repaired easily. Of course, they have their adherents who carry them

round strapped to car roofs; but Canadian canoes, being open and exposed to rain and rapids, make the paddlers rather wet.

The first Rob Roy canoe appeared a hundred years ago and was used by John MacGregor, who toured extensively in this oak-and-cedar-decked craft. It proved incredibly seaworthy, carried a small sail but did not seem entirely suitable for shooting rapids. Rob Roys are no longer built unless specially ordered.

Canoes have been constructed of moulded plywood, aluminum, galvanized steel, tin, glass-fiber and a host of other materials; but most popular at present are the folding types and home-made rigid models consisting of a wooden framework covered with canvas suitably waterproofed.

The two latter kinds of canoe are highly convenient for the sport of canoe camping because ample kit can then be taken on tour. Tent, flysheet and groundsheet should be lightweight as the canoeist has many essential things to carry in his craft if camping out—pressure stove, cooking utensils, food supplies, spare clothing, etc. It is generally preferable to be independent in this way as it obviates having to book accommodation in advance and stick to a timetable.

Good books are available on the art of camping so I do not intend to spend time on this subject. If they have one fault it is to insult the average intelligence by setting down in meticulous detail how to do such obvious things as put up a tent or make a cup of tea! There is, however, an important point to remember when camping by a river: always pitch your tent well out of reach of the water, which may rise several feet during the night. Neither must you forget to remove your craft from the river for safety and to moor it

securely to a tree or anything handy. I have known the Wye, for instance, to rise 12 feet within a few hours; and I can quote the case of a brand-new folding canoe washed away on a midnight flood and never seen again.

Turning now to the competitive side of the sport, Lakeland Canoe Club have sponsored a Wild Water Test that is intended to test the proficiency of canoeists in rapid river technique. It is held numerous times each year on the River Leven in the Furness district of Lancashire (the southern part of the Lake District) by courtesy of local landowners and fishing interests.

This Wild Water Test is only open to effective swimmers who have had experience of Grade III rivers. It is not meant to be a normal race where everything is sacrificed for speed: skill must be exercised to cope with various rapids and it is essential to pick the right channels when paddling down this very sporting stream.

During the 1 \ miles of the Leven, which comprise the course for the Test, the river drops 50 feet, and when in spate conditions are comparable to those of a typical Alpine river with spumy, shoulder-high waves. Nevertheless, it is not regarded as being dangerous for those with average experience of rough water.

The organizers have issued rules in which they state the object of the Test is 'to afford the opportunity for training on wild water under controlled conditions and to improve the standard of wild water canoeing in Britain'. A fee of 5/- (which covers camping charges) is payable for competing.

Because of differing water levels a time allowance of 5 seconds for each inch below 10 feet 1 o inches in Lake Windermere's height, as shown on the Depth Gauge, is given to entrants who would otherwise be at a disadvantage. Any competitor who does the run in a

corrected time of under 8 minutes is awarded a Silver Dipper badge; those who take from 8 to 9 minutes' corrected time are given a Bronze Dipper badge; and the best performance of the year earns a Gold Dipper badge. These emblems are designed incorporating paddles, laurels and a dipper—the bird which frequents the swift mountain streams of Britain and can often be seen along the Leven.

The Fenlands Branch of the Inland Waterways Association organize an annual handicap canoe race, usually held in early summer on the Great Ouse. The course is approximately 15 miles from Bedford Bridge to St Neots and involves negotiating eight derelict locks by carrying round them.

Crews of any age may compete for the Goodwin Trophy awarded to the winner of this event. The Christie Trophy is also to be won, but this is for juniors under the age of 18. The rules for competitors say that paddles shall be the only means of propulsion; no assistance may be obtained from spectators; colliding with or inflicting damage on another canoe means disqualification; and it is forbidden to obstruct or assist other entrants.

This particular handicap race generally sees around thirty craft competing, including kayaks, Canadian, folding and rigid canvas canoes. Less than three hours is invariably the fastest time. Any canoeists requiring transport back to the starting point can have this provided, as the cost is covered by their entrance fees, which are 5/- for seniors and 3/6d for juniors.

A similar race is run annually by the Chelmsford Boating Club on the Chelmer and Blackwater Navigation. A distance of 13 miles has to be covered from Barnes Mill Lock to Heybridge Basin. Portage is

necessary at nine locks. Canoes start at intervals according to handicap. The entrance fee of 6/- also includes the cost of a canal license for the journey. If you already hold one, then you need only pay 2/6d. The Chelmer Cup is raced for in this event and certificates are presented for runner-up, the first ladies and the first crew under 18 years old to finish.

In the races just mentioned retirements are unavoidable when craft are holed and the damage cannot be repaired quickly. But this sort of thing is all in the fun of the game!

A more grueling competition is the Mersea Island Canoe Race which is held over an 11½-mile course on the Essex coast. Sometimes it is a considerable achievement to finish owing to contrary winds and unfavourable currents which demand, in some circumstances, great stamina from the canoeists. However, when a following wind is blowing, good speed can be maintained. Long narrow canoes are better than short beamy ones for this type of race. The starting place is off East Mersea Point, and the winner receives the 'Essex County Standard' Challenge Cup.

Poole Harbour Canoe Race is held every year under the auspices of the Canoe Section of the Wareham Dragon Club. This provides a fair test of seamanship over a 15-mile course. From Shipstal the competitors set off on the first 5-mile hop to Sandbanks. Here a compulsory stop for tea is necessary. Another halt must be made at Russell Quay. Then the canoeists go to Giggars Island and the end of the run is at Wareham. In squally weather near Brownsea Island it is quite possible to lose one's bearings!

Undoubtedly the most arduous race for canoeists is the 124-mile marathon from Devizes, Wilts, to West-

minster on the tidal Thames, held every Easter. The first 53 miles (with fifty-seven locks) are along the Kennet and Avon Canal; the second part takes entrants a further 71 miles (with twenty locks) down the Thames. All locks must be by-passed by carrying or portaging with the aid of a small trolley, alternatively it is permitted to fit skids along the hulls so that craft can be slid along the ground at locks. So far the record time is just in excess of 24 hours.

This Devizes to Westminster race is for 2-seater craft manned by two persons who must carry emergency rations, spare clothing and camping equipment in waterproof bags. They must not give assistance to other competitors, nor receive any from spectators; canal and river permits are necessary; and the race is divided into two classes—those over 18 may enter for the senior class; while those between 16 and 18 come under junior class rules which enforce compulsory camping at nights.

Everyone completing the course may purchase commemorative medals at cost price, but some attractive prizes can be gained by winners. For example, the fastest senior crew receive 'The Devizes to Westminster Challenge Cup'; the fastest senior crew in a rubber collapsible canoe are awarded 'The Tyne Challenge Cup'; the fastest junior crew get 'The Wiltshire Gazette Shield'. Also, the designer of the craft winning the 'Devizes to Westminster Challenge Cup' receives 'The Designer's Trophy'.

The objects of this popular event are 'to further the general interest in canoeing and to encourage the design and building of canoes and kit that are light in weight, easily transportable over rough ground, and also suitable for coastwise touring'.

Apart from the races just mentioned, in which almost any type of canoe can enter, local canoeing races are held over distances of 500, 1,000, and 10,000 metres, these being standard distances applicable to events in many countries. Here, however, the craft which generally compete are kayaks with thin wooden hulls and very narrow beams: nowadays very few Canadian canoes are raced.

Kayaks are often of Scandinavian construction. They may have one, two or four seats, thus the races applicable to each size are known respectively as K1, K2 and K4 with the appropriate distance indicated after the symbols. Maximum and minimum dimensions must conform to British Canoe Union requirements, and these are naturally similar to the specifications laid down by the International Canoe Federation in their racing rules. Miniature rudders are fitted to kayaks and they are moved through the medium of a rudder-bar in the cockpit.

Kayak races give good publicity for the sport of canoeing, and take place often on the Thames. In London, the Serpentine Regatta attracts big crowds, who flock to watch the Senior, Junior and Women's Kayak events. The Welsh Harp Regatta, run on a reservoir under the jurisdiction of the Willesden Corporation, is another annual event. Here a strong wind blowing across the course, which is more exposed than a river, may mean very slow times for the winners.

Then we have the Canvey Island Canoe Club Regatta, whose main race is a K1 open water 10,000-metre event for the Chambers Trophy. Leading racing canoeists usually attend and more than a dozen craft compete out of the forty or fifty taking part in the regatta. Once the course was so very rough, causing

many to capsize, that only six canoeists passed the finishing point!

Britain's first rapid river race must be chronicled. This event took place in 1955 on the Upper Wye between Llanfaredd and Boughrood rail bridge, a distance of 11 miles. The winner's time was 1 hour 13 minutes 54 seconds. It is considered probable that this kind of competitive canoeing may shortly become popular in Britain; and when the necessary experience has been gained perhaps we shall send a strong team to the United States to compete in their Arkansas River Race.

Most European countries are represented in the 'Descenso del Sella' race which takes place annually in Asturias, Spain. The course extends for 14 miles from Arriondo to Ribadesella and contains many rapids which are troublesome to negotiate in low water. A variety of craft can always be seen in this Sella River Race for entries generally number between forty and eighty. Three British teams competed in the 1955 event, and one boat, although finishing thirty-second, came second in its particular class.

This seems a suitable opportunity to say that one of the fastest types of sailing boat in the world is the International Sailing Canoe evolved by Britain and the USA and raced by both countries. A high degree of skill is required for this sport. In 1955 four members of the Royal Canoe Club went to New York but failed to regain the trophy which their club had won in 1933 and held for twenty years. In the three races, they came in first twice (but were disqualified over a technical point in the second event) and lost the final race.

CHAPTER TWO

Folding Canoes and Equipment

TODAY folding or collapsible canoes are more popular than rigid models. Their main advantages are lightness and portability. Since 1946 it has been possible to convey them on railways in Britain as passengers' luggage without payment of freight; and nowadays no purchase tax is chargeable on these craft.

Some historical data about early types of folding canoes might prove interesting before going into detail as regards the construction and equipment of present-day craft.

Explorers in Arctic regions must once have been intrigued by the boats the Eskimos made by using a framework of reindeer bones on which was stretched sealskin. These kayaks, as they were called, could be lifted or dragged easily. Some were brought to Britain and copied, but wood took the place of bones and canvas replaced sealskin.

Various experiments resulted in the evolution of the forerunner of the modern folding canoe. Little information exists of the various prototypes that must have been created, but in 1887 one man tried out on the Serpentine his collapsible craft which was constructed basically of eight coat-hangers and a length of linoleum!

The very first folding boat was, however, patented and made in the USA about 80 years ago by V. Colvin. This gentleman was a surveyor who required a light craft for his work on landlocked inland lakes inaccessible to ordinary boats. In his report about his mapping activities, Colvin used the word 'peculiar' to

describe his vessel, that only weighed 10 lb. and went on to say:

> No more frame was needed than could be readily cut from the nearest thicket in 30 minutes. The boat was 12 feet long with thin sheet brass prows, riveted on, and so fitted as to receive the keelson, prow pieces and ribs (of boughs), when required; the canoe being made waterproof with pure rubber gum, dissolved in naptha, rubbed into it.

Apparently Colvin's procedure on completing a survey trip was to discard the wooden framework but retain the canvas hull, which he rolled up into his knapsack for use another day.

Towards the close of the last century canoeing became fashionable after having been initially popularized by 'Rob Roy' MacGregor, a schoolmaster who wrote entertaining books about his tours in the eighteen-seventies, and by Baden Powell (brother of the Chief Scout) a few years later. But costs were rather great, the number of enthusiasts dwindled and the sport became practically dead except that the Royal CC, Britain's oldest canoe club (founded in 1866) remained in existence.

Then came a revival of interest between the wars, due almost entirely to the realization of the potentialities of the folding canoe, which became the favoured type. Some people imagine that it originated in Germany, but such is not the case, although manufacture in that country and in Austria was on a big scale. For instance, in 1936 no fewer than 1,500 clubs had sprung up to cater for 300,000 active canoeists. Their craft were mostly Hart or Klepper types, made at Munich and Rosenheim respectively.

In the early nineteen-thirties the folding canoe began to be manufactured in Britain by two enterprises, namely, Folbot Ltd, later superseded by Granta Folding

Boats, Cottenham, Cambridge, and Tyne Folding Boats Ltd whose premises are at 206, Amyand Park Road, St Margarets, Twickenham. These firms are today busily engaged in the industry and supply large numbers of craft for the home market as well as for export. During the war, their output was concentrated on folding canoes for military purposes, and the exploits of the commandoes who paddled them are stirringly told by Ralph Neville in his book *Survey by Starlight.*

The manufacturers publish attractive illustrated catalogues and they can supply second-hand boats. The important thing to look for here is the condition of the rubber hull, which is inclined to perish if previous owners have taken improper care of it over the years and it has been subjected to extremes of heat or cold. Before buying a new folding canoe it is advisable to try out several different kinds to ensure that you obtain the one most suited to your requirements. You will soon decide whether you want a single- or double-seater. But there is plenty of choice beyond this broad classification.

Perhaps the lightest practical folding canoe is the Tyne Short Single-Seater, weighing 28 lb. This has no loose rods, coaming, nuts or bolts. Measuring 11 feet 2 inches long by 2 feet 2 inches wide, it is priced at *£24.*. Youngsters will find this size very handy to manoeuvre.

The same firm manufacture a 14 feet 9 inches Sports Single-Seater of equal width but weighing 45 lb. and costing £38. This distinctive craft is 'the canoe for the connoisseur', whether used for racing or touring, owing to its rigidity when erected which makes it also perfect for sea canoeing and shooting rapids.

Also in their catalogue Tyne Folding Boats Ltd list a 15-foot Tourer Two-Seater and a 17 feet 2 inches

Sports Two-Seater for £38 and £41 5s respectively. Both models can be fitted for sailing, which involves purchasing a Lug Sail with mast, lee boards, rudder with lines and stirrups (as the rudder is worked by one's feet).

An attractive choice of craft is offered by Granta Folding Boats at prices from £17 10S for a Short Single-Seater to £50 for a 3-Seater (equipped with all extras, including sails, mast, rudder and keel) or even a four- or five-seater made to special order. For the young athlete their 14-foot Club Single-Seater is good value at £30 with carrying bags and paddle additional.

The Popular Single-Seater is 11 feet long and 28 inches wide, having a loading capacity of 300 lb. The basic price of this particular model is £20. Then there are Sports-Tourer Two-Seater and Lightweight Two-Seater types. In length these are 17 feet 9 inches and 13 feet 9 inches respectively, both needing 41/2 inches of water to float.

In 1955 the German Klepper canoes again became available in Britain, the Agent operating from 33, Chudleigh Road, Twickenham, Middlesex. Their models have extra-strong rubber-canvas hulls with decks coloured ultramarine blue. All parts are rustproof and salt-water resistant. Air-tubes (sponsons) for unsinkability are permanently fitted within the hulls (around the gunwales) of the Klepper Aerius 'Flagship' double-seater and the Aerius single-seater. Several of these boats were used in 1954 by a German Andes Expedition to explore unknown caves and wild rivers in Bolivia.

The time required to assemble a folding canoe is about half an hour, once proficiency has been gained. Your best plan is to watch an expert put one together before trying it yourself. Some manufacturers issue

printed instructions and, as most models are similar in construction, the following ought to be useful guidance for the novice, who should note that many of the parts are numbered which greatly assists assembly.

(1) Remove hull from rucksack and spread out on grass, not on sand or shingle.

(2) Empty long carrying bag of all wooden parts.

(3) Fit bow section pieces into position first by attaching No. 1 and No. 2 crossframes (sometimes called formers) to the forward rods which are permanently fixed to the end-post and keel extremity.

(4) Join gunwale rods either side by sliding into metal ferrules ensuring that screws on them engage in the slots of the brass fittings on the formers: then join up the rods lower down.

(5) Assemble stern section in same way.

(6) Insert both parts inside hull, pushing them right in. Ensure they keep in the centre by watching that the edge seam of the canvas is straight along gunwale rods.

(7) Unite the floor sections by pressing down gently but firmly until they are flat. Lock turnbuttons and hooks.

(8) Join rods amidships and put remaining formers in position.

(9) Fit coaming, which fixes to frames by means of hammerhead bolts. Put back-rest in place.

(10) Lastly, attach spraycover, which goes into the slot in the top of the coaming.

Some canoes are described as folding but they only fold flat, retaining their length. These are the Swiftsure Single-Seater and the Speedwell Two-Seater craft manufactured by Messrs Geoffrey Prout & Sons, Small Gains, Canvey Island, Essex. They are really splendid canoes that can carry full cruising loads and shoot rapids on

rivers or surf-ride at sea. Their ends are raised somewhat and straight keels ensure steadiness. Prout canoes weigh 48 lb. or 56 lb. and are either 12 feet or 14 feet long. This firm also produces a flat-folding 9-foot Redskin Indian canoe, ideal for young boys.

Those who prefer to make their own craft can do so with easily obtained materials, which may be purchased from some firms in 'kit' form. This is naturally more expensive than buying the various items separately, but saves a lot of time. Folding canoes are slightly more difficult to make than rigid ones, but you need take no more than a month.

Plans for home-constructed canoes may be obtained from the well-known author-designer P. W. Blandford, Quinton House, Newbold-on-Stour, nr. Stratford-on-Avon, who has already sold many thousands of blueprints throughout the world. His PBK (Percy Blandford Kayak) folding models include both single- and double-seaters, and the only canoe small enough to pack into one bag for taking by bus. The last is his PBK 24 measuring 11 feet by 28 inches and capable of carrying a load of 300 lb. Complete instructions and drawings may be had for 8/6d. Mr Blandford can also send drawings of accessories (paddle, trolley, rudder, etc.) for 2/- and three photographs of the craft in course of construction for another 1 /-. He is an authority on rigid canoes, too, and supplies plans for the construction of non-collapsible types, of which he has designed many.

Anyone not wanting to buy or build a canoe may still enjoy a paddling holiday by hiring a craft. On the Thames, apply to G. G. Hinton, 10, Hambridge Road, Lechlade, Glos. He sends his boats by rail to whichever waterway a customer chooses to explore. The charges for doubles and singles respectively are as follows: 10/- c

and 7/6d daily; 15/- and ii/6d weekend; 25/- and 17/- long weekend; 50/- and 40/- weekly.

Two stipulations are that canoes must be returned clean and that persons intending to cruise on canals must obtain their own permits. But Mr. Hinton can supply canoes already licensed on the Thames: otherwise one would have to pay 15/- for a licence from the Thames Conservancy, 2—3, Norfolk Street, Strand, London, WC2, as canoeing is not free on this river, except on the tidal part.

Also letting out both rigid and folding canoes are Messrs Battle Boats from their boat yard at Water Street, Chesterton, Cambridge. This firm only began in 1955 with a fleet of modern canoes that can be borrowed for cruising on the River Cam or more distant streams. Typical charges are 2/- per hour, 15/- per day, or on a weekly basis you pay £2 for a lightweight two-seater and *£1* 15s for a Popular single-seater. There is a *£2* deposit, returned when a hired craft is returned undamaged.

Another way of borrowing a canoe is to join one of the holiday tours organized on the River Wye in Herefordshire by The Workers' Travel Association Ltd, Eccleston Court, Gillingham Street, London, SWi. These trips have been taking place for five years and are ideal for beginners, as they are led and supervised by expert canoeists. In 1955 runs began at Glasbury and ended at Tintern, with the craft generally covering about 16 miles daily. As a safety precaution all participants in this type of WTA holiday must be capable of swimming 50 yards. Children under 15 years old are not accepted unless with parents.

Probably you will be surprised to learn that an outboard motor can be fitted to a canoe. This is normally

attached to one side of the craft by means of an iron bar which rests on the cockpit coaming. With a \ hp motor a canoe can travel at 8 knots, and this method of propulsion is useful against contrary currents. Vibration does not cause damage.

These motors weigh approximately 15 lb. and generally have their exhausts underwater. Latest model is sold by Granta Folding Boats for £22 and develops 1-3 hp at 3,000 rpm. A special tilting device lifts the propeller from the water for starting. The air-cooled engine requires no oiling or greasing, and this motor, known as the Peter Pan type, runs all day on one gallon of petrol.

Equally efficient is the f hp Anzani 'Minor' outboard motor which took a folding canoe across the English Channel in 1950. A third type is the KS 34, a single-cylinder 2-stroke motor with a capacity of 34 cc. This one is started by a cord (best done from the bank) and runs for 18 hours on a gallon of fuel. The diameter of its propeller, which is protected by shear pins, is 5 inches.

Next comes the question of sailing and fine sport can often be had provided due care and attention is exercised at all times. A land-locked harbour is the best place to learn the rudiments of this exhilarating branch of the canoeing game.

Several sails can be carried on a canoe simultaneously, but the beginner is strongly advised to keep to one at first. And that should not be white but dyed blue to lessen the glare of the sun. Of the various rigs, sloop or una rigs are recommended. The former means a triangular sail (called a jib) is set in the bows before the main sail; the latter means a lugsail or spritsail is fitted. Both rigs need one mast.

Some double-seater canoes are ketch rigged, that is, they have a second mast known as a mizzen from which a sail is set, and this is stepped from behind the rear seat. The Bermuda rig is hardly suitable for canoes because of the difficult stowage problem as regards the very tall mast.

When it is intended to go sailing in a folding canoe, a rudder is essential as well as lee boards. But instead of the latter you can strap on a metal detachable keel (to act as a centreplate), which is constructed on the fan principle and telescopes automatically when coming up against underwater objects in shallows. Without either of these a canoe with a sail would drift sideways, having no grip on the water, and steering would become impossible.

Safety tubes are a sound investment and fit with tapes on both sides of the hull just below the gunwale. These are inflated sausage-like bladders, of course, and their purpose is to minimize the risk of upsetting should the wind be strong.

The technique of sailing cannot be given in a few words—there are plenty of books devoted to the theory of it which you can search out if necessary. Very briefly I am going to give a few hints and leave you to follow up this aspect of canoeing if it appeals.

Safety considerations demand a small sail for the novice—the smaller, the better. Running before the wind is comparatively easy, but make sure you will be able to return to your starting point if that is your intention. When the wind goes at right angles to your course and blows 'on the beam' try to have the sail well out instead of close-hauled: you get more speed that way.

Greater skill is called for when going against the

wind or 'beating to windward'. This usually involves zigzagging or tacking. Here the sail is best left close-hauled. Always approach your landing place against the wind, and start off by heading into the wind as it is imperative not to be moving too quickly at these times.

By watching the sails continuously you will be able to prevent an unintentional gybe which might upset you if it took you unawares. Remember it is dangerous to fasten the main sheet, which is the line attached to the boom of the main sail. This is an elementary rule when sailing any kind of craft and neglect of it may result in a capsize should a sudden squall arise.

Makers' lists of accessories and fittings include many items, some not necessary. Most important (if not supplied with craft) are the paddle, spraycover and trolley. The latter is alternatively known as a trailer or a boat-car or a bogie in England and a chariot in France! The best weight for a paddle is 3½ lb., mostly they are made of spruce wood; a spraycover must fit properly and be instantly releasable in an emergency; and the trolley needs to be easily collapsible so that it stows away below decks. They usually have rubber-tyred detachable wheels and can be bought for -*£2*.

Buoyancy bags in the form of bladders or lifebelts at either end of your craft are essential, ensuring that a waterlogged boat will not sink. Canoeists generally carry a 25-foot coil of thin rope in case salvage operations become necessary after a mishap. Painters are permanently fitted at bow and stern and recognized lengths are 10 to 15 feet or longer with the largest craft.

A repair outfit is indispensable and includes pliers, screwdriver, brass screws, copper wire, strips of canvas, rubber solution, lengths of rubber for patching, petrol

for cleaning, bostick, string, sandpaper, knife, scissors, spare fittings and ferrules, etc.

Rubber waterproof bags are the usual containers for food, clothing and camping gear that has to be kept dry. Mine are actually old muzzle-covers off the guns of Churchill tanks which I picked up cheaply at a second-hand store. Side-pockets hanging from the cockpit coaming will hold small items in constant use.

Personal preference will let you decide whether to take a cushion. This can be made of fibre or sponge-rubber, but should not be of the pneumatic kind otherwise you will sit too high up and wobble.

Paddles should have drip-rings on them. These are simply round rings of rubber to stop the water that comes off the blades when raised from running down the shafts and into the boat. They cost is 6d a pair, but are easy to make for a fraction of that sum. Metal brackets can be fitted to the coaming to act as paddle rests so that a picnic meal can be taken whilst on the move without fear of the paddle rolling overboard.

A flagstaff screwed in at the bow enables a Club pennant to be flown. Such a flagstaff should have a spring section to enable it to bend over when meeting an obstacle—a tree's branch, for example. That completes my list of items except for one refinement to be recommended. I lay canvas, matting or a groundsheet on the floor sections for collecting sand, mud and grit which comes into the cockpit on my feet. Otherwise all this would work down to the bottom of the canoe and chafe against its rubber hull.

Among unnecessary paraphernalia I would mention anchors and boat hooks which figure in makers' price lists, but I have yet to see one being utilized!

CHAPTER THREE

First Steps with Beginners

THIS chapter is specially for complete beginners: it is no disgrace to be one—we must all start sometime. Presuming that you are a newcomer to canoeing and have just assembled your folding craft, I am going to tell you how to launch it, learn the rudiments of paddling and set out confidently. You will find that river sense is very soon acquired. Canoeing can be mastered quite quickly, in fact the average person should be able to travel along looking almost like an expert on his third day out.

Now about launching. It is permissible to drag an empty canoe over grass to the water but lifting is less liable to cause damage if there are stones about. Ask someone to assist, but make sure that the boat when carried from both ends is not loaded otherwise the strain on it will be harmful. If the water is shallow you can walk into it and gently place your canoe upon the surface of the stream. When you cannot do this it may be best to launch at right angles to the water, perhaps necessitating sliding down a steep bank. In these circumstances the stern will probably disappear underwater, but buoyancy will soon bring it to the surface.

