SKIS IN INDIA

A HANDBOOK FOR THE SKIER IN INDIA.

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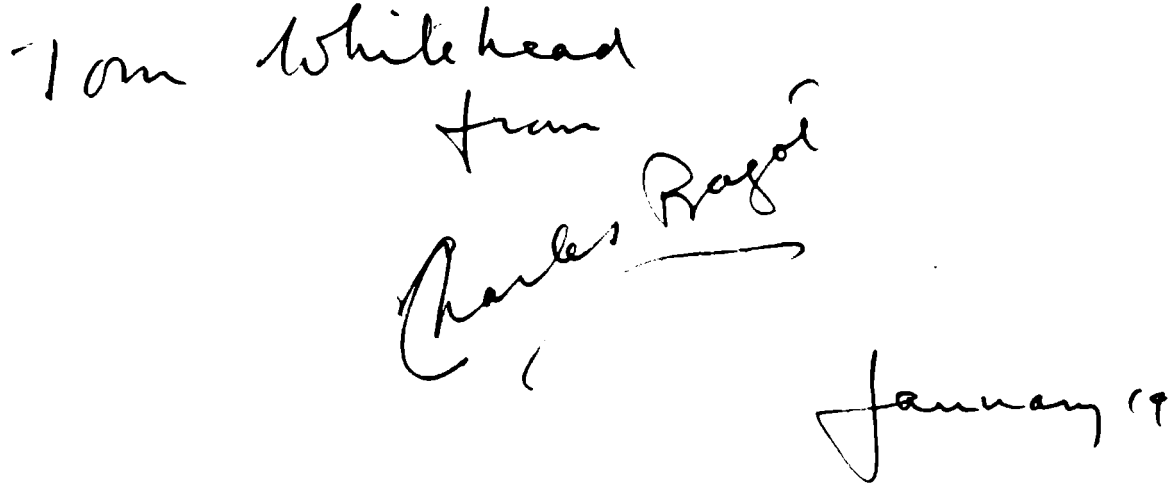
H. C. BAGOT.



FOREWORD.

I am asked to write a Foreword to Charles Bagot's, 'Handbook for the Skier in India', a task which I accept with readiness—combined with a feeling of responsibility for launching such a much-needed volume into the Snow. I have skied with Charles since I was a master at Harrow and he a boy of sixteen, when we started the Harrow Marmots', a club whose members went out every year to the Glacier regions of the Alps, lived in the Huts, and accomplished ambitious tours under our own guidance, putting our trust in map and prismatic compass. Even at that age Charles was a polished Skier. He had been taught by a Master-Craftsman among the Arlberg Ski-teachers. He was the kind of skier I liked to have with me in the high mountains—fast enough to enjoy the great easy stretches of the Oetzthal glaciers, but absolutely steady when it was a question of negotiating an ice-fall, or of competing with mist or storm or darkness. His technique was then, and is now, correct 'Arlberg', well-balanced, graceful and resistent to fatigue.

I met him again on the Snows of Kashmir as soon as he appeared on the Indian Scene. It was natural that he should race and in due course become Ski Champion of India. It was, too, like him to take on the rather thankless job of editing a recent Ski Club of India Annual.

This winter (1944/45) found him as chief Instructor to the R.A.F. Aircrew Mountain Centre. Crews were put through their paces on the practice Slopes and on the wood runs by Charles and his team, before being handed over to me at the Khillan Hut. It was my duty to put his horses over all the dirtiest fences I could find. There are, as may people know, some difficult and steep runs between the summit of Apharwat and the Hut. It is a tribute to his sound and rapid teaching that, after ten days, I could take the crews down the steepest runs I could find on the mountain without mishap. Their descents were not always according to the book, because it is not easy to translate principles, however sound, into practice ; but they were often very fast for beginners.

It is not until you begin to teach the technique of a sport like Skiing that you really begin to worry why things go right and why wrong, and I am convinced that what he says in this little book will be very well worth studying, being the experience of one who is both an accomplished skier and a first class teacher.

R.L. Holdsworth

Dehra Dun. 1945.

PREFACE.

I wish to thank Major K. C. Hadow for his valuable suggestions included in General Safety Notes, and Mr. R. L. Holdsworth for 'Avalanche Precautions'.

I am indebted to Capt. C. W. F. Noyce for his description of the big avalanche which fell at the end of February 1945.

Acknowledgments are due to the author and publishers of 'Downhill Skiing' for the inclusion of several action photographs and to Lt. Col. D. R. Horsfield for photographs of 'The Traverse' and 'The Jerked-Christiania.'

The assistance rendered by members of the Aircrew Mountain Centre in helping to draw up the original Handbook has been much appreciated and permission to reprint extracts from it is gratefully acknowledged.

H.C. Bagot.

November 1945.

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PART II

Indian Skiing Fields

INTRODUCTION TO PART I

Lt.-General Sir Roger Wilson writes "The Ski Club of India Annual '42—'43 contained two articles on two different methods of learning to Ski, by two people who obviously know their stuff. A third expert who writes extensively on the same subject, advocating yet a third method, is Arnold Lunn.

Between them these three, who, knowing all about the subject can find hardly a single point of agreement, constitute the biggest menace to would be learners in the Ski world."

And so these notes are offered, tentatively, as a medium through which uniformity of instruction may be attained for the Himalayan Skier. They consist mainly of extracts from the Instructors Handbook of the Aircrew Mountain Centre which was prepared as a result of ski-teaching experience gained during 1944 and '45.

The three weeks course was divided into three phases, described in detail later in these notes.

Experiments were carried out with the 'parallel only' and 'open' techniques, but reversion was invariably made to the modified Arlberg system, which produced quicker and sounder results on the type of snow and terrain encountered locally during the winter months. And this, I think, is important: a style suited to the rolling open slopes of the Bernese Oberland is not likely to be suitable for use in the steep-sided and often rough, valleys of the Arlberg—or Gulmarg. With the increasing interest in the use of ski on Himalayan Expeditions—both major and minor—it is felt too that a technique which lends itself to controlled skiing would be an advantage in glacier country and on untried ski fields. Terrain inevitably dictates technique.