When launching from a quay, jetty or landing stage, you may adopt the throwing method if you can call on the services of a bystander. This is simplicity itself: you and your helper merely hold bow and stern respectively with both hands, swing the canoe once or twice and throw her bodily sideways. There are three points to watch: make sure that you throw her clear so that she does not foul the launching place; remember to keep

hold of the painter; and do not let yourself overbalance and fall in!

Once you are ready to embark, place the paddle amidships across the coaming or woodwork which runs round the top of the cockpit, thus enabling you to take hold of it immediately you are seated. Ensure that the boat is floating and that the depth is sufficient for it to do so with the addition of your weight. Have a last look round to see if you have left any gear behind—all this should be stowed methodically below decks.

To enter a canoe is a little tricky when you are unaccustomed to doing so. You have to be very careful until you have mastered the knack not to make it wobble and capsize. The less luggage there is on board, the greater the likelihood of upsetting through instability. One way in which some people get a ducking is by having one foot in the cockpit and the other on the bank and allowing the canoe to drift towards midstream without moving either foot!

Different people have different ways of boarding a canoe, some appearing to be ungraceful leaps and clumsy scramblings that court disaster. My method has not yet let me down. With one hand holding the craft close to the bank, I place a foot in the centre of the cockpit, taking care to stand on the woodwork or its covering. Next I bend forward and firmly grip both sides of the cockpit coaming fairly well forward. Being thus able to maintain balance, I lift the other leg into the cockpit and sit down instantly. After taking up the paddle and tucking the spraycover into position (if I am using one), I prepare to set off.

It is important to get comfortable at the start. Do not be too low in the cockpit but sit on a cushion or sleeping bag so that your waist is about level with the

coaming or very slightly below it. Lean against the back-rest, which is sometimes padded, and brace your feet against one of the crossframes, gripping the underside of the upper deck with your knees. Alternatively, your legs can be nearly straight and slightly apart with the feet resting against a piece of your gear.

I would suggest that your first attempt at canoeing be done in a single-seater, which will obviate that merry clashing of paddles which is inevitable when one begins with a companion in a double-seater.

Within the space of two or three hours you should acquire, by the time-honoured method of trial and error, sufficient practical experience to be able to start, stop, go forwards and backwards and perform simple manoeuvres. Tricks like the telemark turn and the Eskimo roll follow at a later date!

Well, then, you are now seated safely in the cockpit holding your two-bladed spruce paddle. As this is jointed in the middle by a brass sleeve or ferrule (also called a 'collar'), you can turn either half of the paddle so that the blades are both parallel or they may be set at right angles to each other. In the former case the ordinary style of paddling is adopted; in the latter, what is sometimes known as the Continental style. The latter involves more wristwork but has the advantage that on a windy day the blades do not offer wind resistance as they cut through the air with their thin edges first. The Continental style is not, as some suppose, done for swank, and it is invariably used by racing canoeists.

Now paddling a folding canoe is not by any means strenuous. Indeed, it is a hobby that has often been recommended for those having delicate constitutions. With ordinary paddling there are two things to guard

against at the start: you must beware of trying to paddle too fast; and you must not dig the blades too deep in the water. Try to cultivate at the outset a rhythm of paddling in the way that the walker develops an easy swing which means that he does not become fatigued quickly.

Hold the paddle horizontally about 9 inches in front of you with the backs of your hands upwards 2 feet apart. Your arms must be bent, of course. Raise the paddle until it is 6 to 8 inches above the coaming: you are now ready for the first stroke, which is a combined pull and push muscular effort.

Extend the left arm to lower the port paddle-blade into the water, at the same time drawing back the right arm and the other shaft. Now pull with the left arm and push with the right arm, keeping the blade under-water for the whole of the movement. This should serve to start the craft off nicely. Lose no time in making the second stroke: to get into position you simply lift the left hand and depress the right hand about a foot, which brings the paddle-blade on the right close to the water.

Dip this blade into the water without going deeper than necessary and pull it towards you while you straighten your left arm to impart a strong push against the shaft on that side, thus speeding the progress of the blade in the water. Continue paddling by dipping each blade alternately either side of the canoe. Remember that the push has more effect than the pull; and endeavour to keep the blades of the paddles when submerged as near the surface as possible. To turn off a straight course it is only necessary to put more force into paddling on one side which naturally sheers the bows off on the opposite side. Paddle with your left blade and the canoe goes right and vice versa.

Back-paddling hardly requires any description, for this is simply making the canoe go astern by forcing the paddle-blades away from you in the water (i.e. towards the bows). Obviously, if you back-paddle equally both sides your craft will maintain a steady course. But if you back-paddle on one side only, then the stern will swing away towards the other side. The most useful aspect of back-paddling is its value for 'putting on the brake' when you are going forward at speed and desire to stop suddenly to avoid a hazard. Incidentally, the expression 'at speed' referring to a canoe means a speed of approximately 6 knots. If you back-paddle too vigorously there is a risk of fracturing a blade, so this point must be watched. Copper tips generally protect the ends of paddles so they rarely chip when in contact with stones or rocks, nevertheless they must be treated with respect, especially when worn.

Not much need be said about how to end a trip. Always come in towards the bank with bows pointing upstream whenever there is any current. On disembarking, the main thing is to get out of the cockpit as you touch the bank, since canoes have a habit of not staying close to a landing-place for more than a few seconds owing to the drag of the current. Grasp the cockpit coaming for support when you are climbing out. Seize the painter as you step ashore.

After a day or two practicing locally you will be quite ready to undertake your first tour. This should definitely be planned in advance with the help of maps, friends' advice and a study of the *Guide to the Waterways of the British Isles* published by the British Canoe Union (at a post free price of 15s 6d in limp water-resisting binding or 17s 6d in stiff boards). If you depend on trains for transport, aim to start and finish near stations.

It is surprising how many are close to rivers. This is where your little portage trolley comes in handy for conveying your folded canoe from station to river.

On the question of suitable clothing for canoeing, the lightest is generally the best. If you like a hat, take a beret for fine weather and a sou'wester for the rain. Last century a canoeist regularly used a bowler hat: he found this invaluable for bailing out water! Sandals are good footwear as they do not bring too much water aboard when you resort to wading and embark again. Khaki shorts and an open-necked shirt, with a sweater for sunless cool days, is really the sum total of a canoeist's wardrobe. It is, of course, necessary to possess a complete change of clothing in case you get wet. So for wearing in camp in the evenings you will probably be glad of warm underwear, flannel trousers and a sports jacket. I nearly forgot to mention a garment known as an anorak, which is standard canoeing dress for rainy weather. This waterproof top-jacket only extends down to a person's waist but the lower part of your body, protected by the spraycover, always keeps dry while you are afloat.

When you pack your gear below decks, you will be amazed how much can be stowed. Tent, flysheet and groundsheet, pressure stove and bag of tinned food usually go in the forward part of a canoe. The cockpit can receive things needed during the day—camera, drinking water, picnic food, bathing costume and towel, repair outfit, maps, etc. You can sit on the sleeping bag and the canoe's carrying bags. That leaves the rear end for canvas bucket and washbasin, spare clothing, rope, paraffin, collapsible trolley, extra pairs of shoes and other items. The main considerations should be to pack the luggage with equal weight fore and aft so that the

canoe floats on an even keel; and it is rather desirable for you to remember where you packed everything.

Your ship's medicine chest (!) should contain bandages, iodine, aspirin, sticking plaster, safety-pins, needle, scissors, boracic ointment for treating blisters caused by the paddle (note—they seldom occur except in saltwater), and an aperient or laxative. Sunburn lotion, too, is a boon when you need it. In this first-aid box a pair of sunglasses can conveniently be stored: the unbreakable kind last longer.

Referring again to the actual canoeing in the early stages of your career as a canoeist, you must beware of colliding with other vessels or you will surely be sunk. Keeping to the right is a wise rule to follow. But remember that large boats must stay in the deep water; sailing craft are largely dependent on the wind for the direction they take; and punts going upstream or downstream make a point of hugging the bank—they are never particular which one! In the case of encountering motorboats it is advisable to turn your canoe to meet their bow-waves head-on. Take equal care when riding waves that rebound from the banks after a craft has passed.

Your best friend on a river is the current, for it does half the work for you if you know how to harness it. Make use of it all the time and do not allow yourself to be continually in slack water. The strongest current is seldom in the middle of a river; it constantly swings from side to side as the river meanders, perhaps leaving banks exposed alternately on either side.

Never underestimate the force of a current. In bad conditions it may make your trip risky. A strong flow of water tends to conceal rocks and shoals on which you might come to grief. So bear in mind that the more the

current, the greater the danger (especially if weirs lie ahead), and be warned on this score for the sake of 'safety first'.

Should you run aground whilst diagonally across the river, you always get out of your canoe upstream of the current to avoid being knocked over by the canoe refloating and being pressed against your legs by the current. Grounding broadside-on is something to be avoided if possible because in that position it is so easy to tip up and swamp a craft.

The rate of the current is important at bridges and due allowance must be made to prevent yourself being swept against the supports. There is also the risk of getting an angler's hook embedded in your nose as you paddle beneath an arch—they like dangling their dangerous hooks from bridge balustrades; or being at the receiving end when an urchin decides to indulge in an orgy of brick-throwing. Yes, I have found bridges dangerous places. The only good thing about them is that they offer a canoeist shelter during a heavy downpour—if the current is slack enough to let him halt.

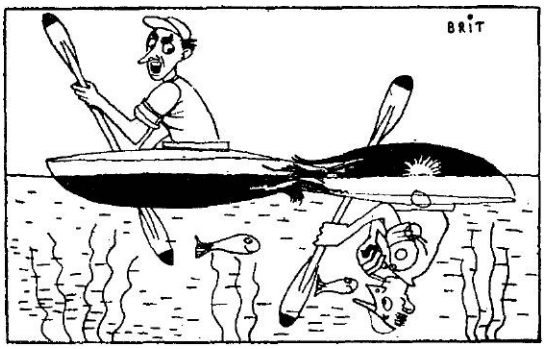


FIG. 2—

"I said roll to the RIGHT!"

CHAPTER FOUR

Canals for Choice

IT is curious that many canoeists seem to dislike canals, seldom taking their craft on them. Perhaps they shun waterways having little or no current to assist their progress; or they find charges too great; or else they prefer to venture on rivers because the latter offer more exciting canoeing.

Now although cruising on canals can be dull—the same applies to some rivers, of course—it has much to recommend it and I therefore propose to outline the advantages before going on to deal with canals in detail and end by singling out specially attractive waterways that are worth visiting.

The benefit of having no current with which to contend is obviously the fact that you can go equally easily in either direction. Furthermore, it means that when planning trips a more accurate estimate of each day's mileage may be made; whereas progress on a river largely depends on the strength of the current, which varies considerably according to the water level at any particular time, and you cannot be sure in advance of its velocity.

On a canal you can reckon to travel at a steady speed of three miles an hour over the whole route. This statement needs to be qualified by saying that allowance must naturally be made for delays to portage round, or navigate through, locks. Ten to fifteen minutes is ordinarily required at each lock. I am not going to give lengthy instructions for negotiating locks: either the keeper will open them to let you through, or you borrow a handle (this tool's alternative names are key,

winder, windlass and crank) to operate the gates yourself. This becomes necessary when unattended locks have to be passed and you prefer not to portage.

On the question of costs, it must be borne in mind that a canal is an expensive thing to build and maintain. The Basingstoke Canal, opened in 1796, cost £190,000; while expenditure a few years earlier on a canal from Chester to Nantwich amounted to over £100,000. Please remember these figures when considering if a charge of 2d per mile with a minimum payment of 2s 6d is excessive. Personally, I cheerfully fill in Form CPO 865 (headed 'Application for permission to use a canoe on the waterways of the Commission'), because I know that I am getting a bargain every time. I never forget that canal maintenance costs more than £400,000 annually! Revenue from owners of canoes provides only a fraction of this figure.

It is always advisable to write beforehand to obtain permission to use a canal and pay the required fee. In 1948 most of our canals were nationalized and now come under one of the four divisions of the British Waterways organization controlled by the British Transport Commission. Application should be made to any of the following regional offices:

SE Division, Willow Grange, Church Road, Watford, Herts.

SW Division, Dock Office, Gloucester

NE Division, 1, Dock Street, Leeds, 1

NW Division, Lime Street Chambers, Lime Street, Liverpool, 1.

Canoeists have the choice of two scales of charges. The first is a yearly permit costing £2 10s (reduced from £2 I3S4d on 1st January 1956) allowing unlimited access with one boat to the canals under the jurisdiction

of the particular Division granting the permit. You can also take out a period permit from 1st April, 1st May- or 1st June to expire on 31st December. Here the fees are *£2* is 8d, *£1* $_{17}$s 6d and £1 $_{13}$s 4d respectively. Scale 2 is the mileage charge for individual trips without use of locks, and I have already quoted the current rate which came into force on 1st August 1955.

You will not find much water in some canals today, but canoes can manage perfectly well with a foot or less. If there is insufficient depth to use the paddle properly, you may have to resort to poling in punt- or gondola-fashion until deeper water is found. Care must be taken to avoid fouling fallen branches, submerged tree-trunks or other underwater obstructions that are occasionally encountered on the upper reaches of certain disused canals.

My advice to anyone contemplating a trip on a canal is to choose very carefully which one you visit. Some have so many locks that they make the holiday hard labour rather than a restful interlude. Go with a companion because, generally speaking, more portaging is necessary on canals than rivers and it is much less tiring when you have assistance in manhandling your craft round locks.

Then again there is the possibility of meeting strong head winds on open stretches in which circumstances it is usually preferable to get out and begin towing. When this happens, one person can haul on the painter attached to the bows while the other must continually push the canoe clear of the bank with the paddle owing to its tendency to keep sheering towards whoever is towing. If you are alone, however, efficient towing can be done by fixing two lines to your craft. The sternmost one, whenever pulled, should swing the canoe's bows

away from the towpath. If the lines are properly adjusted, single-handed towing is perfectly simple.

Not all portages are caused by locks. Some will be necessitated by low bridges which may have been constructed either to swing sideways or to rise on the drawbridge principle for traffic to pass. Maybe they have become rusted into position by lack of use and cannot be moved. When a number of these obstructions block the way along a comparatively short section of canal, the portages are rather irritating if the boat carries much luggage and has to be unloaded and re-stowed each time.

The type of canoeing that I am championing in this chapter has no thrills to match those experienced when descending rapid rivers, surfing on the sea, slaloming or racing, yet it is very satisfying for those who like a leisurely vacation. Quite young children can safely be taken on canals if they wear juvenile lifebelts and have constant supervision. Family canoeing is tremendous fun, especially if you never need to leave the cockpit to wade through shallows and can always find easy landings. But on rivers it is a common occurrence to run aground in midstream and have to get wet feet before refloating; and you all too often find yourself faced with high, unscalable banks when wishing to leave your craft. So I again remind you—canals do have advantages!

It is a fallacy to suppose that all artificial waterways run through grimy, industrial areas. Those that do, such as the Bridgewater, Rochdale, Regent's, and various other canals in the 'Black Country' of the Midlands, should be avoided. Of the rest, some traverse really beautiful scenery and wild countryside, especially when their summit levels are reached.

These summit levels, or pounds as they are frequently called, may be several hundred feet above sea level, for it is surprising how quickly a series of locks can raise a canal to a respectable height. Two incomparable summit levels are those where the Oxford Canal crosses the Chilterns and where the Leeds and Liverpool Canal strikes over the Pennines. On both these waterways you can be alone with the plover and the curlew. My own favourite summit level lies along the Lancaster Canal and extends for 15 lockless miles to Kendal. Unfortunately this lovely waterway is among numerous others that are becoming derelict and it behoves us to canoe there fairly soon in case it ceases to be navigable in the near future.

It is always a good idea to try to fix your voyage—if it is to be on a little-frequented canal—in the spring or early summer. By doing so you will avoid the heavy growth of weed which becomes positively prolific towards the end of the summer. Luckily on some waterways weed-cutting takes place: on others it does not. Blanket-weed is the very devil and will reduce your speed by about half. Rushes can be even more of a nuisance: they may bring you to a complete standstill. I repeat, therefore, do not leave your canal cruise until too late in the year.

Turning now to those canals which are not defunct, a number of factors have to be taken into consideration as regards barges and how they affect canoeists. It goes without saying that they have more reason to use the canals than you have so they must always be given right of way. The first thing you have to do, then, is to avoid causing a collision. That should present no difficulty if you observe the rules laid down by the authorities who control the waterways. Practically

always craft are expected to keep to the right; but you invariably pass a horse-drawn barge on the side opposite to the towpath. The towing rope is a potential danger to you if care is not taken to keep clear. Another point worth mentioning is that when one part of a canal happens to be very shallow—perhaps on a corner—then you allow bigger craft to use the deeper side.

You need not worry unduly about the likelihood of being swamped by the bow-waves of motor-barges since strict speed limits are enforced to prevent erosion of the banks. But it is inadvisable to paddle too close to such craft owing to the suction-effect that they create in the water when passing.

Most locks average 15 feet wide and 80 feet long although some much bigger ones are found in Britain. More than one craft can often be accommodated simultaneously—there is ample room and lock-keepers will emphasize this fact and invite you to share the lock with another vessel. But on no account agree: the risk of having your canoe crushed like an eggshell against the wall of the lock by a barge or other boat is just not worth taking.

What precaution is necessary above all others if you have to leave your craft unattended for even a short time to go shopping or visit some local place of interest ? I will tell you. Remove it from the water, then you can come back confident that it will not have been smashed in your absence by some other vessel carelessly navigated along the waterway.

When halting for the night never let your craft stay afloat in case of damage from barges. Put it on the bank in a secure place and upside-down to keep out rain. If you decide to canoe any distance after dark, the

fitting of navigation lights will be obligatory in the event of the canal being used by commercial traffic. But for a short local trip you need only carry a torch to flash if another craft approaches and so warn him of your presence.

A moonlight cruise in the cool of the evening can be a pleasant termination to an enjoyable day, and you will probably catch some fish by trolling with a line out astern. Whether by night or by day, it is important to observe all regulations and by-laws which relate to canals. These usually prohibit washing, bathing and tipping rubbish into the water. Another sin that canoeists must not commit is to obstruct the towpath.

There are nearly fifty tunnels on British canals and many can still be penetrated by boats. To negotiate any of them in a canoe is an interesting experience, but a slight risk is entailed owing to the possibility of meeting larger craft coming in the opposite direction. To give warning of your existence, therefore, you need, as well as your electric torch, a strong pair of lungs to enable you to do some shouting if necessary!

One suggestion for the course of action to be taken when encountering a barge in a tunnel is to stop immediately, shout to indicate which side you are and draw close to the wall until it has passed. But the safer plan, the one I rely on implicitly, is to turn round the minute you are conscious of an approaching vessel and paddle like mad back into daylight, passing along the tunnel after it has gone. As the majority of canals have no towpaths through their tunnels you cannot land in them when being passed.

A typical example of a short tunnel that need give nobody any worries is the Talybont tunnel, 375 yards long, on the beautiful old Brecon Canal. This waterway

is one of the finest for canoeists. It serpents along the hillsides at the foot of mighty Blorenge and the Brecon Beacons and goes up the verdant Vale of Usk. Owing to threats of closure because trade on it had ceased a rally of boats was held recently to prove that navigation was still possible and to emphasize that the canal is an important amenity for recreation purposes and should **not** be abandoned. This rally, by the way, was organized by the Inland Waterways Association, who will be pleased to enroll you as a member if you are, like myself, an ineradicable lover of canals.

Another comparatively small but well-known tunnel is situated at Savernake on the 86-mile-long Kennet and Avon Canal that joins Reading to Bristol. It extends 500 yards through a hill on which a railway station stands and is known as the Bruce Tunnel. This canal has two shorter tunnels near Bath.

Lack of headroom will never be a problem in **a** British canal tunnel. In Gloucestershire the old Sapperton Tunnel (3,808 yards long but now blocked) could give anyone 10 feet from crown to water level; but the first Harecastle Tunnel on the Trent and Mersey Canal had less than 6 feet of headroom.

Along the Grand Union Canal in Northamptonshire two long tunnels are located at Blisworth and Braunston. Their lengths are 3,056 yards and 2,048 yards respectively. The former is straight like most of our canal tunnels but the latter is crooked, having two bends which make it dark and dreary and very vault-like. To paddle a canoe through the Braunston Tunnel is certainly an eerie adventure and a cold one, so you had better wear a thick sweater as well as a mackintosh because of water continually dripping from the roof. How delightfully cool it must be on a really hot day!

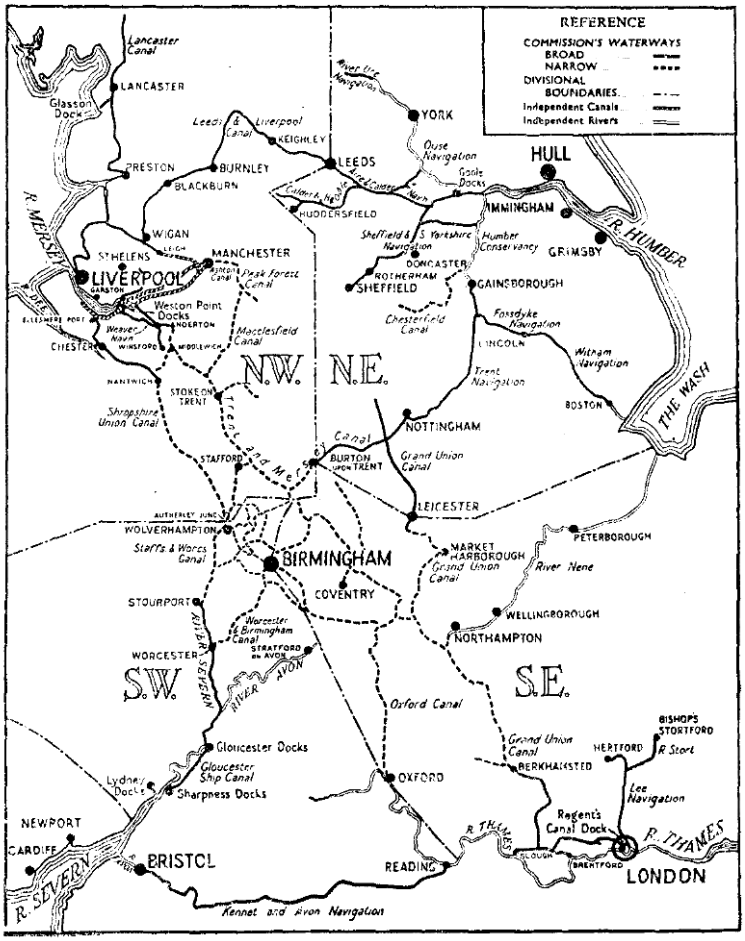


Fig. 3. *British Waterways—Divisional Organization*

As a matter of interest to statistically minded readers the longest canal tunnel on our inland waterways is in Yorkshire. This is the famous Standedge Tunnel that was cut through the Pennine Range for a distance of no less than 5,415 yards. Unhappily the Huddersfield Narrow Canal, to which it belongs, was included in an Act of Abandonment during the last war and is now virtually dead. The Standedge Tunnel is 637 feet above sea level, having the greatest elevation of any British canal. To reach it meant negotiating more than thirty-five locks whichever way you were travelling—a busy day's work for a canoeist!

One advantage of journeying by canoe along canals in rural districts is that camp sites are never hard to find. Indoor accommodation is often available at little inns that formerly catered for bargees.

The map showing canals which has been reproduced in these pages by courtesy of the British Transport Commission omits several eminently suitable waterways because they are either separately managed or privately owned, or have been abandoned and are no longer maintained. A brief survey of some of these follows because they can be regarded as being among our most attractive canals.

The shortest is the Exeter Canal that goes for 5 miles from Exeter to Topsham Lock on the Exe estuary. The charge is 5/- for canoes and permission must be asked from the Exeter Corporation. Historically this waterway is unique, having been constructed in 1563 by Elizabethan enterprise to become the first ship canal in England.

I have already alluded to the very lovely Brecon Canal in South Wales. This can be explored for 42 miles from Newport to Brecon, but the first 7 miles

should be missed to avoid thirty-one locks. The rest of its length is level except for five locks at Llangynidr and a final one at Brynich, close to which is a magnificent stone aqueduct carrying its waters over the swirling River Usk. Application to use the Brecon Canal should be made to the Chief Docks Manager, Pier Head Buildings, Cardiff.

Various waterways comprise the Shropshire Union Canal system with its many branches. The section running up the valley of the Upper Severn is extremely attractive, but sad to say parts of it in Montgomeryshire are no longer navigable, having been filled in or piped under roads. The Llangollen branch I can strongly recommend. By means of this cul-de-sac canal, known as a 'feeder' because its purpose is to draw water out of the River Dee for the benefit of the main canal which it joins near Ruabon, you can penetrate into the heart of the glorious Vale of Llangollen. If you begin canoeing in Llangollen, you can paddle your craft all the way to the Severn. First you follow the canal, crossing Telford's gigantic Pontcysyllte and Chirk aqueducts built in 1805 and 1801 respectively; then you portage into the Vyrnwy and descend that stream for 10 miles to its junction with the Severn at Melverley. A really grand canal-cum-river trip that can be continued, if you have the time and inclination, as far as Tewkesbury or Gloucester.

The Basingstoke Canal, one of the few unnationalized waterways, lures many canoeists by its charm and its nearness to London. It winds across sandy heaths, between pine woods and then through delightful Hampshire countryside. The middle part has rather many locks but is unusually attractive with its masses of watercrowfoot in spring. The summit level runs for 12

miles from near Aldershot to Odiham. You cannot go much beyond this village as the Grey well Tunnel has collapsed in the centre. A charge of 1/— per day for canoes on the Basingstoke Canal is payable to the General Manager, Mrs. J. Marshall, Green Ways, Fleet, Hants, who encourages pleasure boating and likes to see as many canoes as possible helping to keep down the weed growth.

Of ship canals in England, the Manchester Ship Canal is too industrial to attract canoeists, who are probably prohibited from using it anyway. But the Gloucester and Berkeley Ship Canal can be recommended, since it enables you to avoid the greater part of the treacherous Severn estuary when on a long tour. At either end of this 17-mile canal a lock is situated and a single-journey permit costs 5s 6d, allowing you to go from Sharpness to Gloucester or vice versa. The Stroudwater Canal crosses it about half-way and you may care to carry over on to this smaller canal and explore part of it.

In Scotland the four important canals are the Caledonian, Crinan, Forth and Clyde, and Union. The last runs 31 miles from Edinburgh to Falkirk. It comes under British Railways and 5/- payment should be made to the office at 129, Fountain Bridge, Edinburgh. Under the same management is the Forth and Clyde Canal. Between Grangemouth and Bowling—35 miles—you must negotiate thirty-nine locks. As its name indicates, this waterway is a 'coast to coast' canal.

Of more appeal to canoeists is the g-mile-long Crinan Canal which connects Loch Fyne with the Sound of Jura. This small ship canal is used by fishing boats, coasters and puffers. Its summit level is 64 feet above sea level and there are 15 locks. Since the latter are

bunched in 4 sets, only that number of portages need be undertaken. Ardrishaig and Crinan are terminal points where tolls are payable.

Finally, it is fitting to finish dealing with canals by mentioning the magnificent Caledonian Canal which can be toured in, say, six days at a cost of 15/- if you bypass locks. It runs north-east from Corpach, near Fort William, to Inverness and is just over 60 miles in length. But as 38 of these miles are made up of natural lochs, only 22 miles of artificial cuttings were made. Ten portages take you past twenty-nine locks, as some are in series, notably 'Neptune's Staircase' at Banavie which is a ladder of eight; and at Fort Augustus another ladder of five is situated.

The charge you pay for the privilege of using this world-famous waterway includes lock-keepers' assistance if required; but easy landings and level towpaths for trolleys make things easy and their aid will seldom be summoned. Swing bridges numbering eleven allow plenty of headroom for canoeists who frequently stay at several of the Youth Hostels that lie along the route.

It is best to travel towards Inverness since you get the benefit of the prevailing wind which is south-west. The scenery along the Caledonian Canal is absolutely splendid with views of Ben Nevis, Castle Urquhart, etc. It is worth recording that the last 6 miles into the town of Inverness can be done either by the canal or by canoeing down the River Ness which branches off beyond the end of Loch Ness. There are, however, quite fast rapids to negotiate, and islands in the river surrounded by shallows that may be awkward in low water.

CHAPTER FIVE

Rivers to Tour in Britain

IF your preference is for rivers rather than canals, lakes or estuaries, England as a touring ground is hard to beat, and you have a wide choice of where to go. Rivers, of course, have several advantages: they are less exposed to wind and safer than lakes; they are cheaper than canals; and camp sites are easily found on the banks. Also, there is generally an appreciable current to help you along.

Let me deal first with the longest English rivers. The Thames is ideal for novices, except as regards expense: a Thames Conservancy Licence costs 15/— annually; and lock fees at 9d a time mount up when you paddle from Lechlade to Teddington, negotiating forty-four locks! Nevertheless, a voyage down Old Father Thames is well worth while. But you will not find me or any other Scot trying it twice!

The Trent wanders across the Midlands from Staffordshire to the Humber. You could paddle down it for 150 miles, but the tidal last few miles are not pleasant and there is the eagre or bore with which to contend. Another river of similar length is the Great Ouse. Start at Buckingham or preferably Wolverton and end at King's Lynn near the Wash which, incidentally, is not a safe place to go canoeing.

Altogether charming is the Warwickshire Avon, nowadays attracting more canoeists than ever before. I have therefore chosen the itinerary of its course from Rugby to Tewkesbury (91 miles) for inclusion in the Appendices of this book and it is quoted from the *Guide to the Waterways of the British Isles* by kind permission of

the British Canoe Union. Many equally helpful itineraries are given in this guidebook which greatly assists anyone planning tours by canoe.

Both Severn and Wye are probably too famous to call for comment. From Welshpool to Worcester is a magnificent Severn voyage; from Glasbury to Chepstow via Hereford, Ross and Monmouth is the normal Wye canoeist's programme. Each run is 100 miles, just right for a week's holiday. The Wye is entirely free from portages and has good rail access and is one of the best boating rivers. I heard of a man who liked it so much he canoed it ninety times—but he may have miscounted!

Canalized rivers are known as 'navigations' and involve lock fees and sometimes permits as well. Typical rivers of this type are Lea and Stort in Essex; Wey in Surrey; Medway in Kent; and the Nene and Soar in Northamptonshire and Leicestershire respectively. All these give ideal trips if you are not averse to fairly frequent portaging at locks.

Of what we call the chalk streams, Hampshire's Itchen, Avon and Test take pride of place. The Itchen is short, being canoeable from Winchester to Southampton, a mere 16 miles. The Avon goes through many large estates, so previous permission is essential: from Salisbury to the sea at Christchurch is 40 miles. The Test is strictly private, but I have paddled down its clear waters from Whitchurch to Stockbridge ... on England's most famous fishing river . . . stolen fruits taste sweet! Other rippling chalk streams are Lambourne and Kennet in Berkshire, the latter running close to the Kennet and Avon Canal after Hungerford.

Tributaries of the Thames that canoeists often visit are Loddon, Cherwell and Windrush, each being pos-

sible for about 20 miles, also Evenlode from the Cotswolds which offers 15 miles' canoeing. Loddon traverses two big parks which means contacting the owners, Sir Arthur Russell and the Duke of Wellington, beforehand; Cherwell joins the Thames at Oxford, therefore its lower part is not likely to offer solitude; and Evenlode is somewhat obstructed by weirs, wires and low bridges.

In the Midlands, innumerable little rivers beckon to be canoed—Stour, Tame, Churnet, Penk and Sow to name only a few. Warwickshire in particular is well endowed with small streams. Weekends see club meets active on these unpretentious waterways as well as on more important ones, like Dove and Derwent which flow into the Trent.

Down in Somerset you have the choice of the lower Bristol Avon (or its upper part in Wiltshire) which lets you see the remarkable Clifton Gorge from a novel angle; the 20-mile Parrett leading to Bridgwater, with its tributaries Yeo and Isle; and another minor river, the Tone, that passes Taunton. Rather longer is the Brue that you may paddle for 23 miles: from Glastonbury to Burnham is around 13 miles.

Still in the south-west, we find the Devon rivers, all moderately difficult and wildly beautiful. Taw and Torridge flow to Barnstable Bay; the rest head south. Dart is delightful from Buckfastleigh to Totnes, only 6 miles—but one invariably continues along its world-famous tidal estuary for a further 10 miles before packing up at Dartmouth. Then there is the very attractive Tamar that can be tackled for 30 miles or so from near Launceston to Brunei's renowned Saltash Bridge on the tidal estuary. A journey down the Exe is another expedition about which I find it difficult to

curb my enthusiasm after an eventful trip from Tiverton to Exeter: this is a surprisingly rough river and is graded RW II.

Yorkshire is another county possessing a good selection of rapid rivers, some allowing 60 or 70 miles canoeing upon them. Longest is the Aire; easiest, the Derwent; prettiest, the Wharfe; most exciting, the Tees. The Don is pleasant enough between Conisbrough and Doncaster, but not below this town owing to industry. Coming from the Cleveland Hills, the Rye is recommended after Helmsley and makes a good beginner's playground. A few portages are required.

The Nidd is occasionally canoed from Pately Bridge, but lack of water is a headache if the upstream reservoir dams happen to be shut. It is 40-odd miles from here to the Ouse and you go through Knaresborough. In a spate the Swale is decidedly fierce, but you can usually reckon to try it in summer without any risk. At Swale Nab it merges with the Ure which drains Wensleydale and, I think, deserves a paragraph to itself to round off this list of highly satisfying Yorkshire rivers.

Thrills in plenty await anyone who sets out to paddle down the Ure from Askrigg: there are falls, cataracts and classic rapids to conquer. Hack Fall is a difficult shoot, but at Aysgarth portaging round the falls is always essential since they are dangerous. After Wensley the going is smoother, nevertheless rocky rapids are found near Jervaulx Abbey. Ure's mileage for canoeists amounts to 62 before it placidly joins the Ouse.

An atlas will indicate countless East Anglian rivers, not to mention the Broads, that are canoeable in Norfolk, Suffolk and Essex. I cannot pass on without singling out three for special recommendation—Cam,

Lark and Suffolk Stour that was so often painted by Constable.

England's chief difficult rivers, apart from those already discussed, are Lune and Ribble in Lancashire and that superb salmon-river in Cumberland, the Eden. All three are splendid from a canoeing point of view, but unhesitatingly for acknowledged 'white water' experts only.

The Lune is exceptionally wild among its moors and a seething torrent in floodtime. Generally, one begins at Sedbergh and completes the descent at Lancaster, 30 miles downstream. A dozen miles from the start is Kirkby Lonsdale with its old Devil's Bridge, a suggested stopping place for the night. Two miles from the finish a magnificent stone aqueduct crosses the Lune and it is feasible to transfer to the Kendal Canal at this point and continue cruising either south towards Garstang or north in the direction of Kendal, where the canal ends.

You can come down 50 miles of the Ribble if you launch at Settle. Numerous weirs cause some delay but a quick journey is certain if the water is good. Time needed to reach Preston is from 2 to 5 days, depending on conditions. In drought shallow ledges will be awkward.

Finally, the 'English Eden', as I like to call it, is a gem—completely unspoilt and touching no town until reaching Carlisle, 58 miles from Kirkby Stephen. It is not by any standards an easy river and has a 3-mile section known as the Nunnery Rapids with seventeen difficult rapids within 4 miles. The Eden is a 'must' for any canoeist who revels in wonderful scenery and is not averse to chancing his luck in the rush and tumble of its rapids. To navigate it by canoe is an unforgettable experience.

Ireland certainly does not lack canoeable rivers. In the north, the Bann can be paddled for 30 miles from Lough Neagh to Coleraine, with five locks *en route;* and the Foyle can be followed for 20 miles from Strabane to Londonderry and Lough Foyle. Two more medium-sized rivers are the Liffey and the Boyne that flow east in Leinster. But many portages are necessary on both.

Britain's largest river, the Shannon, gives a lengthy cruise from either Drumshambo or Carrick to Limerick, a distance of almost 150 miles that requires a fortnight to cover. Beware of squalls on exposed loughs like Derg and Ree. The Erne is recommended from Drumhawnagh (near Lough Gowna in Co. Longford) to Belleek, 85 miles. Both Upper and Lower Lough Erne are island-studded and one can easily lose one's sense of direction, therefore compasses should be carried, also reliable maps, together with ample food supplies, which are not always easy to obtain on this particular tour.

In the south-west of Eire, ideal canoeists' rivers are Bandon which comes to the sea at Kinsale; Lee that brings you 20 miles from Macroom to Cork City; and beautiful Blackwater, sobriqueted 'The Irish Rhine', perhaps because of its many castles along its banks. The latter's 70 miles from Banteer to Youghal are not at all difficult and take you through Mallow, Fermoy, Lismore and Cappoquin—a splendid trip, one of the very best I know. And there are pearls to be gathered on the bed of the Blackwater in the vicinity of Cappoquin, so canoeing there may be unexpectedly profitable!

Four other rivers of great appeal in Southern Ireland with their canoeable distances are: Barrow (93 miles); Nore (55 miles); Slaney (43 miles); and Suir (87 miles). These are probably best approached from England by means of the Fishguard/Rosslare route.

Wales is wealthy in rivers to canoe, whether you fancy frolicking foam-flecked rapids or the quieter waters of her border streams. Conway and Clwyd flow north and offer short trips. In Merioneth 9 miles of the Dovey are possible; and part of the Wnion (which becomes the Mawddach estuary leading to Barmouth) can float canoes.

Rising in Radnor, the Lugg and Teme are lively rivers down which to venture as most of their weirs that formerly held up the water have been swept away by successive floods. The first allows 30 miles' canoeing; the second, sometimes 70. The Vyrnwy in Montgomery is comparatively sluggish, but very useful as a connecting link in a round tour. You can conveniently portage on to it from the canal at Llanymynech and thus reach the Severn at Melverley in Shropshire.

The Towy runs south-west and may be explored for 32 miles from Llandovery to Carmarthen. It is suitable for beginners, being classed RW I for difficulty: shingly shallows, small rapids (especially at corners, of which there are few) and an occasional fast-ish bit of current characterize its course. Surrounding scenery is pleasantly rural. I like the Towy, so will you.

The Teifi is a Cardiganshire rough river of some notoriety, having been publicized by William Bliss in one of his canoeing books. Experts regard it as one of the finest in Britain, its only disadvantage being its relative inaccessibility, especially for Londoners. Unshootable falls exist at Henllan. And at Llandyssul and Newcastle Emlyn there are quite hazardous rapids that some are content to see from the bank without closer acquaintance! Those who start as high as Tregaron (not far from Strata Florida Abbey ruins) can descend the Teifi for 55 miles: a week is desirable for this itinerary.

Brecknockshire has the Usk, another 'wild horse' of a river to ride. Many severe rock-strewn rapids provide a test of skill; while in flood it must inevitably be dangerous. However, the 1,400-foot dam of Swansea Corporation's new reservoir completed in 1955 at Trecastle in the upper Usk valley will doubtless reduce sudden spates or dangerous flooding in future. From Senny Bridge near the Brecon Beacons to Caerleon is 70 miles. The most awkward part is between Talybont and Crickhowell: luckily you can avoid this stretch if you are chary of damaging your craft by transferring to the Brecon Canal for 11 miles since this near-derelict waterway keeps close to the Usk. The little River Monnow is practicable for 15 miles, perhaps more, and passes Grosmont and Skenfrith Castles before mingling with Wye's waters at Monmouth.

The Welsh Dee (known as the Cheshire Dee on entering England) is canoeable for 80 miles and offers simply grand sport in its upper part with tumultuous rapids and a surging current. Begin at Bala (where there is a 4-mile long lake which permits canoeing except on Sundays) and travel 26 miles to the Horseshoe Falls, actually a circular weir. At this point transfer to the Shropshire Union Canal and paddle 2 miles to lovely Llangollen to avoid a dangerous stretch of the Dee that has rarely been canoed.

Below the town bridge you can return to the river to enjoy more rapids in the region of Trevor and Tymaen Island where several canoes have before now come to grief! Beyond Bangor, a slack current and dull scenery make it less interesting down to Chester.

Both Severn and Wye rise on Welsh Plynlimon and their upper canoeable parts must be mentioned. As with the majority of mountain streams, these two are

very sporting. Severn can be descended from Llanidloes through Newtown and Welshpool, some 50 miles of hard going before the river becomes sedate and winds across the plain to Shrewsbury; Wye can be canoed from Rhayader for nearly 40 miles before it enters Herefordshire at Hay. Caution is advisable about Builth and there are notable rapids at Erwood, Llanstephan and elsewhere. That seems to complete this brief summary of canoeable rivers in Wales.

Now for Scotland whose rivers, by and large, are swift, exciting and emphatically not for inexperienced canoeists. Taking the easiest first—those that are not beyond the capabilities of beginners with some trips to their credit, I call attention to the slow-flowing Don in Aberdeenshire; the short Leven that joins Loch Lomond to the Clyde estuary; the little-known Ness and Lochy close to the Caledonian Canal; and the 3-mile-long shining Shiel that goes out of Loch Shiel and enters the sea in the romantic district of Moidart. The Forth, too, presents no special difficulty, meandering from Aberfoyle to Stirling, something like 37 miles.

Next there are two rivers of moderate difficulty in Perthshire: the Dochart takes you 15 miles from Crianlarich to Loch Tay; and the Earn leads from Crieff for 30 miles to the Firth of Tay, the final 10 miles being tidal, so judge your time accordingly and take advantage of the ebb.

Tweed is a favorite except in dry summers, when wading is endless. From Stobo to Berwick totals 77 miles. Bad rapids occur in several places and numerous 'caulds' (weirs) must be shot or portaged. Melrose, Dryburgh and Kelso stand on the banks which have many historical associations that make the Tweed worth visiting.

Strange to relate, the Clyde does not seem popular. Although it has been descended for over 70 miles, long portages are obligatory round the various Falls of Clyde near Lanark, and this fact may have discouraged many people from trying it. They have indeed missed a treat if they have never drifted down Clydesdale through the orchard country in blossom time.

Now I come to Scotland's grandest rivers, those that rush and fret over boulder-strewn beds in wild splendour to challenge the skill of those who go down to the sea in canoes. The Tay sweeps spectacularly across Perthshire and is graded RW I-III which scarcely indicates the fierceness of its rapids at Stanley. This fine river allows you to canoe 47 miles from Loch Tay to Perth, a never-to-be-forgotten experience. You will remember a General Wade bridge at Aberfeldy; the glory of the Birnam beeches in the Dunkeld district; the quietness of Caputh village; and the thrill of shooting Campsie Linn, a dolerite dyke stretching from bank to bank at a bend in the river. Journey's end comes at the foot of Kinnoul Hill, a noted viewpoint on the outskirts of Perth.

In Argyll, Orchy and Awe guarantee highly exciting trips, but you must be in good fettle to risk these spume-spouting rivers. And they are tough on the hulls of craft. The advantage of Awe is that it links Loch Awe with Loch Etive, but during its brief career of 4 miles it drops no less than 120 feet down to sea level. Unfortunately, a big new hydro-electric scheme, destined to cost £25,000,000 and to take six years to complete, is certain to spoil the Awe for canoeing after the construction of a giant dam just beyond the Pass of Brander.

'Highland' Dee from Braemar or Ballater as far as

Aberdeen is for daredevils only: a glorious voyage, but one needing courage and resource. The absence of well-defined deep channels makes the Dee decidedly difficult —almost impossible, some folk say. Its bed is scattered with rocks and boulders, both large and small. Aboyne and Banchory are good places to halt for supplies.

Lastly, the Spey can claim to be the grandest river in Scotland. It is canoeable for 70 miles from Newtonmore in Inverness-shire to the sea at Spey Bay, east of Lossiemouth. At first it is consistently easy. Then after 30 miles or so, rapids commence and increase in severity until the river is fairly throwing its weight about.

The Spey is a byword among most canoeists. Repeat these names of places in Strathspey to any of them: Knockando, Craigellachie, Aberlour, and you will be told that they stand for heavy rapids lashing across the decks of light canoes as they bounce from one hazard to the next. The Spey is a veritable man's river and not to be trifled with. It has, as far as I recollect, not a single portage below Aviemore the usual starting point on the edge of the Rothiemurchus Forest.

CHAPTER SIX

Riding the Rapids

NOW I come to what many people consider the most exciting branch of canoeing—rapid-shooting. The beauty of it is that there are all kinds of rapids to suit everyone's particular preference. They range from insignificant drops caused by gravelly banks forming on the bed of rivers to formidable foaming high waves such as you find on some Scottish rivers. The proper canoeing technique can only be mastered by experience, which means beginning with easy rapids and gradually working up to the difficult ones. Before you set off you should acquire some theoretical knowledge on the subject or you are likely to come to grief through overlooking the fact that running water has terrific power and must be treated with respect.

There is no manlier sport nor more fascinating pastime than descending rough-water rivers involving the negotiation of rapids and weirs and the overcoming of difficulties that call for qualities of perseverance and resourcefulness.

Later in this chapter I am going to mention some notable British rapids and give hints for shooting weirs, which are really artificial rapids. But first I shall consider the nature of fast-flowing rivers and warn you about obstacles likely to hinder or endanger a canoeist. Let us, therefore, look at a typical river of this type.

The bed is boulder-strewn in its upper reaches and it offers fine fun to those adventurous enough to launch their craft as near the source as possible. Much depends on the level of the water, and this mountain stream rises and falls very quickly after rain in the hills. In

low water a lot of wading will have to be done; in high water the force of the current may make canoeing too risky. The ideal conditions are nearly always found when there is a middle water level.

Rocks on the bed of the river will have to be avoided by skilful paddling if they project above the surface of the stream. Some may be sharp and capable of holing a canoe; others may have become rounded by the ceaseless action of the water, thus they will be less likely to cause damage to your craft unless you collide with them when going fast.

Corners are often tricky. Here swirl-rapids occur. The current tends to eat into the banks causing eddies to form which swing a canoe off its course. The banks may overhang dangerously with trees and bushes projecting across part of the channel. No canoeist must allow himself to bump into dangling vegetation, for that means an almost certain capsize and the possibility of being trapped underwater by a tree's branches.

Fallen trees are another menace which need to be given a wide berth. Sometimes the trunk of one lies right across the river and you have to drag your canoe over it. Portage along the bank is often simpler. Extra care is necessary when several fallen trees lie fairly close together partially but not completely blocking the stream. If you concentrate on dodging one, you may fail to make proper allowance for the speedy current which washes you into the branches of another. To extract a waterlogged canoe from the branches of a tree is at the best of times a difficult salvage operation, so it is far healthier to keep clear of such things.

Sometimes underwater stakes are encountered. Either they once formed part of a weir or sluice or else they have been driven in to discourage net fishing. Whatever

the reason for their existence, they can be deadly if you run on them unexpectedly. They are hard to detect when they stick up to within an inch or two of the surface whether the current is slack or speedy.

Among other difficulties I might list bridges. Whenever these stretch across rivers, rapids may be formed underneath them owing to the narrowing of the river and the fact that its bed is usually at that point littered with masonry, bricks and rubble intended for the structure but not used. Remains of old bridges (frequently near the site of present ones) also cause rapids and it is as well to pass them circumspectly.

The biggest risk that a canoeist faces at a bridge is the possibility of being carried against the piers or supports and wrecked by the force of the water. A keen lookout must therefore be kept to avoid a disaster of this sort; especially is double vigilance necessary when a bridge sets awkwardly at a skew angle across the river or when flood conditions prevail. Always be certain there is ample headroom before you try to take a canoe under a bridge; and beware of the eddies that form round the pillars on the downstream side. In Britain these are seldom formidable, but on the Continent they can be a serious proposition.

A vital question that the novice who fancies having a go at rapid-shooting for the first time will ask is: 'How dangerous is it?[1] The answer must be that it depends largely on the individual. If proper safety precautions are taken and you do not attempt to canoe any part of a river that is beyond your capabilities, there is nothing to be feared. Of course, you do not Start learning rough-water technique alone—you accompany experienced canoeists on your first few trips.

It is an advantage to join a Club, such as the Man-

Chester Canoe Club, which specializes in exciting canoeing. Regular weekend meets are held at which beginners are encouraged to master the elements of rapid-shooting. Four or six persons comprise the ideal number in a party. That means mutual assistance is forthcoming whenever portages are necessary. In the rare event of a canoe becoming waterlogged and semi-sunk (with buoyancy bags fitted it should never disappear), several strong pairs of hands will soon recover it, whereas a solo canoeist might be unable to retrieve his craft after a mishap.

The safety precautions to which I referred a few sentences back primarily concern equipment. Light clothing is strongly advised in case you fall into the water. No gum boots must be worn—gym shoes or light walking shoes are normal footwear for canoeists. An approved style of lifebelt is vital although you can swim: there is always the chance of being knocked against a rock and rendered senseless. That has only to happen once to a canoeist not wearing a lifebelt for him to be drowned; or as the Chinese proverb expresses it: 'One leap of the tiger is enough'.

I class a spare paddle as a necessity and urge that it be kept handy lest you suddenly smash the one in use. Probably the spraycover is a canoeist's best friend when riding rapids. This must enclose the cockpit completely as waves may sweep right over the decks. It needs to be strong enough to withstand a weight of water descending upon it as canoes on rivers usually cut through waves because they are stationary, whereas sea waves are different and move forward so that canoes ride over their crests. But we shall come to the art of sea canoeing in another chapter. On rapid rivers a rudder is more of a hindrance than a help and should

most emphatically not be fitted: it is nothing more than a menace.

Opinions differ as to whether single- or double-seater canoes are preferable for negotiating rivers having rapids. It largely depends on the size of the river and the severity of the rapids. Personally, I plump for the single-seater owing to its greater manoeuvrability and the sense of freedom that it gives you. My conclusion is that a single person, unhampered by the necessity of paddling in harmony with a companion, is in a far better position to tackle the hazards and obstacles of a rough river than two people in a double-seater. The latter cannot turn quickly enough owing to its extra length, and its crew are at a disadvantage when split-second decisions have to be made and instant avoiding action taken.

I will admit that a two-seater is the steadier craft and a good boat for heavy rapids that are free from rocks and have no complications. Some expert canoeists do paddle in pairs, but the rivers they favour are wide enough to allow sufficient manoeuvring room. In these cases the man in the bows acts as a lookout and reports dangers ahead, while the rear occupant is the steersman responsible for swinging the craft to one side or the other of any obstacle that is approached. Both men do their share of paddling.

I have said that rudders are useless on rapid rivers. All steering is naturally done with the paddles, and in this connection it should be noted that back-paddling is supremely important. That is how a canoeist checks his momentum, enabling him to stop or reverse without turning round. It is often imperative to reduce speed suddenly to avoid hitting a snag. Back-paddling is the procedure to adopt.

During your first season on difficult rivers you will learn far more from actual experience than can be picked up from years of studying books. But no intelligent man would think of taking up a sport without reading something about it beforehand. In the case of canoeing a book is the ideal medium to explain what for want of a better word I will call the 'tricks', and these include the Ferry Glide.

This extremely useful accomplishment enables canoes to cross a river despite a strong current. The Secretary of the British Canoe Union describes it as 'an invaluable operation' and one of the first things a rapid shooter should learn is the Ferry Glide. The manoeuvre gets its name because the current is harnessed to move a canoe in the same way that it swings a Wire Ferry (like the one at Arley on the Severn) from bank to bank.