In accordance with the more recent ideas of some ski-teachers, the practice of teaching the side-slip before the snow-plough was given a trial. This method furnished no proof

of its superiority and was discontinued. The side-slip swing, although not a part of the Arlberg technique, it included on the advice of R. L. Holdsworth as it has special uses in certain types of Himalayan Skiing Country. The telemark and 'open' (or 'scissor') Christiana are not described in detail as they are felt to be alternatives to, and not replacements for, the Stem-Christiania; they are also in opposition to the mechanical principles of the Arlberg system, which demands a *forward* lean during turns. Their uses in exceptional snow conditions are of course readily admitted. Great emphasis is placed on the fact that in the Basic Syllabus, set out later, each new turn is built up on the foundation of the proceeding one, thus elements of the snow-plough still persist in the Stem-Christiania.

Detailed descriptions of other turns and manœuvres outside the scope of the Basic Syllabus have been left out. No apology is offered for this omission as these notes are intented primarily to help with the instruction of the novice skier.

No advice on the selection of non-essential equipment is proffered, as a wealth of information on this subject is available from brochures and past numbers of the Ski Club of India Annual.

PART II

This consists of descriptions of the less well known Indian skiing Fields. Where extracts from the Ski Club of India Annuals have been included, the title of the article, the year, and the name of the author is printed at the beginning of the article. Where necessary, for reasons of brevity, some articles have been re-edited slightly to conform to the requirements of this book.

PART I

THE BASIC SKIING SYLLABUS.

PHASE 1. (*DAYS 1—9*)

Day 1. Care of skis, waxing, carrying, putting on and removal of skis, walking on the flat and up gentle slopes, climbing by traversing, the shuffle-turn, downhill running position and running over easy slopes, falling and methods of getting up, side stepping and half stairway step, loosening up exercises and the kick turn on an easy slope. Herring Bone

Day 2. Free-running and revision.

Day 3. A.M. Downhill running on deep snow in single track and on broken snow with bumps and hollows. Loosening up exercises. The snow plough position on the flat and on very gentle slopes.

P.M. 1st Aid to skiing casualties with improvised equipment. Lecture by M.O.

(a) Application of splints, bandaging, method of carrying patient over snow.

(b) Construction of a skiing casualty sledge.

Day 4. Snow-plough revision, Snow-plough turn, ~~Herring-bone step~~, straight running practice.

Day 5. A.M. Downhill traversing position. Side-slip. Stem-turn. Practice of these three in P.M. without supervision.

Day 6. Linked stem-turns on fairly steep slopes.

Day 7. A.M. Wood runs (snow-plough and stem-turning practice).

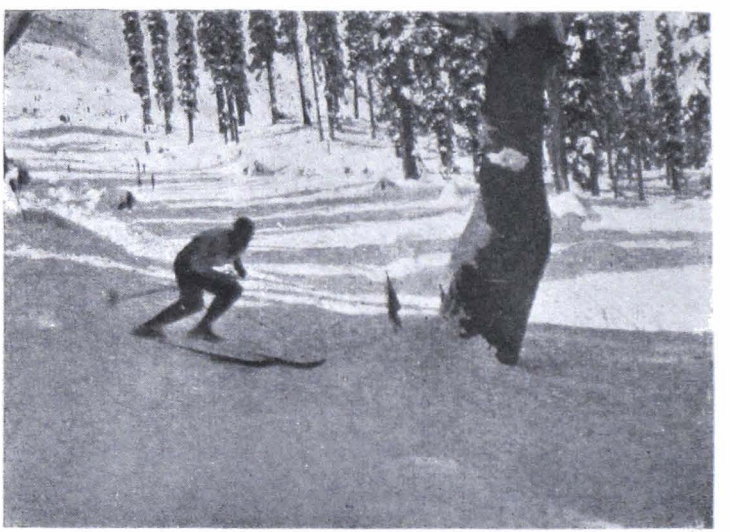
P.M. Check up of all points learnt, on practice-slope with Instructor.

Day 8. Stem-christiania.

Day 9. A.M. Beta start. Follow Instructor to Hut. Wood run in P.M. (Members will be tested on this run) Stem-christiania revision. Evening. Introductory talk on ski-touring and avalanche and weather precautions.

ADVANCED SYLLABUS (TOURING AND RACING.)

PHASE 2.	DAYS 10 to 17.	Wood running, local touring up to and including Beta Start, with reversion to Practice Slopes as required (Tours to the Orchard, Lilly white shoulder, Mary's shoulder, Gaderene and Lone Tree may be made by advanced members from Day 10 onwards).
PHASE 3.	DAYS 18 to 20.	Stay at the Ski Club of India Hut at Khillan. Longer tours and an ascent of Apharwat if practicable.
	DAYS 21 & 22.	Advanced Tests and Races.



VORLAGE: a Stem christy to the left.

AIRCREW MOUNTAIN CENTRE SKIING TESTS.

DAY 9.

1. Four linked Snow Ploughs.
2. Two linked Stems in broken snow including traverse.
3. Two Stop Stem-Christies, Right and Left.
4. Two Kick Turns in deep snow on steep slope. Method optional.

DAY 21/22.

1. Four linked Stem Turns on steep slope in deep snow.
2. Two linked Stem Christies in moderately deep snow on steep slope.
3. Schuss from a point below "Booklands" to flat (No fall allowed).
4. Timed run to be arranged on the spot by an Instructor.

NOTE.—The above tests conform in the main to the Ski Club of Great Britain Q. 3 and Q. 2 Tests respectively.

INSTRUCTIONAL NOTES FOR DOWNHILL SKIING.

Days 1 and 2.

I. *Normal Downhill running position.* (See photo No. 1).

The body should be relaxed and the arms held comfortably forward on each side of the body to aid balance. The sticks should project backwards and sideways. The feet should be kept close together, with one foot slightly in advance. It is important that the whole body should be inclined forward, so that a line drawn through nose, knee and tœ will cut the slope at right angles. (See Photo No. 2) To effect this, incline the shins forward. Do *not* bend forward from the waist. Now push the knees forward and the body will then be correctly 'sprung'. It should always be remembered that the chief function of the knees in skiing is to absorb shock: keep them slightly bent and allow them to act independently when moving over rough ground.

On undulating ground the skier should endeavour to keep the upper part of the body travelling in one plane, whilst the irregularities of terrain are countered by flexion of the leg joints—particularly the knees. In Photo No....2.....it is supposed that the Skier has crouched to absorb a sudden rise. Once over the crest of the bump he will push his legs down into the hollow and resume the position shown in Photo No. 1.