To learn the technique of the Ferry Glide is really simple once the reasons for it are plain. For the sake of illustration let us suppose that you are coming downstream on the left-hand side of a river. You round a bend to find a twin-arch bridge just ahead. A fallen tree blocks one arch, and you must therefore move adroitly over to the far bank in order to get into position for going through the unobstructed span of the bridge. In the ordinary way you would have had plenty of time to alter course and just paddle forward towards the arch that you proposed to negotiate; but here, owing to the fast current and other circumstances, you must Ferry Glide.

First you back-paddle until you are not moving up or down the river. Then your stern has to be swung into the current by backing with the left paddle so that the craft is slewed diagonally at the correct angle to the current. The latter will act upon the rear part of the

canoe (pointing upstream, of course) and try to force it downstream. But you prevent this happening by paddling energetically with both paddles backwards.

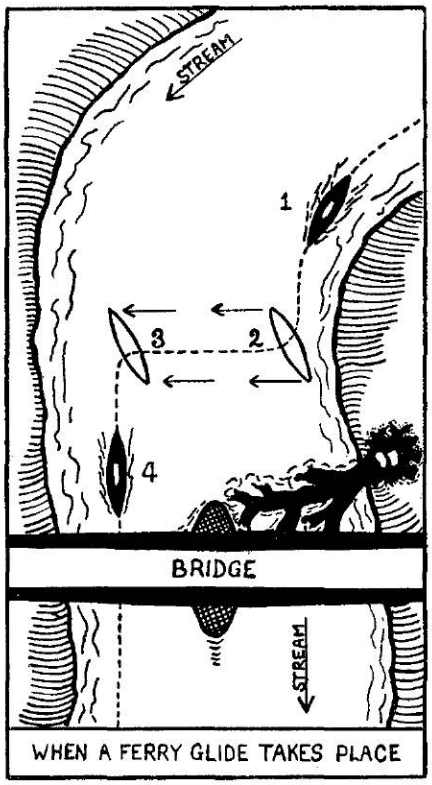


Fig. 4 *Ferry Glide*

You take care to make stronger strokes with the right paddle to maintain the angle that the canoe is making with the current. You will then be drifted across the river in the required direction which is towards the

opposite bank. On reaching the desired position, all you have to do to come out of the Ferry Glide is to paddle forward with the left paddle or back with the right paddle to turn the craft until it floats parallel with the current.

Of course, the Ferry Glide can equally well be accomplished when a canoeist faces upstream; and to return across the river is merely a matter of putting the canoe's head or stern as the case may be in the other direction and making the more powerful strokes with the opposite paddles. In this manner a canoe can be steered sideways in waltz fashion while you are inspecting an obstruction in the channel ahead or getting into line for avoiding it.

The angle with the current which the canoe should make varies. The rule is the stronger the current, the finer the angle. Once proficiency in Ferry Gliding has been acquired it is never lost, for the art becomes as instinctive as a reflex action. It is one of the canoeist's most useful 'tricks'.

When a difficult river is being tackled, it is usual for the most experienced member of the party to go first, the rest following in single file at suitable intervals. On coming to a rapid—if it is a bad one—everyone will stop to prospect it. Perhaps they will walk some distance along the bank to make mental notes of the positions of rocks which may constitute a potential menace and be likely to cause a capsize. This preliminary examination of a stretch of river should never be hurried.

If the rapid is straightforward and presents no difficulties, the canoes may not stop. Instead, they pause to watch the first man go down it. Then they shoot the rapid in turn, each following the course set by the leader. It is customary for all craft to wait at the foot

of a rapid or a bit further downstream until the last man has descended the rapid in safety. It is not canoeing etiquette to shoot a rapid at the same time as another fellow, nor is it a very safe action: for by doing that you might force him into an unsafe channel or cause a collision to occur.

The main point to watch in riding rapids is to keep the canoe traveling faster than the current as a general rule. This makes steering easier and means there is less chance of being swept broadside to the waves, which may be of considerable height. But in shallow or rocky rivers it is preferable to go more slowly than the current in case of running aground or hitting rocks. You can nearly always keep clear of snags by using the Ferry Glide as an alternative to steering by forward paddling.

Sometimes you come to a rapid too difficult or dangerous to be shot. If portage along the bank is impracticable—perhaps the river at this point flows through a steep-sided gorge—then you have to resort to 'lining down', which means that you hold the tow-line and let the craft drift down on its own. To do this instead of shooting a rapid is not a confession of failure: it is being sensible when circumstances warrant such a course of action.

The newcomer to canoeing who likes excitement need have no fear when shooting weirs provided he is fore-warned about the risks. But I hesitate to recommend this pastime for totally inexperienced canoeists—it is a branch of the sport to go in for once rapid-shooting ability has been perfected.

The approach to a weir is indicated by deep water and a slack current, with clouds of spray usually rising above the actual drop. A muffled roar—rather awe-inspiring if you are not familiar with the river—is

another indication that a weir lies ahead. As a proper inspection of a weir cannot be made from the cockpit of a canoe, it is necessary to land and look to see whether any shooting can be done.

Many weirs are perpendicular, which rules out any possibility of shooting them. Those that slope gradually, provided there is sufficient depth of water, often can be shot. But you must make certain that no snags exist. These may take the form of stakes (wooden or iron), broken pieces of concrete, small tree-trunks or boughs of branches caught on the weir. An important consideration should always be the character of the river below the weir. It would obviously be folly to come down a weir, no matter how safe it was to do so, if a difficult obstacle or a tricky rapid lay a short distance ahead. Nor do you paddle your canoe to the brink of a weir to try and view it from above. The risk of being swept over is great.

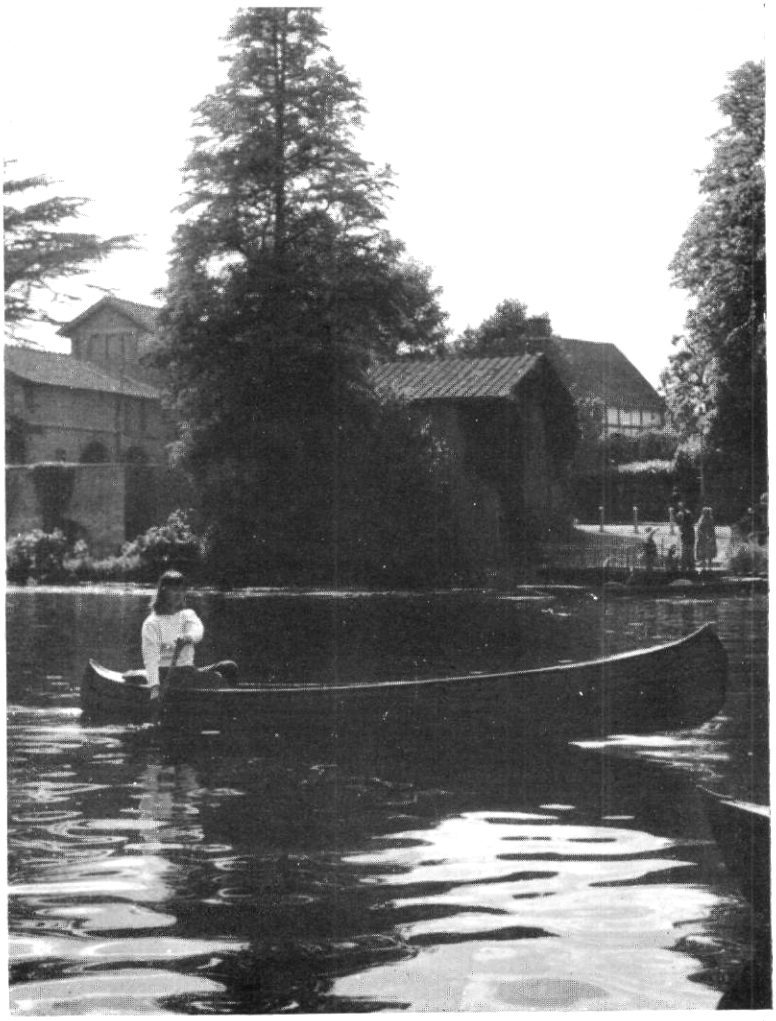
Having ascertained that a weir is shootable, you must then decide if a particular part of it looks easier than another. The depth over the sill often varies on left and right. Let me say something now about the actual 'run in' during which you should beware of getting entangled in angler's lines!

Normally you steer your canoe towards the centre of a weir owing to the menace of branches overhanging the stream near either bank. Increase speed until the craft is going faster than the current thus lessening the likelihood of going broadside-on over the top! This also ensures that quick manoeuvres can be carried out in the eddying whirlpool below. The aim of a weir-shooter should always be to get well clear of the weir as soon as possible. The surge of cross-currents and whirlpools in the frothy 'boil' below the drop have before now been

(HUGH ALDRED)

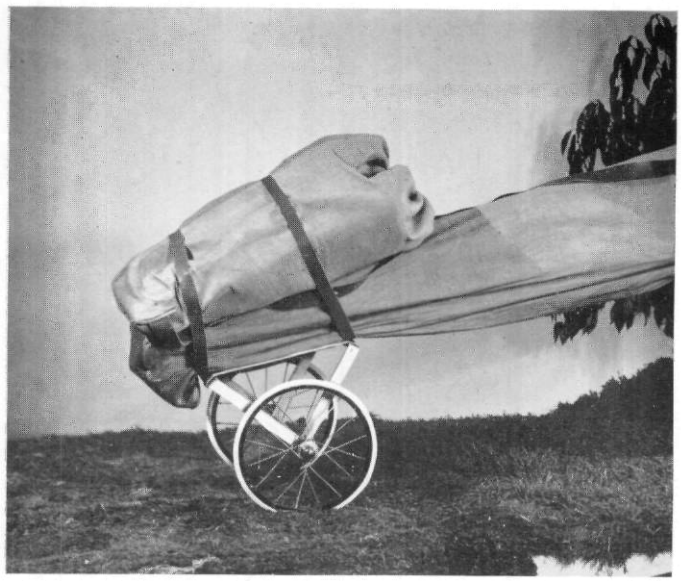
1. *Right between the rocks!*

2. Weekend canoeists visiting the Teme (ELWIN SAPCOTE)



(FRANK PAGE)

3. *Nowadays a Canadian canoe is a rarity*



(GRANTA FOLDING BOATS)

4. Packed into two bags, a folding canoe can be easily transported on a trolley.

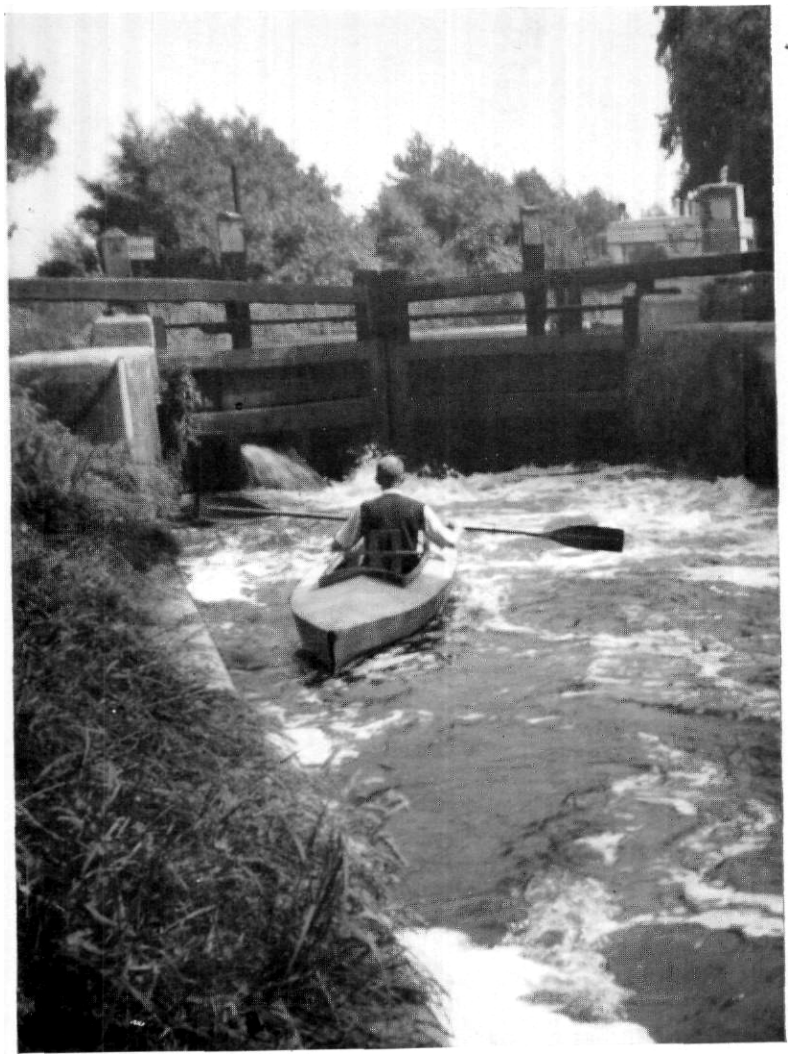
(JOHN BULL)

5. *Assembly of a folding canoe takes about half-an-hour*

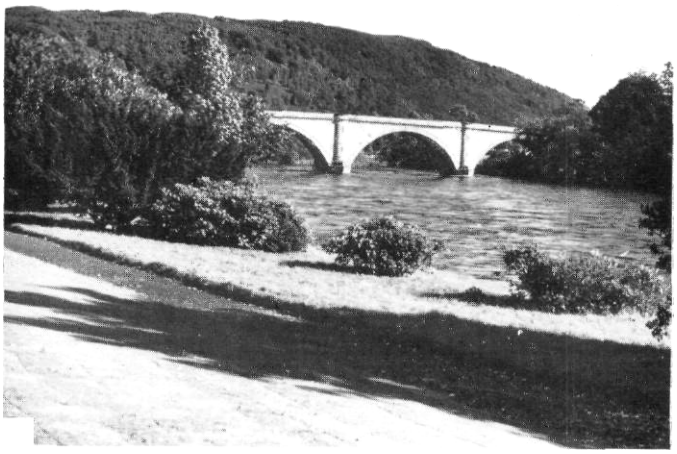
(P. \V. BI.AN'ni'ORI))

6. *Beginners ready to set off in their PBK craft*

7. The author's wife launching on the Kennel and Avon Canal near Newbury, Berkshire

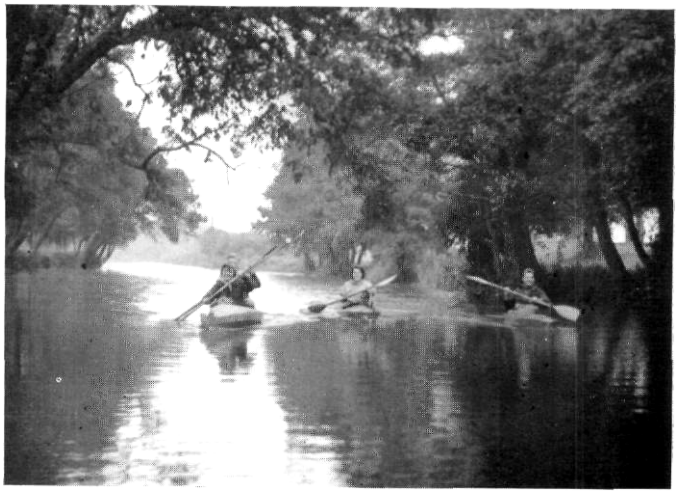


8. *Going, through a lock takes nearly ten minutes*



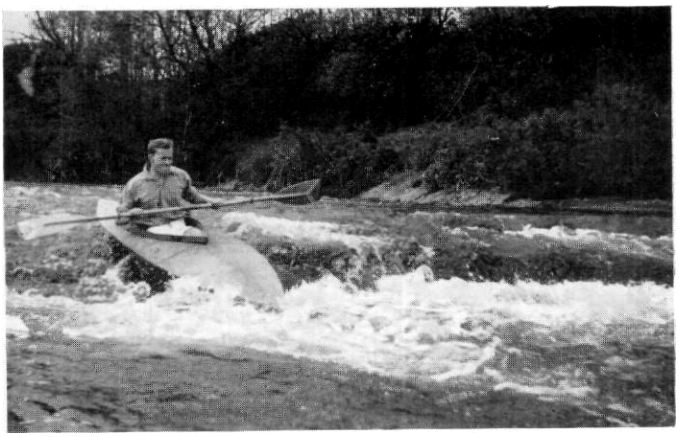
(SCOTTISH TOURIST BOARD)

9. *One of Britain's best* ***canoeable*** *rivers is the Tay, here seen flowing under Dunkeld Bridge, Perthshire*



(CYRIL COOPER)

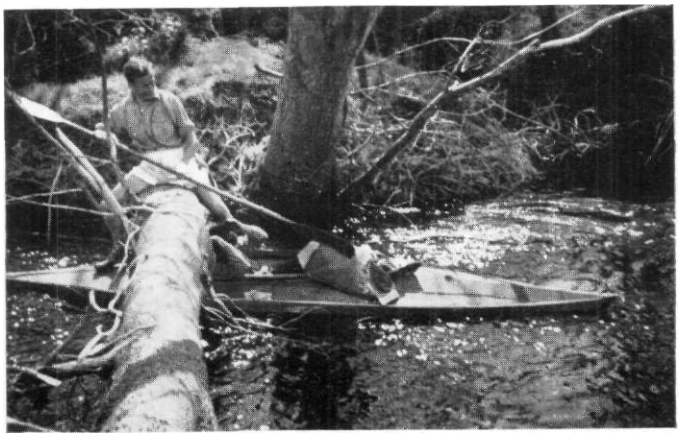
10. *Full speed ahead up the Bedford Ouse, among the longest and pleasantest waterways in the country*



(JOHN **SOULSBY)**

11 & 12. *A minor rapid and a fallen tree provide unexpected hazards for these explorers of small streams*

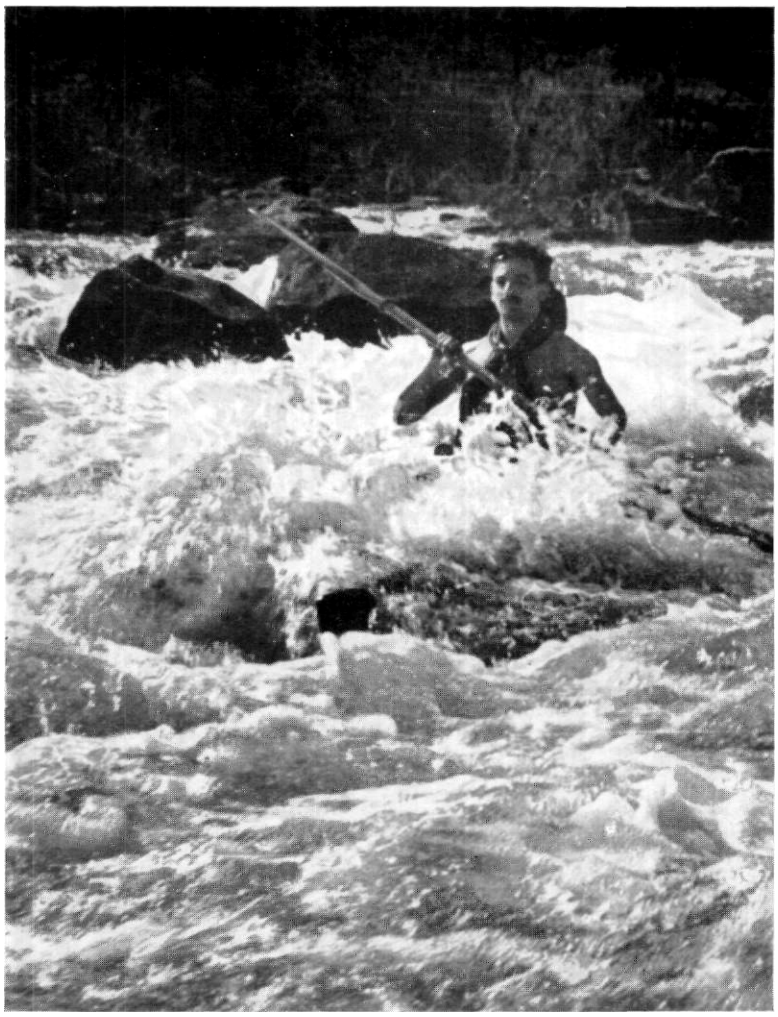
(JOHN SOULSBY)



(HUGH ALDRED)

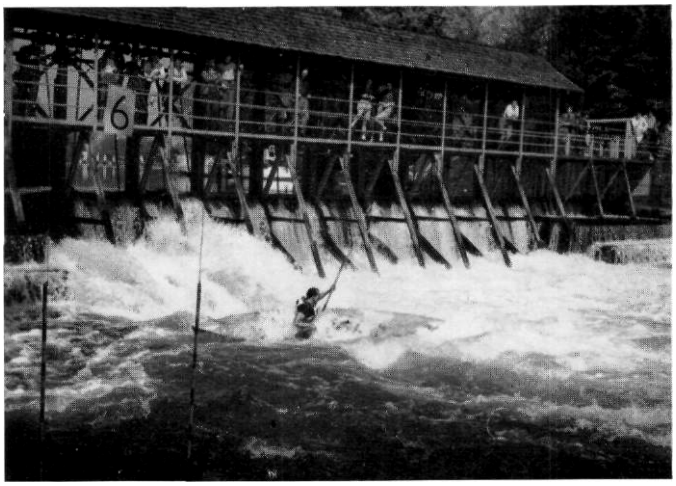
13. *Shooting a sporting rapid on the Scottish Dee near* ***Dinnet in Aberdeenshire***

14. *Lining down a weir across the Lugg, a tributary of the Wye*



(BERNARD SEAGER)

15. *Hack Fall on Yorkshire's Ure is a stern test even for expert 'white water' enthusiasts*

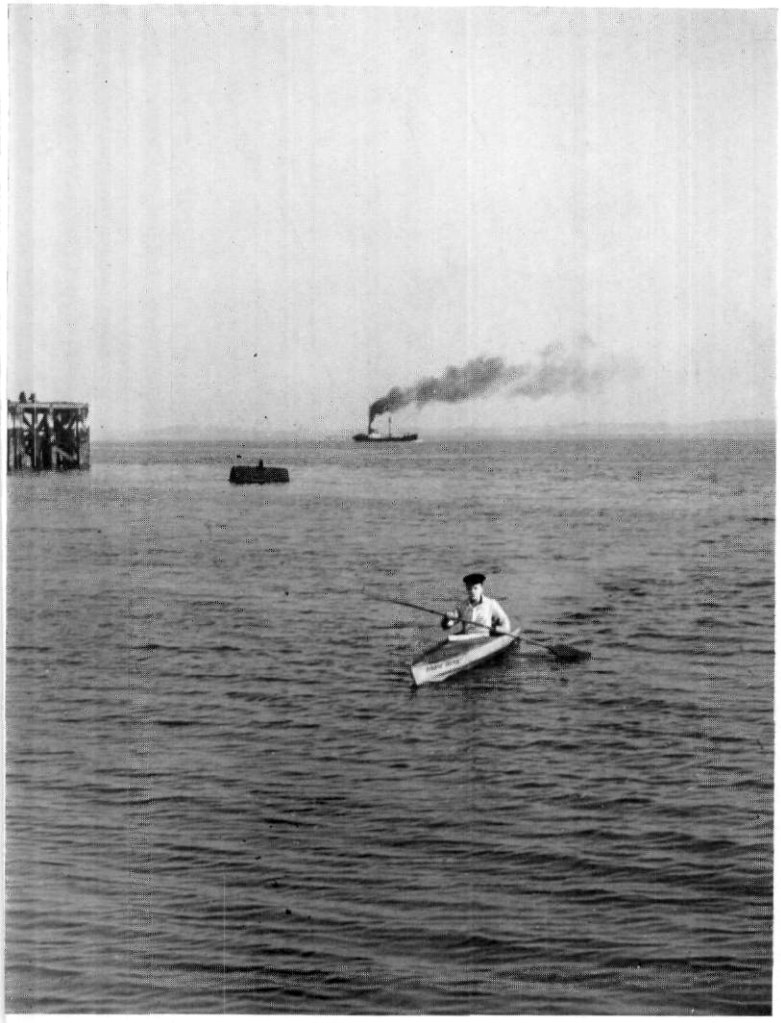


(DAILY MIRROR)

16. ***This*** *competitor shows his skill in a slalom at,* ***Shepperton*** *Weir on the Thames*

(P. W. BLANDFORD)

17. *At Buillh where the Upper Wye is turbulent a tough slalom course provides plenty of thrills*

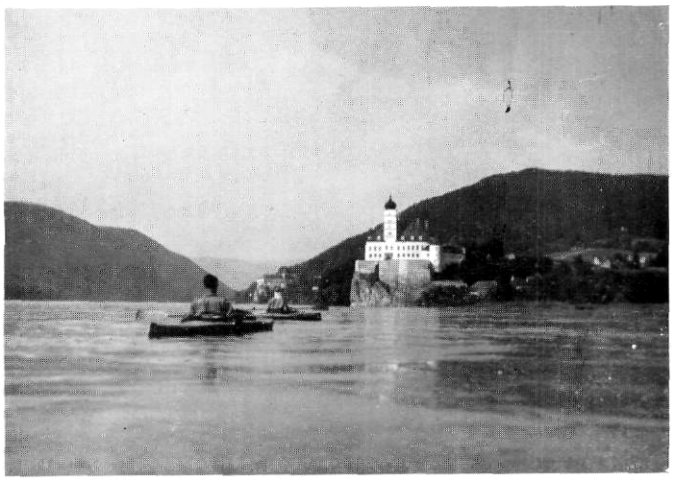


(JOHN BULL)

18. *Coastal canoeing is fun during fine weather*

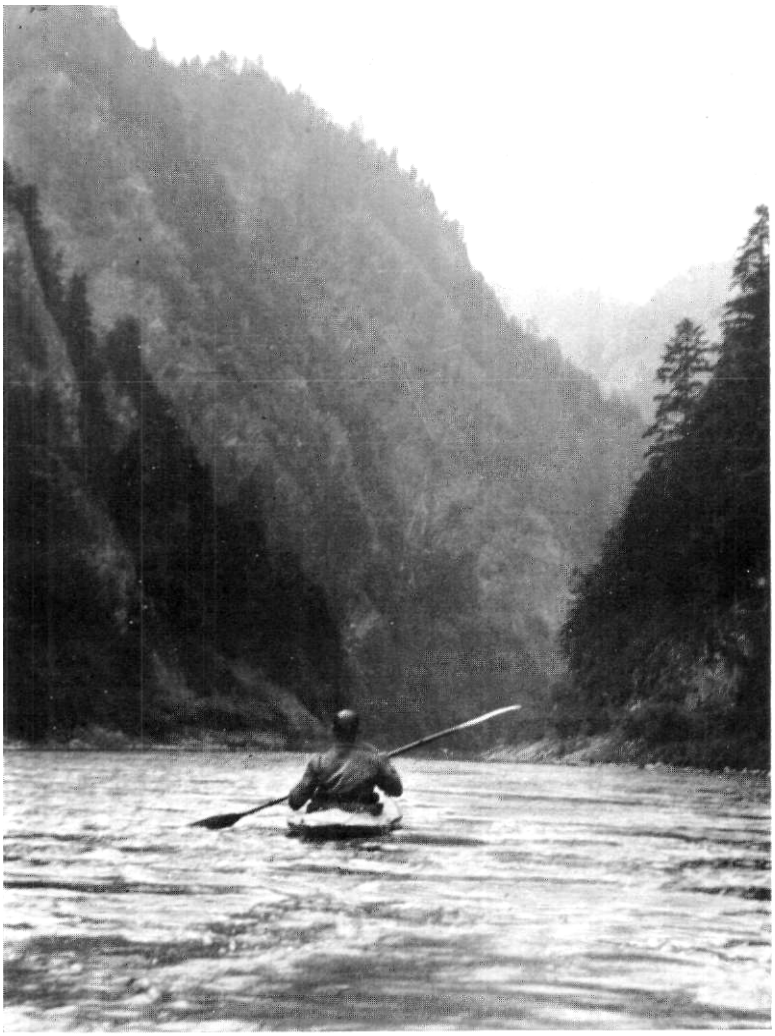
(JOHN BULL)

19. *Practicing before a Channel* ***trip***



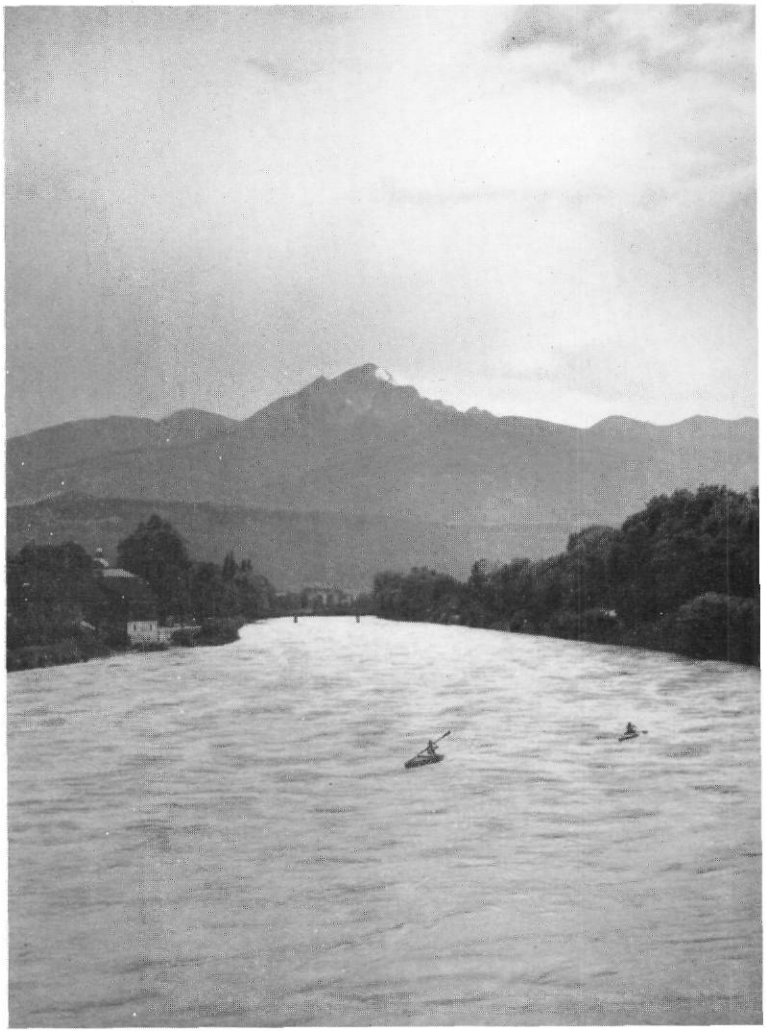
(DON WELSH)

20. *Drifting down the Danube between Linz and Vienna*



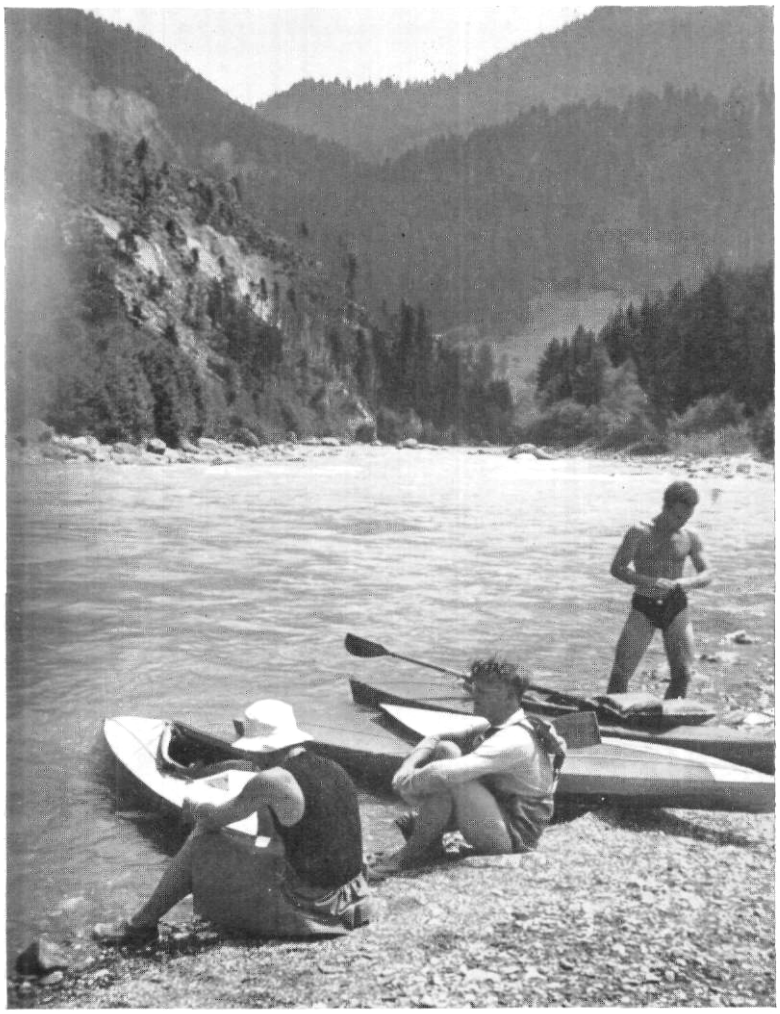
(CYRIL CO(

21. *Paddling in Poland on the Donajec*



(CYRIL COOPER)

22. *Here British canoeists come through Innsbruck on the Inn*



(BERNARD SEAGER)

23. *Manchester Canoe Club members resting in a gorge beside the Vorder Rhein in the Swiss Alps*

(JOHN SOULSBY)

24. *A stretch of water typical of the Upper Wye and Severn*

known to upset a canoeist who has successfully negotiated the weir itself.

Weirs are of several kinds: those built in a series of steps or ledges can seldom be shot. Some shootable weirs are V-shaped or horseshoe-shaped; others run directly from bank to bank or span the river at an oblique angle. Many have cuts in them to enable fish to ascend to the higher parts of the river. In these cases a splendid deep channel down the weir is provided for canoes. I am not alone in saying that the pleasure of a day's canoeing is increased by shooting all possible weirs.

Britain's best-known rapids are not numerous. In a dry summer several cannot be shot so easily as they can be in spring, when rivers are generally carrying plenty of water. The conquest of certain ones is a feather in any canoeist's cap.

The Upper Wye is rough and possesses the Erwood rapids which extend for three-quarters of a mile. But Monnington Falls, 13 miles before Hereford is reached, are more famous yet less tricky. An island divides the channel and canoes have to plunge over a rocky ledge and perhaps dodge overhanging trees. Approximately 50 miles further on you come to a deep and safe rapid at Symonds Yat. Sometimes this has quite big waves and is very fast.

In South Wales the rivers Usk and Teifi have many rapids. Those at Llangynidr on the former are so sporting that a slalom was held there not long ago. Teifi is unusual in that its main rapids occur on the middle and lower part of the river. The best are at Llanllwni and Llandyssul and it is a beautiful valley. What a pity Usk and Teifi are too far to be visited regularly at weekends by Londoners.

Another Welsh river, the Dee, which flows from Bala Lake to Chester, is well endowed with rapids. The principal ones are located at Garrog, Upper Plas Berwyn, Lower Plas Berwyn, Llangollen, Cefh, Trevor Rocks and Tymaen Island.

The Severn is not noted for particular rapids except those at Ironbridge which have become easier in recent years and look very tame nowadays. Here a stretch of two miles has a fast current and high waves are formed in times of flood by water rebounding off slag heaps which run down to the river.

Yorkshire's Ure should certainly be 'done' by rough-water canoeists, since it proves interesting. Hack Fall ranks as a classic rapid. It is situated on a double bend of the river 3 miles below Masham Bridge and 4 miles above West Tanfield. There is a ledge at the top of the fall down which it is prudent to wade so that you can get a straight run through the rest of the rapid with less risk of a ducking. The accompanying photograph will give a better idea of what Hack Fall is like than any description of mine.

Still in the North of England, I must not omit to catalogue the Nunnery Rapids on the Cumberland Eden. These lie within the 4 miles immediately below Kirkoswald and comprise about seventeen different rapids of varying degrees of difficulty. The Eden's bed is here scattered with rocks and boulders and easy channels do not exist. The scenery is very fine and it would be a pity to miss these exciting miles by taking the train from Kirkoswald to Armathwaite to avoid the Nunnery Rapids. In the magnificent Wetheral gorge more rapids occur, but they are comparatively minor ones.

Of Scottish rivers, some certainly do not lack rapids.

The severest along the Tweed is found 30 miles above Berwick—Lower Makerston Rapid—which is rather perilous and should be portaged. Again, at Killin on the Dochart, the falls are uncanoeable.

Spey and Tay are renowned rapid rivers, on each of which a week may well be spent. Scotland's fastest river is the Spey, whose course between Ballindalloch and Aberlour is characterized by continuous heavy rapids. Coming as it does from the Cairngorms, Spey always carries a fair volume of water, due to snow melting in the mountains as well as rainfall. Both the Knockando and the Craigellachie Rapids will satisfy anyone in search of really rough water!

Tay is a less tumultuous river, but it can make canoes lurch and bounce through its rapids. It is best not to shoot the dangerous ones at Grantully, but all down beyond Dunkeld grand sport can be had. Campsie Linn is more a fall than a rapid, being caused by a dolerite dyke projecting from bank to bank. Anyway, it is exciting to shoot this obstacle. Tay's *piece de resistance* is the Thistlebrig Rapid, 7 miles short of Perth. Exactly a mile before this hazard is Hell Hole Corner, where a veritable maelstrom of waves compels the canoeist to concentrate on keeping upright.

These various rapids that I have mentioned are by no means all that exist in Britain; but lack of space prevents writing of others. You will enjoy hunting up references to the rest in old canoeing books.

The Sport of Slalom

THE word 'slalom' is a term used in skiing, but has been taken by canoeists to describe a form of competitive canoeing which involves negotiating a pre-arranged course having either natural or artificial obstacles, or both. Slaloms are international, national or local events. Before going into details I think it might be interesting to survey them from a historical angle, to indicate where they have been held and to show how they increased in popularity after the war.

In 1934 Swiss and Austrian canoeists introduced kayak slalom when they organized their first championship. Two years later the International Canoe Federation appointed a committee to draw up rules for slalom, the new sport, and the year 1937 saw the first International taking place.

The 'father' of slalom was F. Brunner, an Austrian who still takes an active part in this form of recreation. He laid out a course along a straight stretch of water with poles fixed into the bed of the river to form obstacles which the contestants had to avoid by skilfully manoeuvring their craft to weave in and out of the so-called 'gates' formed by the poles.

Since 1937 slaloms have been regularly held in Austria and in various other countries including, France, Germany, Belgium, Italy and Yugoslavia. Naturally the war caused a cessation of activities, but it is surprising that not until 1954 did slalom start in the United States, when the first event was held at Brandywine Creek, near Wilmington, Delaware.

Twenty craft competed but with gates 16-feet wide and hardly any current, the course must have been easy compared to Continental standards. It is believed that a German slalom enthusiast has recently gone to North America to teach the proper methods of slalom to canoeing people there.

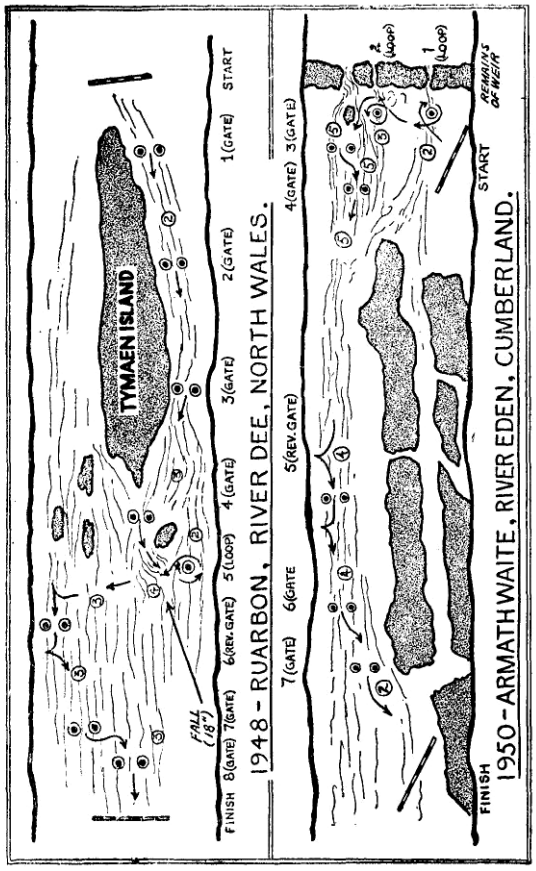
Turning to Britain, we introduced the sport of slalom in 1939 to canoeists who assembled on the banks of the Welsh Dee near Llangollen for our first National kayak slalom. So successful was this that a second National was held the following year on the River Teme in Ludlow. After the war interest was revived with events in 1947 on the Tay above Perth and in 1948 on the Welsh Dee at Tymaen Island. The following table will show the venues of later fixtures:

195°	River	Eden	at	Armathwaite land.
I95[1]	River	Usk	"	Llangynidr, Brecon.
1952	River	Wye	"	Builth, Brecon.
1953	River	Eden	"	Armathwaite, land.
[J]954	River	Thames	"	Henley, Oxon.
1955	River	Tees	"	Barnard

All post-war slaloms have usually had up to fifty entrants including women, who are generally allowed to miss the most difficult hazards and follow a shorter course. In Britain slalom courses have from eight to twelve gates, whereas those on the Continent (being laid out primarily for speed rather than skill) normally have around twenty gates. These are spread over a distance of between 300 and 800 metres.

The best type of slalom course is that on a natural river, fast-flowing, with rocks and rapids as sporting

hazards. Unfortunately England has few suitable places because her mountain rivers are relatively small and become very low in summer. But slaloms may



FIGS. 5*a* and *b* (page 87). Sketch maps of typical slalom courses.

equally well be held below weirs or sluices on fairly sluggish rivers. Most local slaloms take place on these weir-type courses, and those on the Thames are well

attended, being particularly easy of access for Londoners. Every April the Canoe Fellowship holds its slalom

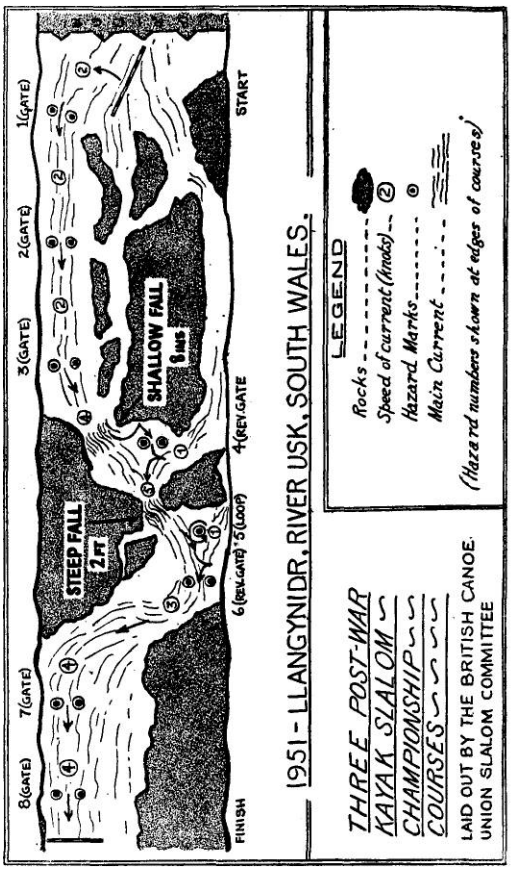


Fig. 5b.

at Shepperton weir and the adjacent island provides an ideal camping site; while Marsh Lock (Henley) weir, or rather the water below it, is also available for

canoeists by courtesy of the Thames Conservancy. Here several Clubs carry out their annual events. Nowadays more than a dozen slaloms are held every year in Britain, including one near Perth on a very sporting part of the River Tay.

In a moment I am going to refer to a typical course below a weir, the method of scoring and hints to competitors. But first the importance of safety precautions must be stressed. Lifebelts are necessary together with buoyancy bags in the canoe. Slalom organizers must ensure that a rescue boat is always manned and ready to go to the help of anyone capsizing. Being upset is really part of the fun! If this happens to you the golden rule is to cling on to the upturned boat until picked up; the bank may be quite near but a strong current below a weir will probably prevent you swimming to it. Always fit efficient towlines to your craft before a slalom so that rescuers may easily catch hold of it and bring it to the bank.

The first diagram indicates the manner in which the poles or staves are arranged, hanging from ropes suspended above the water to form gates or obstacles requiring loops or turns to be made round them. The second diagram shows different ways of setting the poles to add variety to the course. Floating buoys are sometimes utilized instead of hanging poles; or both buoys and poles can be laid out on the same course.

Contestants, needless to say, use single-seaters, and for identification purposes each man wears a number on his back. Only one person is allowed on the course at once, and the winner is he who completes the run in the best time. Times are reckoned in seconds, penalty seconds being added for touching any gates—15 for hitting one pole; 30 for hitting both poles at the same

gate; 100 for missing a gate altogether. You are allowed, however, to bump a gate other than the one you are actually negotiating without incurring a penalty. Umpires are stationed on both banks to watch

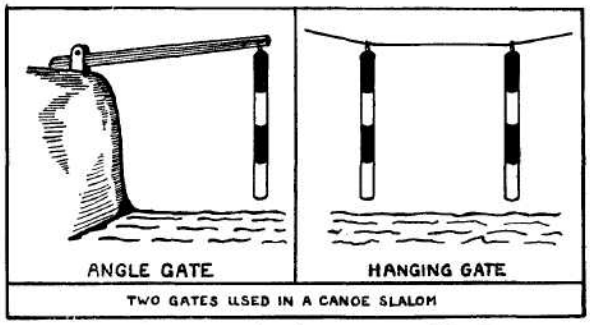


Fig. 6. *How a 'gate' appears to a slalomist*

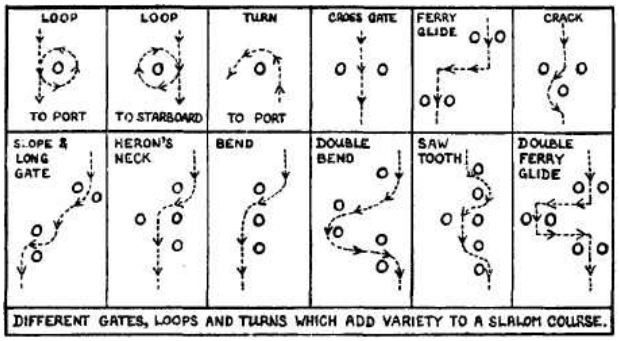


Fig. 7. *'Gates', loops and turns*

for penalties, and they communicate with the scorer by flag or whistle.

One obstacle worthy of special mention is the 'barrier' sometimes positioned quite close to the foot of

a weir. This comprises a line of hanging poles—perhaps four or six—and you have to pass above them through the churning water that has just come over the weir and cross from one side of the river to the other.

Occasionally team races have been held in Britain with several canoes on the course simultaneously, and audiences seem to like this variation of a slalom event. If one member of a team should capsize, then his team is immediately disqualified in the same way that an individual slalomist who overturns is disqualified on that particular run. But anyone may continue if they can come upright by means of an Eskimo roll. At British slaloms competitors have two runs each if time permits, and they count their better one only for scoring. At the end of each season a ranking list is published and by this means a careful check is kept on the year-to-year progress of those who are likely to prove good enough to represent us in World championships.

It will be apparent that both strength and skill are needed for successful slaloming. Strength to battle against a racing current and to negotiate foam-flecked surging waves below weir or sluice; skill to zig-zag across eddies and whirlpools and to pass cleanly between gates little wider than the beam of a canoe. So you must be perfectly fit for this sort of recreation and very experienced if you want to win. In other words, so keen have present-day canoeists become on slalom that you have little chance of winning unless you devote most weekends to practicing.

If you have done a lot of touring along rough-water rivers you will have gained much experience of the technique necessary for the sport of slalom. You will know how to make split-second decisions in fast water; how to accelerate quickly; how to control your craft by

back-paddling; the art of balancing in the cockpit without overturning; and, most important of all, you will have acquired the ability to use the ferry glide movement for crossing the current obliquely without being swept downstream out of control.

A new international rule now disqualifies competitors who capsize and leave their boats. But at some British events anyone able to climb back into the cockpit unaided within, say, 30 seconds, may be permitted to continue. Several canoeists have capsized during slaloms and managed to come to the surface without leaving their craft by Eskimo rolling—a useful accomplishment. There is an excellent instructional film on this subject owned by the British Canoe Union.

There are three types of roll—the Screw, Pawlata and Put Across. Any one of these can soon be learnt at winter classes held in swimming baths up and down the country. The Put Across is really only suitable for calm water, since a strong current will most likely sweep the paddle out of position when you start the stroke. More difficult to learn is the Pawlata, but this method gives you good leverage and enables quite heavy canoes to be rolled. I recommend, however, the Screw, generally the hardest to perfect. Its main advantage is that this kind of roll is best for rough water, since your hands stay on the paddle-shaft in the normal position so that when you have rolled up to the surface you can carry on canoeing straight away.

Regarding equipment, there is the spraycover or auxiliary deck as it is sometimes called. This is not always vital for a slalom if the course is easy. My remarks on spraycovers elsewhere in this book apply in cases where they are necessary to prevent the canoe being swamped. As no gear is carried when

slaloming, the only other item requiring comment is the paddle.

Ideally, a short, light and unbreakable paddle is the one to obtain—if you can. Personally, I would never use anything but a wooden paddle. Frenchmen have been trying out all-aluminum paddles, but they are too cold in the hands and they make an ugly, 'tinny' sound when striking a rock. I did hear of a London canoeist who constructed a 5-foot long aluminum alloy paddle from a 1 1/4-inch diameter tube. He fixed resin-bonded plywood blades 3/16th inch thick and *flat both sides* because, he maintained, you spend almost as much time going backwards as you do going forwards whilst in a slalom.

Of prime importance is the type of boat recommended for slalom. Preference nowadays seems to be for home-made folding models which must be built primarily for speed and maneuverability. Unfortunately, in the matter of canoe design, the longer and narrower the craft the faster it will be; but at the same time it must be remembered that the shorter and wider (within limits) it is, the easier it will be to maneuver. Therefore a compromise has to be effected, with the object of constructing the fastest boat consistent with reasonable maneuverability yet without sacrificing stability, another vital consideration.

Fish form design (i.e. with the broadest part of the canoe in front of the centre-line) has much to commend it, notably the fact that craft built to this specification are definitely faster than those embodying Swedish or other designs. Whatever plan is adopted, it should not be forgotten that the maximum weight of a slalom boat must be restricted to 40 lb., otherwise you cannot get proper acceleration on the course. But here we must

leave this extremely interesting but highly technical subject of canoe design.