The position shown in Photo No....2.....is also correct for running over rough, frozen or rutted snow. In this case the feet may be about 8 inches apart and the Skis canted slighly onto their inside edges (to guard against 'catching' an outside edge, which usually means a fall.) do not advance either ski. On this type of snow, *lateral* stability is the Skier's first consideration—this position will ensure it. It will be noticed that in Skiing the line of the back and the line of the shins are parallel.

VARIATIONS FROM NORMAL RUNNING POSITIONS.

DAYS 3.

1. When running from fast onto slow snow the skier will be checked. To prevent himself from being thrown forward he should lower the centre of gravity by bending the knees and push one foot forward—this will give him greater fore-and-aft stability.

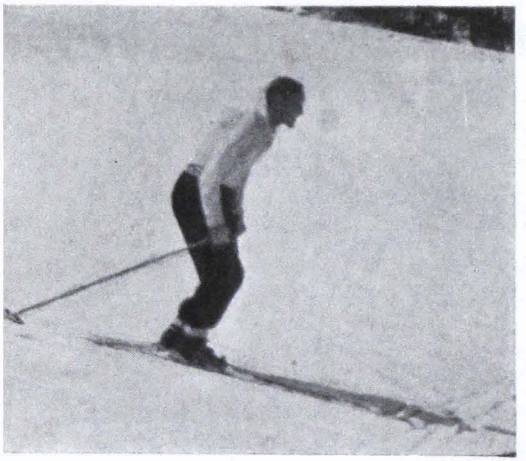
2. Running from deep, slow snow onto hard, fast snow the skier will tend to be left behind. To avoid a backward fall he should throw his wright forward and crouch slightly at the moment of transition.

3. When crossing a sharp depression (such as a sunken lane) he should lunge forward with one foot just as the hollow is reached. The heel of the rear foot way be raised to facilitate this. The object of this action is (a) to increase the length of the 'wheel-base' thus ensuring fore-and-aft stability, and (b) to distribute the weight of the body over a longer, and therefore more flexible, surface This flexibility enables the skis to conform to the contours of the hollow and prevents the points from digging in. Throughout this expedient the back should be held at right angles to the slopes of the depression. If momentum is lost on the far bank of the obstacle, the Skier should reach forward with his arms. This type of obstacle must be run in Single track.

4. When running in deep powder snow, the rule of using the knees as independent shock-absorbers does not apply, and the skier should run in single track with one knee locked behind the other. The body should be fairly upright and inclined forward.

5. If, when running through deep snow, the points tend to submerge, with a consequent loss of speed, the Skier should sit back, weight the heels and press upwards with his toes against the toe straps. The arms, held well forward, will counteract the tendency to fall backwards.

PHOTO No. 1



CAPT. G. H. BAGOT.

PHOTO No. 2

PHOTO No. 3

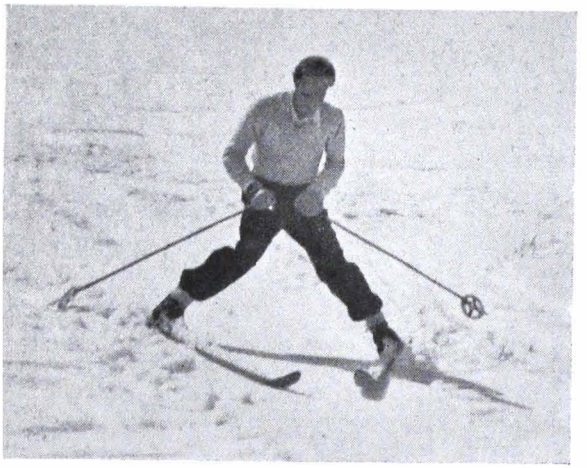


PHOTO No. 4

THE SNOW-PLOUGH. PHOTO No. 3. DAYS 3 & 4.

Snow-ploughing is a method of controlling speed or stopping on moderate slopes while travelling straight downhill. The snow-plough should be used sparingly as its use tends to make the ski-runner over cautious.

Weight the skis evenly, keep the ski-points level and only a few inches apart, thrust the heels outwards (almost as far as they will go), 'edge' the skis very slightly inwards, keep the hands comfortably on or beside the thighs, *keep the seat in* and upper body straight, push each knee far forward avoid bending or raising the elbows, arch the ankles outwards slightly. The general position need not be strained; relax as much as possible (see Photo No. 4. Side view of skier running downhill in snow-plough position).

To start moving from the snow-plough position; flatten the skis and bring the heels in slightly. *To stop*: reverse the process. That is all there is to the snow-plough.

THE SNOW-PLOUGH TURN. PHOTO No. 5. DAY 4.

(A turn to the RIGHT from the direct downhill snow-plough position will be described.)

Preliminary. Draw the LEFT shoulder back.

Slowly transfer the weight to the *left* ski (which should be slightly on its inside edge) and allow the *left* shoulder to rotate to the *right* in time with the change of direction of the skis. Do not hurry this movement. While the turn is in progress the *right* knee will be pushed in towards the slope in order to free the inside edge of the right ski completely. The upper body should be leant outwards from the slope to *unweight* the right ski and *weight* the left ski. Remember that if a ski is weighted and edged it will take the skier in the direction in which it is pointing. This does not mean that the inside ski is lifted, but rather that it is rested flat upon the snow.

By reversing the process, a turn to the left may be accomplished. After practice it will be found possible to link up a chain of these turns in snow-plough position. *Warning.* Do not attempt to turn through a large number of degrees with this turn: it is not intended for that purpose. Throughout the basic syllabus, it will be seen that the final shoulder position at the end of one turn is correct for the commencement of the next. See Photo No. 6.

Note. During the early phases of the snow-plough turn, stem-turn and stem-christy, the ski on the outside of the curve should be slightly in advance. This position is reversed in the latter stages of these turns i. e. the eventual inside ski should be brought forward soon after the line of direct descent has been passed.

THE TRAVERSE. PHOTO No. 7. DAY 5.

Feet close together (may be separated on very steep slope), upper foot advanced a few inches, knees, pushed forward and in towards the slope, weight mostly on lower foot. LEAN OUT. It has been said earlier on that the primary function of the knees is to absorb shock: their secondary function is to apply, control and change 'edge'. While traversing, skis should be edged in towards the hill. On soft snow edging should be slight: on hard icy snow a much greater degree of edging is required.

Any tendency to side-slip, or drift downwards off-course, may be countered by the use of more edge and by advancing either shoulder according to individual preference. Experiment alone will decide for you. Remember that the disadvantage of advancing the upper shoulder is that it leaves the body in an incorrect position for the beginning of a turn (see final sentance in 'the snow-plough turn'.) See photo No. 8 showing lower shoulder advanced. This is the method advocated by the Arlberg school.

THE STEM-TURN. SEE PHOTO No. 5 DAYS 5, 6 & 7.

This turn differs in the main from the snow-plough turn in that it begins and ends in the *Traversing* position (See page 11), thus swinging through a greater arc. It also incorporates the ABSTEM (Photo No. 6) which is found in embryo in the snow-plough turn.

To begin a stem-turn from a traverse it is necessary to shift the weight for a moment onto the upper ski. Simultaneously the unweighted lower heel is allowed to slip down the slope until *half* a snow-plough is obtained; at the same time the upper shoulder is drawn back (Photo No. 6) to increase the scope of the coming shoulder swing, which is in reality a sort of unwinding movement. This is the abstem. The weight now reverts without a pause to the lower foot while the *upper* heel is slid out to complete *the other half of the snow-plough position.* Now with this whole position start to 'unwind', gradually transfering the weight back onto the initial upper foot so that when in the straight downhill snow-plough position the weight is momentarily divided equally between the two feet. From here continue the rotary shoulder action as you would for a snow-plough turn, remembering to LEAN OUT.

The 'initial' upper foot has now become the lower foot, and as you lean outwards from the slope will carry more and more of your weight as the turn nears completion.

In order to get into the traversing position in the new direction, thus completing the stem-turn, the eventual upper foot is drawn in beside the lower one and slightly forward of it. This is possible because there is little or no weight on this new, upper ski and has'nt been since the straight downhill position was passed. Here this ski and to *change edges* from inside to outside in order to make possible this final phase of closing the skis into the traversing position. The eventual lower ski, however, continued throughout on its inside edge once the snow-plough position had been adopted (see the last two sentences of para. 1 of the snow-plough turn)

PHOTO No. 5

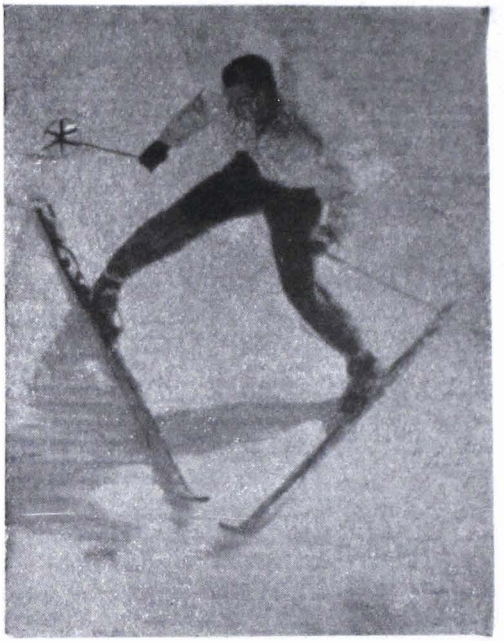


PHOTO No. 6

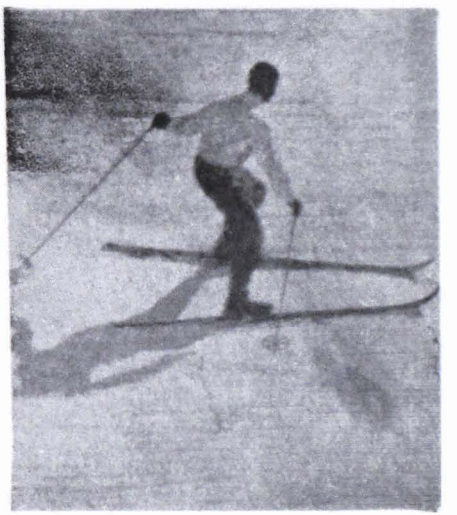
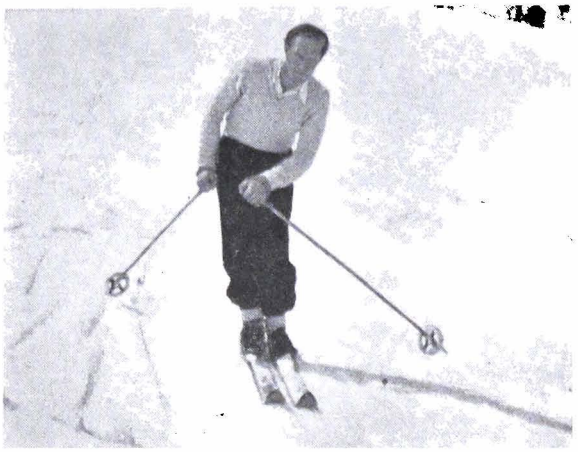


PHOTO No. 7

PHOTO No. 8



This changing of edge is brought about by pushing the eventual upper knee in towards the slope; this will release the grip of the inside edge on the snow and permit the ski to slide in and rejoin its fellow in the traversing position.

Stem-turns can be linked with either a short or long traverse in between. The Stem-turn is a curve: do not attempt to make sharp corners with this turn while practising. The turn is not considered to have been completed until you come to a halt in traversing position or until you are running under complete control in this position prior to making the next turn.

THE SIDE-SLIP. (AT LOW SPEED) DAY 5.

From the traversing position, relax the degree of 'edging' until the skis begin to 'broadside'. If momentum in the forward direction is maintained the will slide both forwards and sideways i.e. downhill. Keep the weight on the forward part of the feet to prevent the points of the Skis from swinging uphill. To control the slip edge the upper ski slightly. To stop, push the knees forward and inwards—weight the heels and use more edge on both skis. Lean out while side-slipping. Separaet the Skis for stability until confidence is gained.

THE STEM-CHRISTIANIA. DAYS 8 & 9.

This turn may be described as a combination of the Stem-turn and the side-slip done in a higher tempo.