At this juncture it might be convenient to give a list of ten tips for slalomists:

(1) On no account fit a rudder to a slalom boat.
(2) Ensure your spraycover is efficient. Fix it properly so that it will not be stove in by big waves below weirs.
(3) Elaborate dieting is quite unnecessary, but a sensible rule is 'No beer the night before'.
(4) Practise the art of slalom often but never alone in case of an accident: you might be trapped under water. Incidentally, no fatal mishaps have ever occurred in British slaloms.
(5) Always be ready ten minutes before your turn. If those in front of you capsize, you will be required sooner than you expected.
(6) Keep your grips firm. Hands on paddle; feet on cross-frame; knees against lower side of deck and cock pit coaming.
(7) Never underestimate the power of cross-currents and confused eddies. Make full allowance for them after a careful preliminary survey from the bank.
(8) You will often save time by ferry gliding backwards as well as forwards. Seize your opportunities.
(9) Do not sacrifice speed by tackling the gates too carefully in attempts to avoid penalties at all costs. It may be better to put on an extra spurt for a section of the course even if it means having a penalty or two which need not have been incurred.
(10) Remember to master recovery strokes with the paddle which will bring you back upright if you heel over so that your gunwale goes under water. One is the Screw Roll finishing stroke.

In addition to the above points, you will find it advantageous to practise the Telemark Turn, a stunt trick for changing direction suddenly without the necessity of going through a normal full-turning circle. You work up some speed, fling yourself over sideways and steer the boat through an arc of the requisite number of degrees before righting yourself by manipulating the paddle. Remember to keep the angle of the blade as nearly flat as possible. Always telemark towards the flow of the stream and not away from it when approaching against the current.

Now I come back to International slaloms to say a few words about those held in recent years. Their importance can be judged by the fact that in 1952 at Lippstadt 113 competitors took part, being watched by a gallery of spectators numbering 10,000 who had assembled to shout and cheer at the cream of Europe's crack canoeists displaying their skill.

At Steyr in Austria during 1951 the course proved extremely tricky with numerous gates, all of which were difficult because of exceptionally fast water. In fact, so terrific was the surge of water down the weir on the first day that two kayaks looped the loop and three others broke their backs. That competition had to be postponed until the following day when luckily the rate of flow of the water had lessened to make shooting the weir not so dangerous.

The year 1953 saw world slalomists congregating at Merano in Italy for the next big event. Here the course was voted easier than a normal world championship course although the River Passirio did run quite strongly. The absence of a weir was a relief to the British team and they improved on previous performances. They were actually 8th in order of merit

out of ten nations competing, which does, I think, still leave room for improvement!

The Merano course extended over half a mile of the river. Upstream paddling sometimes proved awkward because of rocks protruding above the surface, due to the low water level prevailing. No fewer than fifty poles and staves were suspended above the water to form nineteen different obstacles, but some of these were 'multiple' gates—in other words, they had to be negotiated twice.

At Tacen, Yugoslavia, the 1955 World Championships were held on the River Sava. The 650-yards-long course was of the weir type and a nearby power-station could regulate the flow of water according to requirements. West Germany won the team event; while the women's competition was won by a contingent from East Germany. For the first time in an International Slalom Britain sent women to take part. The performance of Heather Meakin, although she only came 14th, reflected great credit because of her fast time on unfamiliar water. Mary Farrant also did extremely well. Among the men, Britain's representatives took 26th, 31st and 34th places. But it proved a good match and splendid training for our lads, whom we hope to see work their way up to first places in the World Championships of the future.

Sea and Coastal Cruising

SEA canoeing is certainly a satisfactory mod; of progress, whether the aim is business or pleasure. In warfare canoes have made history by reconnoitering enemy coasts and attacking cargo ships with limpet mines. They were employed in the European, Mediterranean and Pacific theatres of the last war, notably in the Royal Marines' raid on German vessels at Bordeaux (see the film *Cockleshell Heroes),* the North African landings and for penetrating Japanese-held harbours. In peacetime they have been brought into use commercially for a number of purposes. They have proved very suitable craft for bridge inspection in estuaries, and have been utilized for coastal surveys in Arctic regions.

We are, however, here concerned with sea canoeing as a hobby and recreation, and there are surely few others as exciting. The technique can be mastered in a remarkably short space of time provided that considerable experience on rough-water rivers has been gained beforehand. This is not only highly desirable but definitely essential for safety reasons.

I make no apology for emphasizing early in this chapter, perhaps at greater length then you think is really necessary, the vital importance of taking care. I say in all seriousness that to neglect any of the precautions to which I am about to refer might have fatal consequences. You cannot afford to make even one serious mistake.

Without wishing to tack too much gloom on to my warnings, I feel I cannot do better than quote from a

newspaper report pasted in my press cuttings book: 'About a mile off shore the canoe capsized. ... Great sympathy is felt for the young bereaved wife'. Those seventeen words will not have been quoted irrelevantly if they serve to make novices understand that it is a fact and not an opinion that sea canoeing always has its risks. In good weather and with proper safeguards you can confidently go ahead; but to attempt to carry out a pre-arranged programme in unsettled conditions may be suicidal folly.

The ability to swim is obviously necessary. Good health is equally essential, for coastal work is very hard at times, especially when you are battling against turbulent waves for hours at a stretch or pulling against the tide—both things you try to avoid!

First, an important question arises: 'What size canoe shall I adopt for sea canoeing ?' Now some experts may not agree, but I prefer a single-seater every time, because a larger craft would become too unwieldy in adverse conditions. Nevertheless, in fine weather many people prefer two-seaters, partly because they feel steadier in them, and partly for company's sake. With two canoeists in the same canoe on the sea a rudder becomes an absolute necessity. In the absence of one steering will be extremely awkward, since cross-winds have an annoying tendency to keep swinging in the wrong direction any canoe over 16 feet long.

Whilst referring to the choice of size of canoes, I feel it is vital to draw attention to a practice that cannot be too strongly condemned. I refer to those who cross open stretches of water with two in a single-seater or three in a double-seater. This method of sea canoeing is blameworthy in the highest degree and must be

stamped out. An extra person obstructs the cockpit space so that it may be impossible for anyone to get out of the craft if it goes upside-down.

After ten years of varied experiences up and down much of Britain's 5,000-mile coastline, I can confidently say that an ideal craft is a 15-foot single with a beam of about 26 inches. As explained in Chapter 2, this size is the most popular for river as well as sea canoeing. Its manoeuvrability is one of its many advantages; its speed, another.

A serviceable spraycover fitting round the waist will keep the cockpit practically watertight and give protection against rain. This canvas covering, by the way, must be instantly releasable in case of emergency and it is usual to secure it with press-studs with this in view. In the absence of a rudder—not essential for small canoes—a useful device to counteract the effect of wind is a 20-foot line trailing astern to act as a drogue or floating sea anchor. When the wind is abaft the beam, such a line will reduce yawing and prove a sound investment.

The main requirements of the sea canoeist who wants to be more ambitious than just hopping from beach to beach are as follows: a whistle should be carried so that help may more easily be summoned if needed; inflated bladders or lifebelts stowed under the decks (particularly at bow and stern) will provide buoyancy in case of capsize; distress flares (in a watertight tin) are recommended—they cost a shilling or two each and burn with a brilliant red light.

A compass is vital for extended cruising and fits conveniently into your belt or a special wriststrap. I always carry two compasses lest one fails to work; and I find the luminous type useful for night touring,

which is occasionally practicable in calm weather. The real value of a compass is apparent when you are navigating in poor visibility. You do not, of course, set out in fog, but it may descend suddenly and catch you unawares.

A spare paddle is a definite asset since the one being used may break in half. This mishap has twice happened to me through the wood rotting. Each time I should have been in serious difficulty had I not taken care to duplicate what is obviously the most important item of equipment. Expert canoeists as well as raw novices should invariably lash their paddles to the cross-frames of their craft to prevent loss overboard in squalls. After experimenting with various kinds, you will probably decide that a fairly heavy one is preferable. The point to bear in mind is that a lightweight paddle has a greater chance of breaking in heavy seas (its handle or loom is generally pretty thin), and the wind may tear it out of your grasp more easily than it would a heavier paddle.

Opinions differ about the usefulness of a bailer. Theoretically it is handy to possess one, but in a rough sea when you might be shipping water it would be impossible to use it—all your efforts would be needed to paddle and remain upright. If you do wish to carry a bailer, then a sponge is just as efficient as any sort of can and is far easier to pack.

Coloured clothing, bright yellow, for example, makes you more conspicuous and therefore increases your chances of rescue should you wish to be picked up when engaged on some such hazard as a Channel crossing to France.

This particular trip, incidentally, should not be undertaken without an escort. The chief trouble here

is changeable weather: it deteriorates rapidly to produce awkward choppy waves too menacing to be ridden in safety; and I have always believed that good luck rather than sound judgment was responsible for several successful crossings. When I paddled over to near Calais in rather more than seven hours, as described in the next chapter, the maelstrom-like conditions off Dover breakwater nearly proved my undoing, but that day I learnt all about sea canoeing!

Another nightmare trip of mine across the Firth of Lome in Argyllshire with my canoe hogging and sagging crazily taught me never to tackle a long sea passage in an empty craft. Apart from the risk of being capsized by a steamer's bow-wave, to navigate a 'light' canoe through even a moderate groundswell is a chancy business. I now load with plenty of ballast in the form of tinned food, spare gear and clothing in waterproof bags. This weight in the canoe guarantees great stability, and she rides the seas more smoothly. I have never yet used lumps of iron for ballast, as they sometimes do in narrow dugout canoes along the Amazon!

The efficient stowing of equipment is an important matter, in fact, the safety of your craft may depend on the way you do it. The main point to bear in mind is that on a voyage on tidal waters you can seldom stop to rummage below decks for odd items without risking an upset. Your food, waterbottle, map, etc., should therefore be placed in the cockpit at the start, where you can easily reach them.

Now stowage greatly affects proper trim, and you naturally do not pack all the heaviest kit together. It should be sensibly distributed fore and aft so that the craft rides evenly on the water, or with the stern

slightly depressed if you are likely to have a following wind that day. It is not a good idea to be tilting in the opposite direction, that is, trimmed 'by the head', or 'pig-headed', as they say in the Merchant Navy, to use an expression derived from the condition of cargo vessels loaded in No.1 hold with pig iron.

Before leaving the shore, it is advisable to ask local boatmen about any dangers that exist. If requested, they will usually give reliable information about tides and currents in the area. Such knowledge adds to the enjoyment of a cruise and may help to avoid inconvenience. For instance, it is imperative to ascertain the time of high water and the direction of the flood tide if you wish to enter a shallow harbour that dries at low water. Personally, I have discovered that an acquaintance with the different types of buoys round the coast helps tremendously when you are trying to get your bearings in foggy or misty weather, hence the importance of ascertaining before a trip their markings and location. The eddies round a buoy's base give an infallible guide to the direction of the tidal flow, should you need it.

The real thrills of sea canoeing are apparent when a change of weather occurs whilst one is engaged on a long trip. Perhaps you start off on a sunny afternoon which turns out to be windy and wet, with lowering skies and indifferent visibility. In these circumstances a constant watch must be kept for jagged reefs which may project to within a few inches of the surface. They are hard to spot if submerged under breaking waves, but it is worth knowing where they are, for they could rip your hull to shreds! Isolated rocks just awash are also unpleasant hazards that spell danger to the unwary.

Whatever you do, avoid hugging a rocky coastline, since a heavy sea rebounding from this type of shore will cause such confused patches of water that your canoe will be tossed about like a piece of flotsam. But however stern the contest between you and the ocean, do not panic and think that all is lost, for these sturdy craft have proved their reliability. They can stand up to really bad conditions without being swamped or smashed. There is even a record of one travelling 3,852 nautical miles by crossing the South Atlantic! This sturdy craft was navigated by Captain Romer who landed in 1928 at St. Thomas, Virgin Islands, after a passage of 58 days. At a later date he attempted another long voyage, but a hurricane in the West Indies drowned him.

Another remarkable canoe voyage was made by a native, single-handed, who reached the harbour of Port Louis, Mauritius, from Roderiguez after a passage of 340 miles. He spent 22 days at sea. After having eaten up his little supply of fish, he kept himself alive by scrapings of wood from the gunwale of the canoe, which was not, of course, one of the folding types.

Handling among sizable wave-crests calls for physical vigour, considerable concentration and calm determination. If proceeding head-on to the waves, slacken paddling each time that you ride into them, provided they are short and steep: when they are wide and substantial waves you can safely go full speed.

If you are going forward with the seas coming up behind you, or on the quarter, always do your utmost to avoid being swung sideways. It may be necessary to resort to frequent back-paddling to check speed and maintain course when caught momentarily in surf rushes.

My most frightening early experience of sea canoeing was on the Scottish West Coast when I encountered for the first time 'waves upon waves' miles from land: in other words, ordinary waves were riding on the back of a vast Atlantic swell surging shorewards in truly awe-inspiring fashion. I regained my temporary loss of confidence by recalling that the type of canoe I was sitting in had been tested in similar conditions off Cape Town and had proved itself capable of being knocked about by tremendous waves without falling to pieces.

If mischance should capsize you it is worth knowing what to do. Always remain with your boat! Cling on to it, for the tide will eventually drift you ashore or some craft will pick you up. Better still, try to right the upturned canoe and climb back on board. The best method is to scramble over the stern, legs astride, and work your way carefully towards the cockpit. Take care your weight does not fracture any wooden rods not constructed to withstand the weight of a human body.

In the case of a capsize a bailer would be an asset. But it is a fact that most canoes that overturn suddenly can be righted without shipping much water, due to the trapping of air inside them when they capsize. They should certainly not be in any danger of sinking if fitted with bladders or other forms of buoyancy.

Landing is sometimes a problem and is decidedly risky on steep beaches where powerful undertows might suck underwater and drown anyone capsizing. You should thus avoid a shelving beach that drops down quickly to deep water. A flat or gently sloping beach is a safer proposition if you are not disconcerted by the sight of a line of breakers. By paddling as fast as

possible it is generally easy to surf ride right up a beach on an incoming wave, but this manoeuvre requires rather nice timing!

You must never forget that it becomes too hazardous to land long before it becomes too rough to continue canoeing. Care should therefore be taken to find in advance the whereabouts of the nearest suitable harbour or sheltered bay offering an unexposed landing-place. In fact, it is a good idea to find out where *all* the safe landing-places are along the stretch of coast down which you are cruising.

Few canoeists worry about the possibility of being run down by a steamer. But beware if you frequent a busy estuary or the shipping lanes, for it is difficult to get out of the way of a large vessel travelling at anything from three to ten times your speed. Another risk you must face—but this only applies in certain waters—is that a porpoise may surface underneath your canoe and tip you out; and I have met basking sharks at close quarters—great creatures 20 to 30 feet long with sail-like fins and huge tails that thresh the water in an alarming manner.

The varying aspects of saltwater paddling will ensure that interesting incidents occur on any lengthy cruise undertaken. Several weeks spent sea canoeing always gives a complete mental change from ordinary routine and a most beneficial holiday when you are favoured with reasonable weather. Then you can canoe every day if you feel energetic; but if you are afloat on any occasion and the weather outlook is unpromising do not be afraid to turn back. That is being sensible, whereas to continue along an unfamiliar and possibly treacherous coastline in doubtful conditions may well be foolhardy.

After canoeing several thousand miles in open waters **I** have encountered many difficulties and would like to pass on the benefit of my experience in the shape of valuable advice to anyone taking up this fascinating branch of the sport of canoeing: think of your relations and do not be rash by attempting any trip beyond your capabilities; wear a lifebelt always and go with a companion, preferably someone experienced. If your programme involves working daily from a base a good plan is to tell others where you are going each day, then if you do not return anytime a search party will know what direction to take.

If you by chance follow my route among Hebridean islands, past the white sands of Morar and 'Over the sea to Skye', then you will certainly find high adventure. Make sure your canoe is seaworthy at the outset of the voyage. No patches on the hull must be likely to fall off. All nuts and bolts must be secure because once at sea you cannot get out and adjust them as you would when travelling down a river.

Do not rely on a cheap canoe if you contemplate much sea canoeing. Choose one that has been built up to a standard rather than down to a price. It is better to buy the best available for what is undoubtedly the riskiest kind of canoeing. One advantage of the more expensive models is often the reduction to a minimum of nuts and bolts and slack fittings that may work loose during a long day's run.

Now although I have said that folding canoes can stand up to severe buffetings, that does not mean that canoeists should make a point of seeking the roughest water and spending their hours afloat as far from land as possible: such a course of action would be ridiculous. Until a man or a woman can be classed as thoroughly

experienced he or she should choose the safest possible places to try sea canoeing.

My whole object in discussing the risks run and the precautions necessary has been to warn you to be prepared in case you should by mischance ever find yourself in a tough spot.

Never, in any circumstances, set out alone with the desire or intention of being a daredevil. Deliberately to court danger in a canoe will make the individual concerned extremely unpopular if rescue operations have to be organized on his behalf; and immense harm will be done to the sport's existing good name by bringing it into disrepute.

It is comforting to know that the mortality rate among sea canoeists is low. Your responsibility lies in ensuring that it does not increase.

CHAPTER NINE

Channel Crossings

THE ambition to cross the English Channel is born in a large number of canoeists, but not many have tried and relatively few have succeeded. As a matter of fact, the British Canoe Union in their *Guide to the Waterways* mention the Straits of Dover but deliberately omit to give such detailed information as is necessary for Channel aspirants to possess if they want to have a reasonable chance of achieving success. They do not wish to encourage foolhardiness or to be responsible for accidents.

Obviously the element of danger is present, and canoeing clubs are not in favour of solo crossings owing to the risks involved. The main trouble is that weather conditions change quickly and you may therefore set off in a calm sea only to face rough seas for most of the passage. But if you have sporting blood in your veins you will not hesitate to consider tackling this adventure. That is why this chapter is being written, for it will certainly be useful and fill a gap in canoeing literature which is, shall we say, somewhat reticent on the subject.

The Channel crossing is a perfectly feasible proposition in the right circumstances. Nevertheless, I cannot advise you to attempt it, even if you attend to all the safety precautions and plan meticulously beforehand. Luck enters into calculations, and the hazards can really be formidable—unsurmountable, in fact, if you are not properly equipped.

Remember, then, when reading this account of cross-Channel adventure, that I am neither persuading

you to risk your necks nor recommending the run. Not even on the sunniest day of the summer! The fact that I have never attempted it a second time can be taken as a sure sign that I regard the expedition as too risky to repeat.

After I have set down some hints on how to go about it and referred to various crossings made at different times, I shall describe briefly my own trip, which took 71/2 hours—decidedly slow, but even so about 20 hours faster than that of a Frenchman named Felix Chaussois, who some years earlier made the crossing in a folding canoe similar to the type I used.

Your craft should, of course, be absolutely seaworthy with no patches on the hull likely to come unstuck. A brand-new canoe is the best guarantee of seaworthiness. Proper trim is important—how you stow your gear—a matter dealt with in the chapter on Sea Canoeing. Buoyancy is another question to which I have nothing to add except to say that hundreds of ping-pong balls contained in nets can be placed below decks to assist flotation in the event of capsizing.

I strongly urge a rehearsal in the form of a trial paddle over an equivalent distance: this could be arranged some weeks in advance of the actual Channel attempt and should be performed non-stop. It takes several weeks to shake off the feeling of tiredness which follows such an effort, so I suggest that no long-distance canoeing is done during the month preceding a crossing to France, once full confidence has been gained as a result of the rehearsal. My own trial, incidentally, took place between Southend and Herne Bay in the Thames Estuary, where I found awkward short seas running, rather like typical Channel conditions.

Naturally you must be quite fit and able to stand up to the severe strain of continuous paddling for anything up to 8 or 9 hours, which ought to be the maximum time needed to go from England to France, or vice-versa. Supplies of food and water must be carried, but they can be strictly limited, as it is generally impossible to stop for eating whilst on passage. Raisins, chocolate and lump sugar and boiled sweets are the handiest provisions to take.

You require plenty of time for waiting on the beach at Dover (normal starting point) until fairly settled weather conditions prevail. Telephone the Meteorological Office or the Air Ministry to get a check on your own weather forecast. Perhaps the best month to set off is August, when Channel swimmers may be strung out with their attendant boats between Dover and Calais. You might also consider setting off at the beginning of one of Buchan's fine spells, the dates being shown in any issue of Whitaker's Almanack.

Preliminary arrangements must include visits to HM Customs and the Immigration Officer, not to mention a call at the Bureau de Change where French currency can be obtained. It is vital to clear your canoe through the Customs so that you can bring it back into the country without payment of duty.

If you decide to engage a local boatman as an escort, then the business side of this matter has to be settled; which, you will find, does involve considerable expense. My principal outlay was an insurance policy which cost *£2* to cover my craft for £50 in case of total loss. I had in mind the possibility of things not going according to plan and having to be picked up by a a steamer which would be unlikely to salvage my canoe.

The time of starting largely determines the success of the venture, because it is imperative to pay attention to the tides and make a programme accordingly. They flow up and down the Channel—across your course, in other words—and are more of a hindrance than a help. At Springs their rate may exceed 3 knots, therefore it is advisable to schedule your start during Neaps when the rate is reduced to something less than 1 knot. These neap tides occur, by the way, immediately after the moon's first and last quarters.

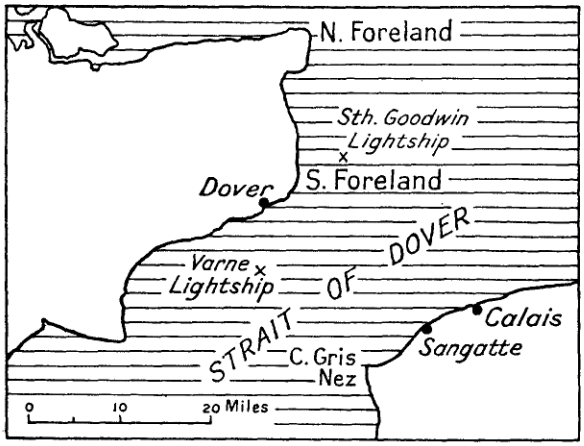


Fig. 8. *The English Channel*

At Dover the tide turns approximately 4 hours after high water there, but on the French side high water is later. If you hope to complete the crossing in 5 hours you should try to land an hour or so after Dover high-water time.

It is best to set course for Wissant, thus you can at

the start identify and steer for Gap Gris Nez, a notable feature of the French landscape, but do not mistake the smaller headland, Gap Blanc, for it.

If, on the crossing, you near the North-East Varne Lightship, then you know you have drifted too far to the south-east and must shape a new course, but be careful to make allowance for the state of the tide when so doing. On the other hand, you must not be paddling anywhere near the Goodwin Lightship which is right off the route in the opposite direction. The accompanying map will, I hope, clarify my remarks in this respect and indicate the relative positions of various places on either shore.

Although a calm sea often happens when mist or fog predominates, it would be folly to set out in poor visibility owing, for one thing, to the risk of being run down by another vessel. Wait until you can see France before leaving the safety of the beach!

I consider a torch for signalling to be indispensable, and, of course, a knowledge of morse. Flares might well be carried, too. As a final hint, I emphasize the necessity of taking with you a spare paddle as well as a length of line with which to tie the paddle in use to some part of the canoe so that you cannot lose it overboard.

Before the war, considerable interest was shown in crossings of the Channel by canoe, and trophies were put up in 1937. One was offered by a firm manufacturing craft; another was given by the proprietors of *The Canoe and Small Boat,* a magazine no longer published. The intention was that they should change hands as new records were set up, but the same winners improved on their own times and both trophies were soon won outright. The manufacturers' award was a

silver cup 10 inches high with an inscription on the plinth underneath reading:

> 'The Folbot Trophy, awarded for the world's record Channel crossing in a folding canoe.'

On the 30th July 1867, a certain James Gordon made the first successful Channel crossing by canoe. He actually paddled out from Dover during the previous morning, but was forced by boisterous weather to return. He left land again in the late afternoon, completing the greater part of the voyage by night and reaching the French coast at dawn.

The first woman to paddle across the Straits was Miss Freydel Meyer who performed the feat in 1933 after travelling by water from Hamburg in her small canoe. She established a long-distance canoeing record by covering 8,000 miles during the years 1932 to 1934 and must therefore have been very fit and well able to deal with the difficulties that one encounters in mid-Channel.

Two young girls—escorted by a power craft—achieved a Straits crossing in the early nineteen-fifties after an initial failure, when they became too exhausted to continue and had to be rescued. A selection of other crossings is given at the top of page 113, the list not being meant to be complete.

It is interesting to note that the canoeist who crossed in 1953 had twelve postponements of start; while the following year he had as many as sixteen postponements and never attempted the Channel that season because of inclement weather.

It is just possible that your difficulties on arriving in France may equal, in a different way, those experienced on the actual crossing. The authorities are likely to

Year	Name	Route	Time
1934	Josef Fink	Calais/Dover	5 hrs. 32 mins.
1934	F. Christian	Dover/Calais	5 " 0 "
1935	W.G. Luscombe	Dover/Wissant	6 " 2 "
1936	F. Whittingham	Wissant/Dover	6 " 45 "
1936	F. Whittingham	Dover/Wissant	5 " 50 "
1937	A.J.W. Simmons	Dover/La Vierge	5 " 15 "
1949	(a convoy)	Dover/Sangatte	9 " 33 "
1950	F. Hirschfeld	Dover/Wissant	6 " 0 "
1951	Major Bruce and H. Ross	Wissant/Dover	4 " 0 "
1952	Deal Canoe Club (4 single canoes	St. Margarets Bay/ Sangatte	5 " 30 "
1953	A.R. Waterhouse	St. Margarets Bay/ Cap Blanc Nez	4 " 8 "
	(This crossing was an officially timed BCU record)		
1954	Major Bruce and Lieut. Mitchel	Dover/Cap Gris Nez	3 " 38 "
1955	F. Hirschfeld	St. Margarets Bay/ Wissant	6 " 30 "
	(Crossing with him were Major Webber And Captain Rowl		

take the view that your landing is not only irregular, but also illegal. Have your passport in order, therefore, and do what I did—take a couple of tins of coffee to smooth the way with any officials you meet. Almost as soon as I set foot on French soil, I was accused of currency smuggling and conveyed to Calais for questioning. Here I proved my identity and justified my existence, thus escaping a night in jail. But let me hurry up and describe the actual canoeing.