With sufficient speed, and snow conditions conducive to skidding, a stem-turn will develop into a stem-christy. In practice the skid should be of long radius and with the feet fairly close together in the latter stages of the turn. The skid should not be allowed to deteriorate into a broadside straight down the hill with skis wide apart.

In this turn the abstem is also employed. It tends to develop into a slight check, or skid into the hill, the weight being fairly evenly distributed between both feet. The preliminary shoulder action (during the abstem) should be done as a distinct and smooth counter-swing, as it was in the previous turn, and while this is being done the skier adopts a moderate snow-plough position. By leaning forwards and outwards, the skier will find that his skis begin to point down hill and just before the critical, straight downhill position is reached he must straighten up and with a powerful and measured shoulder swing shift his weight onto the outside ski. At this moment the skier is practically upright but leaning forward and outwards. Almost immediately the weight of the body is absorbed again by the knees which continue to be pushed forward throughout the rest of the turn. As his weight is shifted to the outside ski, the inside edge of the eventual upper ski is changed, to enable the skis to run together undindered towards the finish of the turn. The skier must guard against over-swinging and should maintain a reserve of shoulder swing so that in the latter stages of the turn his shoulders are square to the line of travel. From beginning to end this turn should be done with the skis as flat as possible and this point can only be learned by experience. There are no pauses in this turn and, to sum up, here again is the sequence in condensed form:—

Counter-swing and snow-plough position—body projected forwards and outwards with flattened skis—rise and swing—change edge—bring skis parallel—sink and push knees forward—traversing position.

PARALLEL CHRISTIANIA.

(Although a part of the Arlberg system this turn is not included in the Basic Syllabus days 1—9).

The parallel christy represents the highest art in downhill ski-running. It looks simple and contains no 'aids'. The abstem and the stem are omitted.

The requirements of the turn are hard or light powder snow and high speed. The turn does not appreciably check the speed and should only be used to change direction a few degrees right or left from the direct line of descent.

It will be found best to approach this turn through the medium of the already learnt stem-christy. Eliminate the stemming position, keep the skis even flatter, lean well outwards and forwards and a carry out a slow and deliberate shoulder swing with a modified 'up, around and down' movement of the body—correct timing is essential. In a turn to the right the right foot should be advanced at the beginning of the turn and vice versa. The skier should practice until he can keep his skis parallel and close together throughout the turn. The track left by a parallel-christy should be of longer radius and narrower than that of a stem christy.

Note. A criticism of the Arlberg system is that it is often necessary to contort the body and adopt unnatural positions. This is unhesitatingly denied, for provided that the *correct* positions for any given turn are adopted, that turn will come round as if on rails and the body or limbs will be no more strained than they are when riding a horse, Emphasis is placed on accuracy, rhythm and smoothness : incorrect execution will of course nullify the effect of technique in any sport.

In favour of the system it should be noted that the beginner is only asked to add a little to what he has already been taught and perhaps, in the more advanced turns, modify this knowledge slightly. He is neither required to forget what he has learnt previously nor assimilate, at one bite, a completely new set of mechanical principles, bearing no relation to former procedure or subsequent practice.

THE SIDE-SLIP SWING OR CHECK-CHRISTY (AT HIGH SPEED).

(Not included in the Basic Syllabus, or the Arlberg technique).

At high speed. To induce a *sudden* side-slip to lose height, or to avoid an obstacle, or to turn sharply into the hill. Flatten the skis (kept close together), swing the hands over to the inside at the same time raising the hips and jerking them outwards over the lower ski (if you swing your arms in, your hips will automatically swing out), crouch slightly. The amount and *direction* of the skid or turn is controlled by 'edging' and *weighting of the front or back of the skis.* If the backs are weighted the points will tend to turn up into the hill and vice versa.

GUIDE TO INSTRUCTORS: THE CHECKING OF COMMON FAULTS.

Always Choose a suitable slope.

Faults in Normal Downhill running position.

(a) Body unrelaxed.
(b) Too much forward bend from waist resulting in straigtened legs.
(c) Hands held unnaturally.
(d) Feet too wide apart.
(e) Tendency to fall backwards due to backward lean. This fault needs constant emphasis: pupils should never fall backwards whilst straight running.
(f) Allowing an outside edge to catch thus causing a sideways fall.

Traversing Faults.

(a) Straight legs.
(b) Failure to lean the upper part of the body outwards.
(c) Failure to lean the knees inwards.
(d) Upper foot not advanced.
(e) Bad judgment in choosing angle of traverse.

Snow—plough.

(a) Ski-points too far apart.
(b) Heels not far enough apart.
(c) Too much edging Knock knees.
(d) Body leant forward from waist. This is probably the worst fault as it straightens the legs and throws the weight back. With straight legs it is impossible to absorb the shock of a sudden check.
(e) Bending the elbows upwards and outwards and swinging the sticks forward. This is inveriably accompanied by a forward bend of the body.

The Snow--plough turn.

(a) Catching the inside edge of the upper ski through failure to push the upper knee in towards the slope.
(b) Too much weight on the upper ski.

(c) Failure to lean out.
(d) Leaving the inside ski behind.

The Stem—turn.

Faults as in a, b, c, d, for snow-plough turn.
(e) Tendency to omit abstem.
(f) Failure to complete turns : especially when linked.

The Stem—Christy.

Faults as in a, b, c, d and e, f, above :
(g) Tendency to 'broadside' vertically downhill.
(h) Omission of 'up-around-down' action of body.
(i) Habit of lifting the inside ski.
(j) Habit of leaning in with consequent over weighting of inside ski.
(k) Habit of leaning back and steering the skis round : they should be led round, with the weight over the points.

Parallel Christy

(a) Failure to flatten skis.
(b) Failure to advance eventual inside ski at once.
(c) Absence of forward rise and downward lean.

The side slip swing and check—christy.

(a) Tendency to let the points of the skis swing too much uphill resulting in a slide backwards. This is due to weight being too far back.

NOTES ON THE ADVANCED SYLLABUS AND OTHER TURNS, STEPS AND JUMPS.

A brief description of the *Parallel christiania* has been included in the instructional notes for downhill skiing as it is evolved from the stem technique and is very definitely a part of the Arlberg school of ski-teaching. It is not intended that this turn be taught except to advanced pupils at the end of the 3 weeks course.

The side-slip swing, although not included in the Arlberg syllabus, is particularly useful in wooded country and for negotiating a gully when it is only possible to ski on one side of the gully. Unexpected obstacles may also be avoided by this method. The side-slip swing may be taught when convenient after the basic syllabus has been completed.

Field-Jumps, step turn, skating step, racing steps, open christiania, telemark, lifted-stem, lifted stem christie and stick christie may be demonstrated to anyone interested after completion of the basic syllabus. It should be explained however that these manœuvres are virtually skiing luxuries and do not form part of the accepted technique.

It is again stressed that adherence to the stem-technique up to the correct execution of the stem-christiania is most likely to repay the novice skier.

Photographs No's. 9 and 10 are included in this book for interest only. They do not form any part of the 3 week course.

The turn shown is a '*Jerked-christiania*' (middle and end phase.) This is sometimes referred to as a 'reverse shoulder swing', which, as its name suggests, requires a 'negative' shoulder twist as opposed to the 'positive' swing found in each stage of the Arlberg sequence of turns. A more accurate analysis shows that the turn is actuated by shoulder *re*-action.

Somewhere between these two extremes of Stem-christy and Jerked-christy lies the *Open Christiania*—a turn initiated by a divergence of the ski-points and weighting of a flattened

PHOTO No. 9

PHOTO No. 10

PHOTO No. 11.

inside (or eventual upper,) ski. It differs in three main ways from the 'closed' group of turns. The inside ski is weighted, the reverse shoulder leads at the start of the turn and the skis diverge at the points and not at the heels. (Broadly speaking 'closed' turns are those in which the points of the ski converge: 'open' turns are those in which they diverge).

It is interesting to note from the instructional point of view that neither of these turns, the 'Jerked' or the 'Open' are approached through knowledge of a previous turn nor are they succeeded by turns of which they form a part.

In deep heavy snow or light crust, the cutting action of the *Telemark* is an advantage. The stem or lifted-stem can do the job as well but with a greater expenditure of effort. The telemark is not quite such an accurate turn as the stem and its chief disadvantage is that there is a minimum of lateral stability to counter irregularities. It is not included in the 3 weeks course as throughout this course there is insistance on 'two footed' skiing : recovery is extremely difficult when one foot is separated from the other by a yard or more in the fore-and-aft direction. (The *telemark-lunge*, however, is encouraged for use in an emergency when fore-and-aft stability in jeopardy (see '*Variations from normal running positions*' *para 3.*) It is evident that a position which gives extreme fore-and-aft stability can scarcely be expected to give the same security laterally—and it is lateral safety that is required while turning. Once again the final criticism in the remarks on the 'jerked' and 'open, christy applies.

The Jump-turn is encouraged. In practice it was found to give the skier a sense of freedom and mastery of his skis. Short of a kick-turn it is the only method of linking downhill traverses in breakable crust and its inclusion is justified for this reason.

NOTES ON SKIING ON THE LEVEL AND UPHILL.

1. *Walking on the flat.*

Left foot—right stick. Slide the feet. Keep the hands travelling close beside the body. Don't straddle.

2. *Climbing up a slight rise.*

Increase the forward lean of the body from the waist and the ankles. You should be able to feel the strain in the back of the legs. Lift the feet slightly and place them down deliberately. The moment you begin slipping backwards choose an easier line : if necessary traverse.

3. *Traversing uphill.*

Lean out. Do not lean so far forward. Only apply 'edge' on hard snow.

4. *Half-stairway.*

Lead off with the top foot placing it about a foot above and forward of the lower one. Swing your weight forward over the bent knee and lift your lower foot up to and slightly forward of the top foot. Continue in the normal rhythm of walking. This method cannot be used for very long as it is tiring.

(Left foot and right stick more together in paras. 1,2,3 & 4.)

5. *Side Step.*

Useful for short steep ascents. With the Half-stairway it is useful for climbing above obstacles in the way of the natural line of traverse.

Method. As for the Half-stairway only bring the lower foot up to the upper one but not ahead of it. Do not advance the upper foot—lean out. The movement is similar to that produced on the Drill square by the command "So many paces, right (or left) close."

Upper stick and upper foot move together.

6. *Herring-bone.* Photo No. 11.

So named on account of the track this climbing step makes. The braking action is mechanically the same as for the

snow-plough the difference being that the points of the skis and not the heels are opened. Body position is the same as for *Climbing up a slight rise.* Raise alternate feet and with the toes turned outwards plod straight uphill. Keep the heels of the skis disentangled. The steeper the slope the wider must be the "V". Keep the sticks well behind you, and support the weight on them. Transfer the weight completely to one foot before attempting to move the other. Left ski—left stick move together.

7. *The Shuffle-turn.*

Shuffle round in a semi herring-bone position until the skis point in the required direction. Useful for linking traverses when the hill is not steep.

8. *Kick-turn.*

Most efficient method of doing an "about-turn" on skis. This turn is usually done against the hill.

Method. Stand firmly on the lower foot. Place the sticks out of the way of the upper ski. Draw the top foot back and let it swing forwards and upwards until the ski is vertical, with the heel touching the snow close to the point of the lower ski. Allow the top ski to pivot around and down until the point of this ski is beside and parallel to the heel of the lower ski. Transfer the weight to the upper ski, lean well on it and hook the lower ski round until it takes its position above and close beside it. You are now facing the opposite direction with both skis pointing forwards. As you hook the lower ski round ensure that you keep the point well clear of the snow. The corresponding stick must be swing round at the same time.

9. *Falling.*

Which ever way you fall it is necessary first of all to extract your skis from the snow and then bring them parallel *across the slope* close underneath you: then push up with the aid of your sticks. If you fall head downwards you will have to swing your skis over until you get them in position below you. It is useless attempting to get up until you and your skis are in the right position.

In the case of a bad fall, loosen your bindings (with the

point of your ski-stick if help is not immediately available) and try to release your feet. In an emergency, fall deliberately sideways and backwards so that your skis, and not you, are the first to meet the tree or rock you have been unable to avoid. Falling in an attempt to bring off a new turn or an old one under difficult conditions is fully justifiable. Without an occasional fall the skier has no gauge of his capabilities and may be running well below his actual standard.

GENERAL SAFETY NOTES.

1. The safest route by which to evacuate Khillan Hut is by descending through the trees below the hut and left handed of the Gujar Hut. On reaching the level of the Gujar Hut it is safe to traverse onto the Blue and Red Runs.