When I decided to challenge the Channel in a craft designed primarily for calm canals and quiet backwaters, fellow members of the Canoe-Camping Club thought I was mad. But I felt fit and did not mind the

risk, thus I started from Dover Harbour at dawn on the 3rd May 1948. Weather was bright and sunny, and the French coast looked nearer than 21 miles away. I remembered how other would-be Channel conquerors had either been rescued by lifeboat or had landed up on the Goodwin Lightship.

That mile to the pierhead proved easy, then all hell seemed to have been let loose! The water rose and heaved and punched, with hefty waves ricocheting off the breakwater. It was somewhat like a rodeo, with me on a waterborne steer!

Good luck kept me right way up and for the next five miles a freshening north-east wind hurried me along despite an ugly groundswell. Not daring to look back at the white cliffs of Kent lest a sudden surge should upset me, I paddled with force and struggled to keep on my course. Wallowing in wave troughs was very frightening, but I hung on grimly, praying that the paddle would not snap under the strain.

Riding the crests of big waves was exhilarating. The canoe bows rose up easily on the flank of each 10-foot wave, paused precariously, and then dropped down, down, to disappear under water with the canvas decks awash. I realized I had never canoed among such monster waves, then it began to dawn on me I was in dire peril.

Suddenly, breaking waves attacked me from astern hissing angrily across the decks. If only I could slew the craft round to get her bows pointing into the oncoming waves, that would give me a better chance of survival and perhaps a fifty-fifty chance of escaping being drowned. With renewed energy I started turning, dreading the moment when I would be broadside to the seas. Nothing untoward happened and I 'heaved

to' like a tramp steamer in a full gale for the next half-hour.

Waves lashed into my face, crusting it with salt, and I received a truly severe buffeting since it really was blowing great guns for a while. The paddle was nearly wrenched from my grasp by wind which I afterwards discovered had blown at 37 mph. The cockpit by this time felt decidedly wet and I dreaded shipping too much water. Even had it become waterlogged, though, my six inflated buoyancy bags would have kept my craft afloat.

Soon I found myself drifting too far down Channel and had visions of being swept into the North Sea. An escorting vessel or even a solitary ship in sight would have been comforting. But I was alone. I did not see how I could ever reach France unless the squall moderated. Every minute counted: the tidal current would soon set strongly in a contrary direction and stop me reaching my goal. I therefore chanced it by paddling onwards while the squall still persisted.

The last miles were not quite so hectic, except when the ferry steamer overtook me, setting up a swell to toss me about like a cork. Its bow-wave came towards me resembling a mountain of water, and after negotiating that successfully, I ran into patches of white foam and more boisterous waves.

Furious paddling had given me aching arms, blistered hands and cramped limbs. My appetite was ravenous after hardly eating at all since 5 a.m. I had stupidly stowed my food behind me below decks in an inaccessible bag!

Eventually I faced the ordeal of trying to land on a surf-ridden beach, feeling thankful that I had not suffered from seasickness during the trip. Choosing the

right wave when I got into shallow water, I paddled with teeth clenched and ran inshore surfing on its back. I jumped out of the cockpit as my Tyne canoe 'touched down'—and oh, that sandy beach!

Quickly seizing the towline, I dragged my craft out of the water—my nightmare journey had ended, but I dreamed of those awful moments in mid-Channel every night for a month! The adventure was rounded off a few days later by an 'In Town Tonight' broadcast, with John Ellison, the interviewer, asking me when I intended tackling the Atlantic in my tiny craft!

CHAPTER TEN

Continental Canoeing

IT is impossible, of course, to make a complete survey of canoeable lakes and rivers on the Continent; but a selection of the most frequently visited waterways, or those that offer really grand sport, should prove both useful to those intending to try foreign touring and interesting to the reader who will not stir from his armchair.

France has very many possibilities, but if you go in the south be sure to take sunburn cream and insect repellent as well as light clothing. It is practicable—if sufficient time is available—to cross the country by canoe from the Channel coast to the Mediterranean, using canals and rivers. Near Bordeaux, there is good canoeing in the Landes area with its vast pine forests; while many may like to explore the Calanques or tiny creeks between Cassis and Marseilles. Here you can expect to find golden sand and glorious sunshine, and all the ingredients of a lazy vacation.

Of French rivers, the Orne in Normandy should naturally be considered initially, as it was the first on which the Canoe Club de France issued a canoeing guide. It twists for a hundred miles through rather wild, rugged country, having alternate rapids and shallows. Canoes may commence the descent of the Orne at Ecouche, about 30 miles from its source. There are 5 miles of deep gorges, which might be dangerous in high water. In a dry summer probably more portaging than paddling would be necessary! Lower down, easier conditions are found with the last awkward rocks near Maltot. Many dams (some now

broken) have been thrown across this river to divert water to small factories and tiny mills, therefore you can reckon on having to perform numerous portages at these obstructions. The railway is at hand from above Thury-Harcourt to the well-known town of Caen, below which you can paddle on the tidal part of the Orne for 10 miles to the sea at Ouistreham.

Next we come to the Tarn, a notable tributary of the Garonne. Isparnac is a recommended starting point. On the second day, you will pass through Les Gorges Du Tarn, where limestone cliffs capped with green foliage rise sheer, and be able to shoot rapids as far as the Cirque Des Baumes, grottoes formed by the collapse of a huge cavern's roof. Then the valley widens. An awkward portage is essential round the Pas De Souei owing to great blocks of stone making the riverbed impassable. This means taking to a rocky path with the canoe strapped on its trolley and following a road for 3 miles. After re-launching, you find the Tarn faster and must steer carefully through more than a dozen exciting rapids, some requiring inspection before tackling. Below Le Rozier plenty of thrills can still be had, then several portages at dams or barrages slow you down. Be sure to do some sightseeing in the quaint village of Ambialet and the old town of Albi.

The valley of the Dordogne is extremely popular among canoeists, for it has lovely wooded hills and fine old castles. Spontour is the normal place to start and you may decide to finish at Bergerac, where there is a good hotel in the main street, unfortunately rather distant from the river. The Dordogne is highly attractive, although sometimes low water makes navigation difficult but not dangerous.

The Vezere is a tributary of the latter river that

possesses grand scenery and is suitable for beginners. High banks are somewhat of a disadvantage at first, and only a moderate current flows, especially after the dams at Mauzac and Tuilieres. At least two tiresome portages must be undertaken before the stream joins the Dordogne at Limeuil.

A perfect fortnight's holiday is possible on the Moselle, and you can, if you wish, hire canoes for the run from Trier to Coblenz. Generally speaking, this river is easy—perhaps rather tame, although occasionally the current runs fairly swiftly. It is worth mentioning that by starting at Echternach you can first descend the Sauer, a tributary running along the Germany-Luxemburg frontier.

One of the fastest French rivers is the south-flowing Rhone, down which you can sometimes paddle 50 miles each day. Its current therefore demands constant watchfulness at the bridges, particularly in Lyons, where menacing whirlpools are formed by their buttresses. The scenic interest hinges chiefly on such towns as Avignon and Tarascon. You may like to see Vienne with its Roman temple, or Viviers with its cathedral built on a rock. Between Yenne and St. Didier are many islands and enough rapids to satisfy the average canoeist. Worthwhile tributaries that can float canoes are the Drôme which joins below Valence and the Aim which comes in near Sault.

Two important tributaries of the Rhone give excellent canoeing—the rivers Isere and Ardeche. Five days are generally necessary to travel down the former from Albertville to Valence. Again, I remind you to beware at the bridges! Shingle banks are evident near the start, with the Isere running fast and deep. Three barrages in the last 20 kilometres call for portages.

The Ardèche is somewhat more attractive—in fact, I have read of its scenery being referred to as 'indescribable' ! Anyway, whatever adjective is utilized with regard to its beauties, it is bordered here and there by high cliffs, possesses numerous rapids and will make any canoeist gaze in wonder at the grandeur of its gorges. Yes, a river to be remembered!

I can vouch for the Seine as a splendid canoeing playground—even for novices. They must, however, exercise the utmost caution in keeping clear of commercial craft, which are pretty numerous below Paris. I know the tidal part—extending over 80 miles from Le Havre to Rouen with its gloriously wooded banks and fascinating little places like La Bouille, Duclair and Caudebec. Naturally, you need to choose the right weather, otherwise on the Lower Seine you may encounter waves of surprising size whipped up by strong headwinds.

The Seine is accessible from Britain for those who want a 4-day Easter trip. Make your start at Mantes and paddle 18 miles the first day to Bonnières: continue the following day, travelling 21 miles to Les Andelys, where camping can be enjoyed near a famous chateau: another 20 miles brings you just beyond the wonderful old town of Pont De L'Arche. The last day's run of 20 miles leads you right to Rouen, but if time is short, it may be preferable to pack up at Oissel, or perhaps at Elbeuf, which is the limit of the tide. Other railway stations are near the river higher up, so you need not fear missing the last train through making slow progress!

Let us now consider the mighty Loire which offers more than 500 miles of canoeable water. In its upper stretches there are fords and weirs, fallen trees and

irritable anglers! But do not think that I am trying to discourage you from seeing this fine river that sweeps so majestically from vineyard to vineyard through the renowned 'chateau' country. You will certainly revel in this cruise, and perhaps be like C. S. Forrester and write a book on your voyage. Incidentally, he used a punt-built dinghy, not a canoe; but the story of his days afloat will serve quite well to give you advance information about this river. Ask your library for *The Voyage of the "Annie Marble"*.

Try to avoid the Loire in drought, or you will curse it for being so very, very shallow; and will experience considerable difficulty keeping in the current owing to the maze of sandbanks, secondary channels and dead-end arms that lead nowhere when the waterlevel is low. I would advise launching on the Loire at Nevers and finishing at Saumur. Orlèans, Blois and Tours are the largest towns on the banks. Why not make one of them a base for several days so that you can go for coach trips in the surrounding countryside ? I have found this method of canoeing—stopping for sightseeing in the middle of a cruise—has its advantages, for one thing it enables your canoeing muscles to rest and relax. In the event of your having unlimited time, I suggest you attempt some of Loire's tributaries, namely, Loiret, Casson, Cher, Indre and Vienne. It is better to canoe these smaller rivers than spend all your holiday on the Loire if it means going downstream to the less interesting parts towards Nantes and the sea.

I cannot use more space to describe other French rivers—there are dozens—but I will just mention a few more you may like to investigate sometime for yourselves: Marne, Meuse, Sambre, Sarthe, Somme, Aisne and a much smaller one I intend to explore at some

future date—the Vire in Brittany. If you would read about canoeing on some of these rivers, then borrow *Inland Voyage* by R. L. Stevenson or *Canoe Errant* by Raven-Hart.

The Geneva Canoe Club report having canoed the Grand Buech from St. Julien en Beauchène, about 60 miles south of Grenoble. Apparently this stream is sometimes 'a swollen torrent of continuous rapids' and several miles are pretty tricky. Two of their members capsized before they ended the expedition in Sisteron at the junction of the very sporting Durance, which I will now mention as the final French river to come under review.

L'Argentière La Bessée is the highest place to launch a canoe for the descent of the Durance which here flows approximately 3,000 feet above sea level. That gives some indication that rough rapids might occur, and they certainly do, as all who have seen the British Canoe Union's film of a party paddling down this river will know. The width of the water increases after La Roche de Rame has been passed, but soon the Durance narrows again to become dangerous. There are whirl-pools, **S**-bends and switchback rapids with waves so large that they would somersault a capsized craft. In 1939 some canoeists were drowned between Siguret and Embrun.

Much easier canoeing is possible from Pont de la Clapière to Sisteron, but these 52 miles will seem tame after the previous four days' thrills. Be on the lookout for a severe rapid at Les Crottes, which is generally too risky to attempt. Sisteron is interesting with its citadel on an outcrop of rock from the top of which a view of the Alps can be obtained. The Durance flows fairly swiftly and has rapids at sharp bends. The bed of the

river is shingle. You will notice picturesque countryside on both banks. During the third day, after leaving Sisteron, you will probably reach the barrage of La Brillanne. Here a canal takes off a lot of water from the Durance. The result may be that no proper canoeing can be done for the next 20 kilometres. The end of this journey could be Avignon, where you find yourself upon the Rhone.

Lovely though the Durance is, beginners must avoid such a difficult river. Gamp sites are none too easy to find; and most villages stand far back from its banks—5 kilometres, for example—which compels you to do a certain amount of walking when in search of food supplies. I should say in degree of difficulty the Durance compares well with the Isère.

Switzerland is a comparatively unknown country to British canoeists. However, good printed guides are available, also a detailed canoe map is sold by the Touring Club Suisse, Geneva. Before I list the canoeable waters of Switzerland, a few hints may be appropriate.

Broadly speaking, Swiss rivers are of two kinds: snow-fed rivers and rain-fed rivers. When venturing on the former, it is a sound plan to grease your body as a protection against extremely cold water which might bring on heart failure should you have the misfortune to capsize. This type of river is characterized by a high summer water-level. Usually a rise occurs during the afternoon, while the water generally drops during the morning. In other words, they are regulated to a great extent by the number of hours of sunshine daily that melts the snows on the mountains and so swells the rivers. Now rain-fed rivers, as their name indicates, depend entirely on the quantity and frequency of

falling rain. Their water-level is generally highest in spring and early summer.

If you want a long trip that will take you half across Switzerland, try the River Aar, but first obtain the helpful itinerary produced by the Swiss club. Start at Meiringen, above the Lake of Brienz. Before you reach the Rhine at Goblenz, you will have covered over 250 kilometres of navigable water.

Other rivers that I have no hesitation in suggesting for experts are the Sarine, of moderate difficulty and flowing through Fribourg; the Doubs that rises in the Jura Mountains before entering France; and the Ticino—south of the Alps—that is considered moderately difficult after Biasca. Then there are the Simme, Maggia, Upper Reuss and Vorder Rhein. These, too, are emphatically not for newcomers to the sport.

Switzerland provides convenient lake canoeing for those interested. A crossing of Lake Geneva may precede a journey down the Upper Rhône; similarly, a crossing of Lake Constance is a splendid beginning to a descent of the Rhine which issues from it. Various other lakes that are joined by short canals include Bienne, Neuchatel and Marten. Also, Wallensee and the Lake of Zurich are united by means of a canoeable canal.

Now shall we go to Portugal for a quick glimpse of the Douro and see what it has to offer? I heard of some people who started at Barca d'Alva where they enlisted the services of a mule cart to convey their gear to the side of the river. They negotiated treacherous rapids and threaded their way through very hot and uncannily silent gorges of granite and schist, having a fast run as far as Vesuvio. Later, strata stretching diagonally across the river formed numerous long, easy rapids

which kept the speed of the canoes above average. They had to 'line down' in at least one place where a projecting reef looked rather hazardous. This party went to Oporto, battling for the last mile against wind and tide. They had a hard struggle to round the final bend of the river.

In the absence of mud and tides, the Dalmatian coast of Yugoslavia gives good canoeing sport. Split is the best centre, and you can cruise to the island town of Trogir. But more exciting is the River Drina which is a tributary of the Sava in the interior of the country. It has frequent, swirling rapids, sometimes enclosed by wooded banks, sometimes by entrancing gorge scenery. The water is crystal clear. Log rafts are encountered on the Drina and a 'loggers' boom' may be shot between Limski Buk and Visegrad. The State Youth Organization arranges trips on this exciting river, and it is possible to continue down the Sava and into the Danube and thus reach Belgrade.

Before the war Poland was popular with British canoeists. Its longest river, the Vistula, could be explored for 1,000 kilometres in just over three weeks; and 500 kilometres of the Dniester provided a suitable 10- or 12-day tour. Then there is the River Brda in the province of Pomorze that takes its birth from several lakes. This beautiful stream was much visited 20 years ago. It flows through the huge Tuchola pine forests (which form a veritable green tunnel), emerging into more open country 80 kilometres downstream.

Another Polish river is the Donajec, which was visited recently by an English canoeist. He commenced his odyssey at Nowy Targ, using a 40-miles-to-the-inch map and having no knowledge of the language! Children drew diagrams of weirs to warn him of these

dangers. From this small town in the foothills of the Carpathians, he threaded his way through dark, green coniferous forest and deep canyons with bare, white cliffs. Apparently the river itself resembles the Scottish Spey for its speed and the manner in which it grows shallow on broadening out. .. and long, choppy rapids alternate with smooth stretches. At Gzorsztyn, he saw many queer-looking log rafts, each consisting of 4 hollowed-out 15-foot logs lashed together. Any cracks were caulked with fir branches—an impracticable way of making a canoe watertight but it seemed ideal treatment for a log raft.

My friend described the scenery on this trip in glowing terms: the panoramic background of the Tatra Mountains; fantastic limestone rocks overlooking the water; the fine old castle of Nieozica; and the wild beauty of the landscape reminiscent of the Rocky Mountains of Canada. Owing to intensive cultivation, camp sites were not easy to find.

The so-called 'blue' Danube is 1,725 miles long and naturally allows one to make an extended canoe tour through several countries. One of the first expeditions on this waterway was made in the eighteen-eighties by Poulteney Bigelow, who used an American sailing canoe and wrote a book about his experiences entitled *Paddles and Politics Down The Danube*. More modern is *The Danube Flows Through Fascism* by William Van Til which describes a 900-mile cruise in a folding canoe.

You may fancy alighting from the train at Beuron and launching at this high point. If so, you will be faced with twenty-one portages during the 75-mile run to Ulm, the more usual starting place. The scenery is excellent and you will enjoy this part. Five days are

necessary to cover the distance. There are low bridges and shallows in this section which I personally consider rather strenuous going, not at all what I want on a Continental holiday.

Once past Ulm (an ancient city with an imposing cathedral), you still find yourself in Germany and cruising across a countryside that one might call the Granary of Bavaria. Such flat country as is found hereabouts is definitely dull, with the notable exception of the Weltenburg Gorges that break the meadow-land monotony.

You should stop at Regensburg (Ratisbon) to inspect its many fine old buildings before proceeding on the 5-day hop to Passau, known as 'the town of the three rivers' because two tributaries enter here. Within a mile the Danube crosses the frontier into Austria and you notice a marked improvement in the scenery *en route* for Linz. Some say it is better than the Rhine. At any rate, you find charming villages as well as ruins and castles and precipices.

The next section, from Linz to the Wachau district, is not so inspiring, but you may perchance appreciate the many willowy islands and quiet backwaters. You will paddle, always with the aid of a helpful current, between rolling hills and fruit orchards, with here and there a riverside monastery, before approaching the 'perfectly horrible' environs of Vienna. On no account end a cruise here and take away as your last memory of the Danube its murky waters, by factories and petrol installations: continue another two days to Bratislava. Going below this town is not recommended, as the 'river of gold' becomes rather too broad for pleasant canoeing—you tend to lose contact with the shore. If, however, you arc intent on further mileage

in. a big way, I think you will find the distance from Bratislava to Budapest is around 200 miles.

Principal German rivers of interest to canoeists are: Rhine, Main, Neckar, Lahn, Weser, Elbe and Ruhr, and there are many others of secondary importance. For full details you should refer to an illustrated pamphlet *Canoeing and Boating in Germany* which is published free by the German Federal Republic Travel Bureau. Those intending to paddle canoes in the country should not be without an annual publication produced by the German Canoe Association and called the *German River and Camping Handbook* which gives much information about navigable waterways.

The Rhine needs no introduction, being Germany's longest river, famous in legend and song. Gigantic hydro-electric works near Schaffhausen compel long portages and considerable alertness is necessary when canoeing along the fast-flowing upper part of the river. The Lower Rhine valley begins at Basle, and you pass such towns as Freiburg, Baden-Baden and Karlsruhe, all in very pleasant settings and having fine mediaeval architecture.

Besides the picturesque vineyards which crown the banks, the highlights of a Rhine cruise are the Lorelei rock and the 'castled crag of Drakenfels' which comes into one of Byron's poems. You will probably not want to proceed across the plains to the Dutch frontier, through the great industrial centres of Cologne and Diisseldorf. But if you do, make a point of seeing something of the old towns of Zons, Wesel and Xanten. Regarding Rhine distances, you need four or five days for the run from Basle to Karlsruhe (115 miles); three or four days for the next section to Mainz (90 miles); almost a week from here to Cologne (117

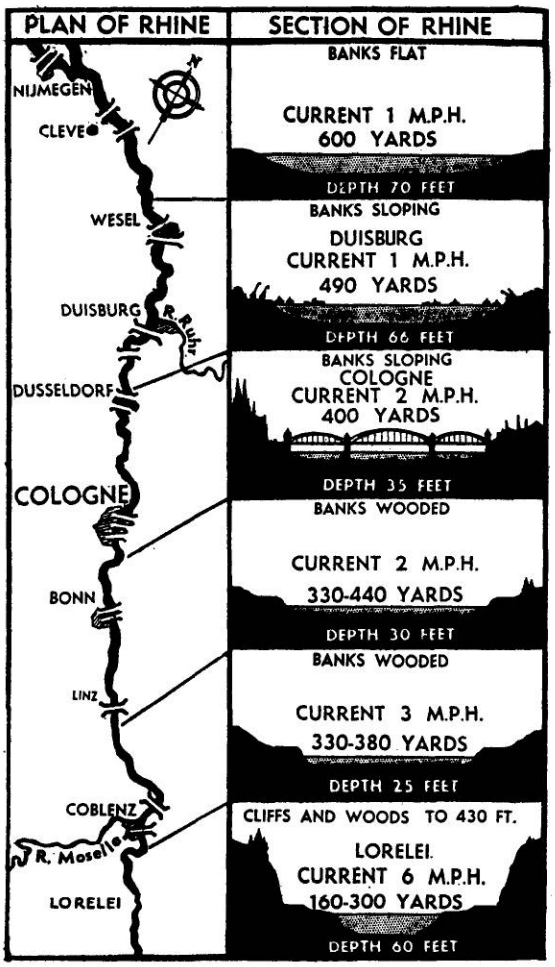


Fig. *ga. Plan of the Rhine, showing chief towns*

Fig. *gb. Sections of the Rhine, indicating nature of banks, width, and speed of current*

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miles); and, where the current is less strong, from Cologne to Holland (66 miles), you will find that four days is not too much to devote to this bit.

Wandering westward, we find the tributary Main is canoeable from Kulmbach. But if low water prevails, the start had better be at Lichtenfels. Many unspoilt little places can be visited on this trip.

From Stuttgart to Heidelberg by canoe means a 6-day tour of approximately 100 miles through a region renowned for its delicious wine—the valley of the Neckar. The current is negligible and many weirs and locks slow you down: continue to the Rhine if you feel so inclined.

Another river with hardly any current and no serious difficulties is the Lahn that you can descend in a week from Marburg. Geissen and Limburg lie on its banks. If, however, you start at Braunfels, then the distance to be traversed is 68 miles instead of 110 miles.

The Upper Weser extends for 125 miles from Hannoversch-Munden down to Minden and it has a moderate current. Beware of low rope ferries. At Oberlauf is found the only lock. The Middle Weser from Minden to Bremen sees much river traffic, therefore you must exercise caution here and be particularly careful not to let your craft enter any of the many locks at the same time as other vessels which may crush it against the lock walls. The Lower Weser, being tidal, should be avoided owing to mud, disturbed water, etc.

Weser's canoeable tributaries are numerous. The Eder—which runs through a wonderful lake—joins the Fulda before uniting with the parent river. Boat haulage equipment is provided at many weirs on the Fulda and other German rivers—quite a boon to tired canoeists! Maybe you fancy exploring the Hamme (19

miles long) with its narrow side streams ? Or the charming Werra, partly in the Soviet Zone ? Or do you prefer to try some of the heathland rivers in the Liineburg area between Bremen, Hamburg and Hanover? This district offers the canoeist solitude in his wanderings, sights of purple heather and dark-green juniper and interesting canoeing that amply recompenses him for any effort necessary to get past sluice-gates, low foot-bridges, weirs and other obstacles. Chief heathland rivers are the Bohme, Oertze and Munden, the latter being a tributary of the Aller.

I should be ashamed not to list the Elbe with German rivers, but its best stretches are out-of-bounds under Soviet jurisdiction so I will confine my remarks to the part near Hamburg, which, incidentally, I know best. Hereabouts the river splits into North and South Elbe but joins again. You take the former branch to reach the town of Hamburg and the Alster Lake. As the harbour is invariably busy, be on your guard to dodge launches and other ships that might collide with you. For 31 miles as far as Krautsand you can have a grand tidal-water trip. But only expert canoeists should go further seawards in the direction of the stormy North Sea coast.

CHAPTER ELEVEN

In Other Countries

USA

MEMBERS of the Appalachian Club regularly attempt many of the fifty New York and New England rivers which they refer to as 'rambunctious'. Fine weekends will always bring out fleets of canoes to go plunging wildly through the spumy rapids. The penalty for any misjudgment may be a ducking, and since some of the rivers are rather dangerous, especially if in flood, life-jackets are worn as a precaution.

Two popular venues for American canoeists are the Farmington River in North Connecticut and the Westfield River in Massachusetts. The latter is for experts only because in places it drops a hundred feet per mile. Whirling cauldrons of water characterize its course. You find particularly menacing 'haystacks' of tremendous size on the Westfield River. These are stationary waves at the foot of rapids caused normally by ledges of rock or massive boulders lying underwater.

Paddling through Pennsylvania on the Susquehanna with its steady current is a grand experience. You can cover five hundred miles from Cooperstown above the Goodyear Dam in New York State to Havre de Grace at the northern end of Chesapeake Bay. It is interesting to note in passing that one of George Washington's generals floated an army south on this river. He employed flat-bottomed boats, of course, not canoes!

The Potomac River has been canoed from Keyser in West Virginia as far as Washington, a 230-mile journey that takes twelve days and involves nine

portages at dams. Capsizes in the Cumberland rapids are a distinct possibility, for here the tributary Wills Creek and the North Branch of the Potomac unite to flow in a twisting turbulent channel. After negotiating this—if you forget to fit a spraycover—you will have to stop and bail out the cockpit!