2. Usual avalanche lines coincide with gaps in the forest.

3. In general, ridges are safe from avalanches. Avoid gullies when possible. Walking across a slope on skis cuts it in half. If you have reason to doubt the safety of the slope, carry your skis. If you still consider the slope is dangerous, ascend or descend vertically in each others footsteps until a safe crossing place is found. In spring a slope which is safe at 9 A. M. may be dangerous at midday.

4. When skiing, particularly on the run down, do not allow yourself to become separated from your companions by more than 100 yards : it will take you a long time to climb back uphill and help a skier out of a bad fall which may have made it impossible for him to move.

5. Do not hurry the slowest member of the party, or start off from a halt the moment he has caught up. He must be given time to get his breath. If this rule is disregarded the unfortunate skier may become a liability to the party and can hardly be expected to enthuse about skiing in the future. When climbing do not walk on the heels of the skier in front.

6. The leader of a tour must leave word of his route and estimated time of arrival. The fact that a rescue party MUST start out to meet a belated party along its return route should be clearly understood by all skiers. A route book is kept for this purpose.

The leader should always carry a knife, wax, spare ski tip, 1st aid kit, spare socks, goggles, gloves, jersey, glucose or other sweets and some string. If long tours are undertaken, matches, a torch and a whistle are useful. A Compass and maps are seldom necessary around Khillan but should be taken on

expeditions further afield. A spare binding or repairing outfit is essential.

7. When passing other skiers, do so on the right if possible. A warning shout of ' passing on your *right* ' (or left) gives the leading skier some idea of what is happening.

A vague shout of " *track* " often results in the front skier pulling over to the side on which you have elected to pass him. On recognized runs a skier may shout for the track if he finds a stationary skier in the fairway.

Where there is plenty of room it is definitely the responsibility of the faster skier to keep out of the way of the slower member.

In tests, trials and races this policy is, of course, reversed.

The practice slope is the play ground (or class-room!) of the beginner. If more experienced skiers must use it, they should afford every courtesy and assitance to those less experienced, and they must not get in the way. All this, and much besides, is what is meant by Skiing ' etiquette. '

AVALANCHE—PRECAUTIONS.

A snow avalanche may start on any slope above 23°. Consequently slopes steeper than this should be treated with respect (E G. slopes steeper than the slopes immediately below the "B" Start.

2. An avalanche starting on such a slope may pour along the level for a considerable distance, and even make its way uphill for some way; so the fact that you are moving along a gentle slope by no means implies that you are safe, if there are steeper slopes above you.

3. An avalanche falling on to gentler slopes fans out, and its debris, when it comes to a stop, will be shallower and therefore less likely to bury a man than one which piles itself up to a greater depth in a gully. Therefore avoid walking up or skiing down a gully underneath 'Avalanche Slopes'.

4. Avalanches may be divided into dry snow avalanches and wet snow avalanches, and the two types further sub-divided as follows :—

DRY SNOW AVALANCHES.

(a) The 'Dust Avalanche or Staub Lawin' as it is called in the Alps. This is fortunately rare, and few pepole have even seen a big one, though its effects are disastrous. It was a huge dust avalanche that destroyed the last hut, killed three officers and the chowkidar. snapped off some hundreds of fir trees at the top of the 'Blue and Red Runs' by the wind that it displaced, deposited portions of the Catchment Area fence some way down the 'Blue Run'.

The Dust Avalanche occurs only in blizzard conditions, when snow is falling, or has just fallen and there is a high wind. The wind has the effect of destroying the crystalline texture of the snow flakes and reducing them to tiny white balls. which have no stability at all and do not bind together like newly fallen flakes in calm weather. The Avalanche starting on a steep slope

moves very fast indeed, in fact the greater part of the displaced snow probably travels through the air and displaces a vast quantity of air. It is thus preceeded by a very violent wind which removes the roofs of huts, snaps off trees, and so on: it occurs in bad weather during winter and early spring. Its traces are difficult to identify where it has caused no damage, but consists of a very considerable deepening of the snow in the area covered, and the covering of the surface by small inconspicuous balls of snow.

(b) *The Wind Slab* :—

When snow falls in a high wind the snow flakes disintegrate into minute and unstable while balls and are drifted by the wind on to lee slopes. *Therefore under winter conditions wind swept snow on the lee slopes is dangerous; wind swept snow on windward slopes is usually shallow and harmless.* The rolling of countless small particles of snow across a wind swept slope causes a temporary thawing followed by a refreezing and a crust is formed, especially under overhanging rocks. On lee slopes there is often a considerable air space under this crust. Under the slightest shock the area so crusted cracks often above as well below the skier, breaks up into slabs and moves downhill, slowly at first and. then faster as the slab gathers momentum. The skier so caught in a windslab may, in its early stage be able to ski off the moving snow, but this is exceptional. More often he is trapped. He should try and remove his skis, and then get on to his back using his arms to prevent the slabs from riding over him from behind and bringing him face downwards. If he can he should hold up a stick or his arm, since this my possibly be the only part of him visible above the surface, when the snow stops sliding. The heavy slabs when they stop freeze by compression and a skier caught in a windslab is liable to have broken bones.

Windswept snow on Ice slopes is liable to avalanche even if it has not been crusted and a hybrid between the windslab and the dust avalanche may result. Consequently all steep lee slopes of windswept snow should be avoided, *and the absence of crust should not be regarded a factor of safety.*

The windslab is chiefly formed in Autumn, Winter and early Spring. Once formed it does not disappear until *either* it has been well covered by fresh, unswept snow, *or* has been transformed into safe suncrusts by strong sun.

Crust formed by the sun cannot avalanche.

Crust formed by the wind can and does. Sun Crust may be distinguished from wind crust by the fact that it is perfectly smooth. Windcrust is usually waved, uneven, or rippled.

Several days of fine weather do not mean that danger from wind slabs does not exist.