In 1940 an intrepid pioneer with two companions went down the Middle Fork of Idaho's Salmon River through 112 miles of wild water said to give the toughest boat ride in the United States. Daily they shot dozens of rapids of exceptional severity until they had dropped 4,000 feet! The last lap took them through the Impassable Canyon at night, the only damage being two broken rods. Next year an equally daredevil trip took place with several canoes riding giant waves but surviving the ordeal. This was a 234-mile voyage down the Colorado River whose rate of flow is 20,000 cubic feet per second!

Another stout effort that captures one's imagination was the 350-mile trek by canoe down the Rio Grande from Praesidio in South-West Texas. This awe-inspiring river forms the frontier between Mexico and the USA. It cuts through canyons and gorges with rapids and whirlpools sufficient to satisfy anyone's lust for adventure. The three men who set out were the first boating party to undertake this particular journey since 1899. Awkward rapids were first encountered in Canyon Colorado which seemed endless. But Santa Elena Canyon (extending for twelve miles) proved a much more serious challenge: boulders as big as houses blocked the riverbed, having fallen from the 1,200-foot-high sides of the canyon, probably centuries ago. All the folding canoes were successfully taken down past the difficult section, although this portage turned out

to be very arduous. Later, sudden L-bends with submerged rocks adding to other hazards caused the party great anxiety. Personally, I would hesitate to describe this enterprising trip as a joy-ride!

LABRADOR AND CANADA

As several books would be required to survey all the canoeing playgrounds of the North American Continent, I cannot but feel that anything written here is inadequate. My selection of the Hamilton River in Labrador and the Peace River in Canada is entirely fortuitous. Hearing about them will perhaps stimulate your interest to seek information about other canoeing possibilities in that part of the world which is, of course, the home of the 'Canadian', a type of canoe most suited for exploring the backwoods. I suggest you lose no time in reading *The Dangerous River* by R. M. Patterson who describes canoeing on the Nahanni River.

Labrador's mighty Hamilton River can be canoed from Astray Lake (near the Quebec border) to North-West River, a trappers' town (village, perhaps, since its population is 350!) on an arm of the Atlantic. This 580-mile journey will require a quarter of a million paddle strokes! Actually, the first part takes you across several lakes (including Forget-Me-Not Lake) and the Ashuanipi River until you reach the beginning of the Hamilton.

From Jacopie Lake a 27-mile portage is necessary to bypass the Grand Falls and Bowdoin Canyon, where canoeing is utterly impracticable. You rejoin the Hamilton near Big Hill and continue for 45 miles to Winokapau Lake. This deep and beautiful stretch of water

extends for 35 miles with spruce and birch upon its surrounding hills. Afterwards you come to the Mouni rapids and go faster for a dozen miles. Keep a wary eye for jagged rocks that might rip open your craft's bottom.

Slack waters lead to Minipi rapid, Horseshoe rapids, Gull Island rapid and Porcupine rapid at the end of Gull Lake. The first rapid in this catalogue is undoubtedly one of the river's roughest. Men who go trapping by canoe have been drowned in it. Here the Hamilton roars round a curve and becomes reduced in size to a width of barely a hundred yards.

Horseshoe rapids have heavy swells which make keeping to the correct channel too tricky for anybody but an expert canoeist. At the last hazard, named Muskrat Falls, you must carry your craft over a sandbank because here two falls cannot be shot. For real canoeing thrills and a memorable sightseeing cruise through the superb scenery of Labrador you cannot surpass this itinerary down the Hamilton.

If I had to choose a trip in Canada I would plump for a run down the Peace River, which flows from Central British Columbia right across Alberta. I would start on the tributary Parsnip River, or even higher—on one of several fascinating lakes. My canoe could be slid gently over beaver dams on the brawling Parsnip; and I would have tremendous fun weaving in and out of lovely islands, dodging log jams and cutting a way through fallen trees.

This stream, the Parsnip, after flowing 90 miles in a a valley known as the Rocky Mountain Trench, unites with the Finlay to form the Peace River. This latter then runs east, being the only river which achieves the distinction of breaking through the Rockies. Where it

does so, one finds a wild canyon not passable by canoes, thus a 16-mile portage must be undertaken. It would be fatal to attempt this canyon whose stupendous cliffs imprison the lashing, foam-flecked waters of the Peace.

On re-launching I would rig a mast and sail, hoping to travel a few hundred miles downstream averaging 50 miles a day with the aid of a favourable chinook wind.

If time permitted me to go far I might contrive to canoe the world's only river that flows both ways! This unique river is the Rocher in Alberta, and it reverses at certain seasons for quite understandable reasons, which once again proves that truth is more startling than fiction.

The Rocher links Lake Athabasca to the Peace River, the combined waters becoming the Slave River and flowing north to the Great Slave Lake. In drought Lake Athabasca possesses no outlet, being fed by the Rocher running from the Peace River, which divides on meeting the Slave River. When the water-level of the lake rises to a certain height, then the Rocher is compelled to change direction and flows back along its bed before heading north.

A canoeist's main anxiety in this part of the world must always be whether the Rocher is, so to speak, going his way!

AUSTRALIA

Major Raven-Hart, now 66 years old, is probably Britain's best-known canoeist. He has covered about 20,000 miles in folding canoes since taking up the sport in 1930. His experiences are recorded in several books

which describe his descents of the great Rivers Nile, Mississippi and Irrawaddy. He also wrote *Canoe Errant* relating his adventures from 1930 to 1934 on Continental waterways. More recently he has visited Australia to paddle along some rivers there and write yet another book. Although this has now appeared, few in Britain have seen it, because it was published in Melbourne.

His intention was to make a 1,000-mile voyage along the Murrumbidgee and Murray Rivers in New South Wales and South Australia, taking approximately ten weeks over the journey. The Press representative who interviewed Raven-Hart expressed it rather oddly when he reported, apropos the 2-seater canoe being used, that 'it is made to collapse somewhat after the style of an umbrella'!

Australians had definitely become canoe-minded even before the arrival of Raven-Hart, though it is to be regretted that they apparently invented that ugly word 'canoer' whereas 'canoeist' sounds so much better and is the generally accepted term.

Their country has interesting mountain streams besides sizable rivers and numerous lakes that cry out to be canoed. Then there is the Great Barrier Reef off the Queensland coast that offers the prospect of romantic and exciting canoeing round innumerable coral islands.

Some Australians prefer rigid canoes as being less likely to be damaged on their rocky rivers. Also, the sun they enjoy makes the rubber of folding craft perish rather quickly unless preservative is constantly applied. Like certain other countries, they hold an annual canoe race. This is a 100-mile event along the rivers Nepean and Hawkesbury which comes to the sea between

Sydney and Newcastle. In 1952, a 19-year-old lad won this race in the record time of 18 hours and 32 minutes. He paddled along in a 2-seater Granta model, beating other craft with crews of two and three. His progress in this marathon was so fast that he arrived at the finish unexpectedly—the judges were all asleep!

NEW ZEALAND

Canoeing interest in New Zealand has been constantly increasing so that a National Canoeing Association was set up recently to co-ordinate the activities of various clubs, four of which sprung into being within a year.

The Wanganui Canoe and River Boating Club holds regular regattas. Its members have toured on rivers like the Ohura, Ongarue and Wanganui. Some members customarily use the picturesque Maori canoes with their ornate carved stem and stern pieces. Boy Scouts in the Dominion also favour this type of craft, but folding canoes are gaining in popularity and were employed on an 11-day trip undertaken on the tortuous Clarence River in the South Island.

This adventurous expedition began unluckily. After six miles of quite good going, one canoe collided with rocks and 'began to disassemble itself after sinking. Although salvage operations were successful, major repairs had to be effected with driftwood picked up on the spot to replace broken frames and other essential parts.

The canoeists then continued their odyssey through remote and almost unhabited regions, penetrating precipitous gorges and rocky ravines. They traveled

108 miles in eleven days, a leisurely rate owing to delays for collecting geological specimens for a museum from the Inland and Seaward Kaikoura Mountains between which the river flows. The Sawtooth Gorge—people had warned them of its dangers—turned out to be one of the safest stretches on the trip, despite its alarming name. Perfectly straightforward, too, were the final 15 miles which brought the party to the estuary railway bridge on the Marlborough coast.

Several clubs usually combine for holiday runs. In the North Island, especially keen are the members of the Auckland Canoe Club and the Auckland University Canoe Club. Down the Waikato River and across Lake Taupo have been just two of the attractive fixtures arranged by the New Zealand Canoeing Association.

Folding canoes have been utilized to explore and sound the depth of the crater lake on Mount Ruapehu. Interesting data were obtained, such as the knowledge that a considerable change in the actual bed of the lake had taken place between 1950 and 1954. At one spot a water depth of 218 feet was registered, whereas previously the figure had been 264 feet.

Daring New Zealand canoeists have negotiated the Cook Strait—30 miles wide. Two friends paddled and sailed an English kayak from Queen Charlotte Sound to the North Island in spite of strong tides setting across their course. The last 3 miles were accomplished with a strong wind raising 10-foot waves.

Another voyager by canoe who left Paraparamu to conquer the Cook Strait nearly lost his life. He capsized off Makara beach when 250 yards offshore. Whilst swimming towards land, he became tangled in seaweed. Fortunately, his clasp knife was round his waist

so he cut himself free. Exhausted and numb with cold, he just managed to reach the safety of a shingle beach.

SOUTH AFRICA

We in Britain know that South Africa now recognizes canoeing as a popular sport. In that country the annual race from Pietermaritzburg to Durban has received much publicity in the Press. Perhaps you would like to know something about this gruelling long-distance race?

The course extends no miles along the rivers Umzindusi and Umgeni. Chief characteristics of the former are its narrowness and shallowness; while the latter runs faster, being much wilder and having serious rapids that compel portaging or lining down. Both banks are inhabited by snakes, especially green mambas whose bite is deadly. No water from either river should be drunk owing to the risk of typhoid, therefore canoeists must carry plentiful supplies.

All rules for this race are drawn up by the Natal Canoe Club which quite rightly places great emphasis on safety precautions. For instance, lifebelts are obligatory and contestants must always travel in pairs since the journey might take a week. But the record time stands at 1 day 14 hours, an incredibly speedy passage achieved in 1954 when rain had swollen both rivers. Out of thirty-six starters, only ten finished, which indicates how tough and fit you need to be to complete the course.

Home-made rigid or folding canoes are mostly used on this adventure. These generally have high cockpit coamings to minimize the chances of being swamped in heavy rapids. And it *is* rough going when the Umgeni

sometimes drops 50 feet within a mile. Incidentally, the total fall of the river from Pietermaritzburg to Durban is around 2,250 feet!

No canoe in the race is allowed to weigh less than 20 lb. because a lighter craft would soon be smashed to pieces on the rocks. The stringers built into these canoes are often made of metal instead of wood for greater strength. Naturally every canoeist must provide his own food and equipment for camping, and he has to report at four check points along the route. It is certainly an endurance test which has been described as 'the world's toughest race'.

Higher up the Umgeni River a canoeing venture last year nearly caused the death of one canoeist. The party succeeded in paddling 25 miles in three days between Howick Falls and Albert Falls, never previously explored by canoe. The unlucky man's boat overturned in a rapid and trapped him below the water. Happily his friends came to his aid and he managed to come up for air. Rescue followed.

Apparently the three canoeists spent their first day wading in a strong current, hanging on to their canoes. Thorns from overhanging vegetation tore at their clothes and big boulders prevented normal canoeing. Afterwards the leader expressed the opinion that the trip was worse than the race to Durban. He also said: 'It was ten times worse than the qualifying course laid down by Natal CC."

APPENDIX I

Books on Canoeing

AUTHOR	Title	YEAR PUBLISHED
R. C. Anderson .	Canoeing and Camping Adventures in Northern Waters	1910
W. Baden-Powell	Canoe Travelling	1895
E. Barnes .	As the Water Flows	1922
P. Bigelow	Paddles and Politics Down the Danube	1892
N. Bishop .	Voyage of a Paper Canoe	1878
R.J. E. Boggis .	Down the Jordan in a Canoe	1939
P. W. Blandford .	Canoeing Today	1946
W. Bliss .	Canoeing	1934
W. Bliss .	Rapid Rivers	1935
W. Bliss .	The Heart of England by Waterway	1936
R. Cattell .	Under Sail Through Red Devon .	1937
R. A. Downie	The Heart of Scotland by Waterway	1934
A. M. Dunnett .	Quest by Canoe: Glasgow to Skye	1950
A. R. Ellis	The Book of Canoeing .	1935
A. R. Ellis	Canoeing for Beginners	1936
A. R. Ellis and C. G. Beams	How to Build and Manage a Canoe	1949
M. Govan.	The Trail of the Red Canoe .	1954
J. D. Hayward .	Canoeing	1893
J. L. Henderson .	Kayak to Cape Wrath .	1952
W. G. Luscombe and L. J. Bird	Canoeing	1936
J. Marshall	Canoes and Canoeing .	1937
D. Maxwell	A Cruise across Europe	1906
A. A. MacDonnel	Camping Voyages on German Rivers	1890
J. MacGregor	iooo Miles in the Rob Roy Canoe .	1870
J. MacGregor	The Rob Roy on the Baltic .	1867
J. MacGregor	The Rob Roy on the Jordan	1869
R. Neville .	Survey By Starlight	1949
B. Pain	In a Canadian Canoe .	1891
R. M. Patterson .	The Dangerous River .	1954

R. E. Pinkerton	The Canoe, its Selection and Use .	1928
P. Pulling .	Principles of Canoeing .	*954
R. Raven-Hart	Modern Canoeing	1939
R. Raven-Hart	Canoeing in Ireland	1938
R. Raven-Hart	Canoe Errant	1935
R. Raven-Hart	Canoe Errant on the Mississippi	1938
R. Raven-Hart	Canoe Errant on the Nile	1936
R. Raven-Hart	Canoe to Mandalay	1939
R. Raven-Hart	Canoe in Australia	1948
T. G. Rising	Kingfisher Abroad	1938
R. L. Stevenson	An Inland Voyage	1890
Sir J. Squire	Water Music	1939
Tirphys .	Practical Canoeing	1883
S. P. Triana	Down the Orinoco in a Canoe	1902
W. Van Til	The Danube Flows Through Fascism	1938
B. Wicksteed	Joe Lavally and the Paleface .	1948
F. Winkel .	Rough Water Canoeing	1938

APPENDIX 2

List of Canoe Clubs in Britain

I. MEMBERS OF BRITISH CANOE UNION:

Ancoats Lads Canoe Club Section	Manchester.
Army Apprentices School CC	Harrogate. Clapham,
Bedford CC .	Beds. Birmingham.
Birmingham CC	Petts Wood, Kent,
Bromley Senior Scouts CC	Bungay, Suffolk.
Bungay Rover CC	London, SEi.
Canoe-Gamping Club	Weybridge, Surrey.
Canoe Fellowship	Canvey Island, Essex.
Canvey Island CC .	Ickenham, Middx.
Chalfont Park CC .	Deal, Kent. London,
DealCC	NW2. Grange-o ver-
Haberdashers' School CC .	Sands. Leeds.
Lakeland CC .	Llandaff.
Leeds CC	
LlandaffCC	

Manchester CC	Manchester
Midland CC .	Leicester.
North West Kent CC .	London, SE 2.
Richmond CC .	Twickenham, Middx
Royal CC .	Chiswick, London.
Royal Marines CC .	Southsea, Hants.
Royal Masonic School CC	Bushey, Herts.
South West Canoe Association .	Weston, Somerset.
Twickenham CC	Twickenham, Middx.
W. Yorks & N. Notts CC .	Bawtry.
Webbe CC	London, E 2.
YorkCC .	Clifton, York.
NE Div. YMCA CC .	Consett, Durham.

II. MEMBERS OF SCOTTISH CANOE ASSOCIATION:

Clyde CC	Glasgow.
Forth CC	Edinburgh.
Scottish Hostellers CC	Glasgow.
TayCC . .	Perth.

OTHER CLUBS:

Bolton Lads CC	Bolton, Lanes.
Cambridge University CC .	Cambridge.
Exeter CC .	Exeter.
Fleet & District CC . .	Fleet, Hants.
Lanca CC	
Osprey Canoe Fellowship	
Oxford CC .	Oxford.
Reading Sea Scouts CC	Reading.
Sidmouth CC .	Sidmouth.
Tiverton CC .	Tiverton.
Upper Thames CC .	
Wareham Dragon Club CC	Wareham, Dorset.

APPENDIX 3

British Canoe Union Itinerary No. 121

THE STRATFORD AVON

The Avon is canoeable from Rugby, but the stretch from that town to Warwick should be undertaken only during the winter or when the river is very full, as otherwise there will not be enough water. It flows through lovely country and is accessible easily from Rugby, Coventry or Birmingham.

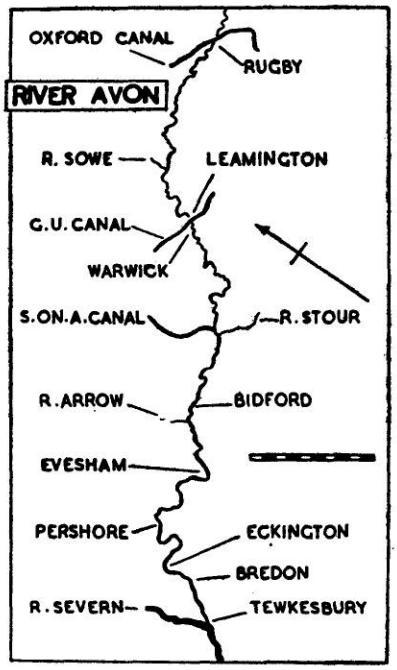

Fig. 10. *Map of the Stratford Avon*

Such great houses as Guy's Cliff and Stoneleigh lie close to the river and add interest to the cruise. A journey down the Avon from Warwick to the Severn presents some of the most pleasant of English scenery, some fine old towns and varied water conditions. A century or so ago the Avon was navigable up to Stratford for vessels of 50 tons, but for many years several of the locks have been derelict and the head of the navigation is Pershore.

Thus the Avon varies from rocky rapids and shallows, marking the sites of locks and weirs long since broken down, to deep, sluggish reaches where weirs and mills hold up the water. Above Evesham the views are in general enclosed, although occasional glimpses may be had of distant hills. Below Evesham the scenery is more open and is dominated by the isolated mass of Bredon Hill. The cruise takes one past old market towns like Warwick, Evesham and Tewkesbury

OS 131, 132, 144; Barth. 19, 13 or Birmingham District Map (½inch).

For permission to pass through Stoneleigh Park apply to the Estate Office, Stoneleigh Abbey. Permission to pass through Warwick Castle Park has lately been withheld; formerly permission was obtainable from the Estate Office, Warwick.

GRADING I—II at rapids, derelict locks, weirs, etc.; long stretches smooth and deep.

Camp sites are easy to find all the way down.

Miles

0 Rugby, Avon Mill. Inn; stn. ½ mile; shallows,
Q½ Newbold-on-Avon Bridge. Good starting place.
1½ Low weir. Care needed in low water.
QV Weir. Short portage L or R; shallows below.
2 Railway Bridge.
2½ Island. Keep R; small weir at end of it. Portage R.
3C Little Lawford. Weir L shootable in most states of water, but no headroom in high water; footbridge 200 yards downstream; R arch usually possible.
6½ King's Newnham Mill (disused) and footbridge. Take L branch of river above mill.
6V Church Lawford Bridge.
8V Bretford Bridge. Keep L—barbed wire on R.

Miles

9 **C** Marston Mill. Portage R above mill into side channel; sluice on L branch can sometimes be shot.

10 **M** Brandon railway and road bridges. Just above and below the road bridge are two pipes; unless water very high, portage necessary; land R, cross bridge and enter water L below second pipe.

12 Brandon Silk Mill. River forks; take R channel; portage R at small weir.

14 Ryton Mill. Portage L at mill through gate.

14 **M** Ryton Bridge. Hotel L close to river; barbed wire across river; shallows.

17 **M** Bubbenhall Mill. Portage R at weir above mill; private water near mill.

18 **C** Bubbenhall Bridge.

19 **C** Coach Bridge. River enters Stoneleigh Park.

20 **M** New Bridge, Old Bridge.

21 Confluence of River Sowe.

22 **M** Stoneleigh Abbey. Keep to main channel; portage R at weir by boathouse; short distance below portage R at second weir.

24 Ashow. Footbridge; shallows.

24 **V** Chesford Bridge, Blackdown Mill.

29 Guy's Cliff Mill. Weir unshootable; portage R through yard; Guy's Cliff House beyond.

30 **M** Portobello Mill and Road Bridge, Leamington. Portage R into side channel at weir; confluence with River Learn. Town and Warwick (Milverton) Stn. near.

31 Aqueduct of Grand Union Canal. Easy portage from canal to river.

Railway Bridge.

32 **M** Warwick Bridge. Stn. **M** mile; spiked chains across bridge arches.

32 **M** Warwick Castle and Park. Weir unshootable; Portage L. Shallows and submerged trees near Castle; if permission to pass through is refused, a long portage of several miles round the Park is required.

37 Barford Mill (building now demolished). At weir portage R is shortest.

37 **C** Barford scours and Bridge. River shallow and fast.

Miles

42 Hampton Lucy Mill, Charlcote House and Park. In high water portage R at first weir, otherwise down main stream and slide over bank by second weir near mill. Fine Tudor house, now National Trust, on L; river may be blocked by rushes in summer.

42**M** Confluence of River Dene. Shallows.

44**V** Alverston Mill. Portage into side channel at first weir; weir shootable at high water but beware of stakes at the top.

48 Stratford Bridge. Formerly junct. of Stratford-on-Avon Canal below bridge. Land R above; WR stn. **M** mile R through town.

48**M** Stratford Mill. Portage L of weir.

48**V** Railway Bridge. Shallows from weir to bridge; MR stn. adjoins but few trains.

49**V** Confluence of River Stour.

51 Luddington Lock. Derelict; only remains of masonry.

53 Binton Bridge. Welford Stn. R, few trains.

54**M** Welford Mill. Unless river high part of weir is dry and canoes can be pulled over; remains of two old locks 200 yards apart; look out for submerged masonry.

56**C** Bidford Grange. Rapids caused by broken-down weirs and lock call for care.

57**V** Bidford Bridge. Stn. 1 mile R, few trains. Take L arch and keep L through sluice; fast water but easy.

58**M** Rocky shallows at low water.

59 Confluence of River Arrow.

59**V** Cleeve Prior Mill. Broken weir with fast water.

61**M** Harvington Mill. Stn. R **M** mile. Weir broken on L; sill remains, leaving hole with little headroom and fallen masonry beyond; shallows above; caution, line down.

62 Fish and Anchor Inn. On L bank; a ford of the stone causeway type usually makes it necessary to wade and pull canoe over; shallows below.

64**M** Offenham Ferry. Inn on L bank.

65 **V** Evesham Lock. Not working. Rollers on R of weir. Evesham Bridges. Town has attractive Tudor houses and is a pleasant country town. Stns. **M** mile.

69 Chadbury Weir. Rollers on R of weir; old lock.

Milts

72 Fladbury Weir. Weir sometimes shootable on L in high water; otherwise slide over dry part of weir; William Sandys, who first made the Avon navigable, lived here.

75**V** Wyre Mill Lock. Out of use; several weirs; portage L over grass or across island.

76**V** Pershore Lock. The present head of the navigation on the Avon; portage L into side stream; weir may be shootable on extreme L. Navigation not under Docks and IW Executive.

77**C** Pershore Staunch. Sluice gates may be closed to provide a head of water for craft going to the mill.

81**M** Defford Lock. Portage over low bank on L of weir; Stn. near railway bridge (Worcester/Gloucester line).

83**C** Eckington Bridge. River winds around Bredon Hill; stn. \ mile on L.

85**C** Strensham Lock. Portage L above weir or R at weir.

88**C** Twyning Ferry. Inn on R.

90**V** Tewkesbury Lock. To the River Severn; opens only at each hour, 6d toll; stn. on L through town,

91**C** Confluence with River Severn. Fine view of Tewkesbury Abbey across flat meadows.

(Author's Note:—The information in this specimen itinerary, as in all others, needs to be amended and brought up to date periodically.)

APPENDIX 4

INTERNATIONAL SYSTEM OF RIVER GRADING

I. EASY.—Occasional small rapids, waves regular and low. Correct course easy to find, but care is needed with obstacles like pebble banks, protective works, fallen trees, etc., especially on narrow rivers.

II. MEDIUM.—Fairly frequent rapids, usually with regular waves, easy eddies or whirlpools. Course generally easy to recognize.

III. DIFFICULT.—Rapids numerous, and with fairly high, irregular waves, broken water, eddies and whirlpools. Course not always easily recognizable.

IV. VERY DIFFICULT.—Long and extended stretches of rapids with high, irregular waves, difficult broken water, eddies and whirlpools. Course often difficult to recognize. Inspection from the bank nearly always necessary.

V. EXCEEDINGLY DIFFICULT.—Long unbroken stretches of rapids with difficult and completely irregular broken water, submerged rocks, very difficult whirlpools and very fast eddies. Previous inspection absolutely essential.

VI. THE ABSOLUTE LIMIT OF DIFFICULTY.—All previously mentioned difficulties increased to the limit of practicability. Cannot be attempted without risk to life.

NOTES

The above numbers are usually prefixed by the letters RW or WW meaning Rough Water and Wild Water respectively.

RW III should be regarded as the limit for inexperienced canoeists and only tackled in company with experts.

Sometimes two numbers are used, e.g. II—III, when a particular length of river comes between two grades.

A rise or fall in water-level may make a river easier or more difficult than the grading allotted to it. The latter is ordinarily given for favourable conditions.

Broken water is water breaking on rocks or reefs.

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