WET SNOW AVALANCHES. :—

These may be caused:—

(a) by the whole depth of snow down to the ground being thawed and waterlogged, so that the snow loses its coherence. This type usually occurs in spring, and is known in Switzerland as the 'GRUND-LAWIN' or 'GROUND-AVALANCHE' because it clears the snow down to the ground and often brings with it vast quantities of soil, broken trees etc. It may be of any size, but the larger ones usually follow well known tracks down nullahs, and the usual time of falling is often known to the local people. Consequently they are not so dangerous. If caught in a big one however, a skier has small chance of survival, as he will be drowned in the large amount of water imprisoned in the snow. The smaller of such avalanches are well known to Spring skiers and are less dangerous than the wind slab of Winter. They usually start below the skier, who can consequently ride down on top of them unless they carry him over a precipice or into a glacier crevasse.

(b) Wet snow avalanches may be caused in winter by a pronounced warm spell of weather, which brings the snow to a temperature above freezing point. These conditions are common in Switzerland under the influence of the Foehn wind, but I have never seen them in the Himalayas.

(c) Superficial avalanches of wet snow which slides off an underlying crust, very common in spring after a fresh snowfall. They usually slide off below the skier, and for this reason less dangerous than the winter wind slab, unless there is a danger of their carrying him over a precipice or into a crevasse,

N. B.

1. The winter wind slab avalanche is by far the most dangerous to skiers.

2. In Winter I have found that avalanches are more frequent when there is less snow then when there is a lot. Also when there are snowfalls widely separated by long spells of fine weather, possibly because when snowfalls come at very close intervals the various layers of snow bind together well.

WHAT TO DO WHEN THERE IS AN AVALANCHE ACCIDENT.

1. The skier or skiers involved :—See also under wind slab avalances.

(a) Get your skis off.

(b) Get on to your back and, by swimming movements with the hands, try and prevent the snow from behind burying you, or throwing you on to your face.

(c) Try and hold something, your arm or a ski-stick up above your head to help your friends to find you.

(d) If buried, don't lose hope. In a dry snow avalanche there is a great deal of air imprisoned and you can live for a long time.

(e) Try and make a hole in the snow above you (using your breath has been found successful), and push some part of your anatomy through.

2. *Other members of the party not directly involved.* :—

(a) If more than one, and a preliminary search does not reveal the whereabouts of the victims, one must go back to the nearest hut or village for help : the others should continue the search.

(b) Remember there is no danger to searchers on the track or among the debris of an avalanche, from a fresh avalanche.

(c) Use ski sticks to probe the snow of the avalanche in the hopes of contacting a body.

(d) Search the whole avalanche below where the victims were caught, starting at the bottom since it is most likely that they will be buried near the bottom where the snow is piled up thickest.

(e) When a body is found use ski sticks to dig away the snow or better still a spare ski tip.

(f) The victim when found may be suffering from :—

1. SHOCK, Avoid giving alcohol where injuries are serious, but warm drinks, if available, and suger or sweets are useful.

2. COLD. Give him all your spare clothing, encourage him to move his arms and legs about freely. Examine rubbing the all extremi ties for frost bite symptoms which maybe treated by rubbing the affected parts a scarf, or spare sock.
3. *Broken ribs or limbs, or sprain or dislocated joints.*

If a fracture is suspected do not attempt to move the limb until it has been immobilised by tying a splint. A splint may be improvised by using a ski stick tied on with handkerchiefs, skins, or torn shirts.

(g) If the victim is incapable of skiing, or even walking, a rough sledge may be made by binding two pairs of ski underneath his body with ski skins or rucksack cords on which he may be dragged along the snow.

THOSE NOT INVOLVED IN THE ACCIDENT.

(i. e. in a Ski-hut or Village or Hotel).

Should set out at once bringing with them the following equipment :—

1. Avalanche poles (these are stocked at every proper ski-hut.)
2. Plenty of rope or strong cord.
3. Snow shovels.
4. Splints or slabs of wood with which to improvise them.
5. Bandages.
6. First Aid Equipment including Morphia and Syringe.
7. A thermos of hot sweet tea, coffee, cocoa, or soup ; brandy or other spirits, and other food e.g. chocolates.
8. A sledge or, if more than one victim is involved, sledges if available.
9. Snow shoes to assist those who may have to drag the sledges or improvised sledges.
10. Blankets and spare clothes.

If a doctor is not available at the ski-hut or village, he should be sent for and conducted at once to the scene of the accident.

Further means of transport e. g. Ponies, Hay sledges, should be sent for and brought as near the scene of the accident as possible.

REPORT ON AN AVALANCHE.

24th Feb. 1945.

The snow started on the 24th Feb. evening. At the same time the temperature, which had been dropping at nights rose to a constant high level which made the interior of Killan Hut stifling. Nanga Parbat which had stood out with lordly distinction, disappeared behind the shroud. On the evening of the 25th a high South East wind go up. During the next few days this reached at times an Himalayan pitch of fury ; at others it would sink and on the morning of the 27th., which dawned fine, it disappeared completely to rise again late in the afternoon.

The quality of snow falling changed considerably. On the 25th it fell in large feathery flakes and on the afternoon of that day descent of Slalom Hill was a knee deep push. This was next day succeeded by very thin snow, almost rain, and running on the Red Run became almost fast even on loose untrodden ground. By the 27th and 28th a quality of hail was falling in hard rounded pellets that the wind flung across the Marg, This was accompanied by thunder which continued intermittently throughout these two days.

At midday on the 28th the chowkidar of Khillan Hut called attention to the change of wind. It now appeared to blow straight down the mountain at us. It seemed adviseable to evacuate Khillan, and with this in mind, the writer was returning to the Hut from below when he met an instructor and a visitor who had been by the Forestry Hut when the avalanches descended. They described them as a crack followed by a roar; The snow swept over Slalom Hill in front of them and down, coming to rest below Hill 60. They had no sensation of blast. The first avalanche started, and was followed 5 seconds later by a second down the gully to the left of Forestry Hut, the far side of the catchment area fence. Snow from the avalanche just crossed the coolie track just below the Hill 60 level.

The three returned to Gulmurg, and a party set out to evacuate Khillan. Those still up there with the chowkidar and

kitchen staff, were found to be on their way down. (The remainder of the aircrew skiing party was already below, having descended with the writer). The parties met on the site of the avalanche this being of course safe from further falls. Christmas gully was seen to have avalanched—at what time it is difficult to determine, and it was thought safe to carry on to the Hut to recover essential belongings and stores. Over the Marg avalanche block debris extended from the trees at Hell Fire Corner to some fifty yards from the Hut.

On the day of the avalanche the Chief Instructor had put all the country above Slalom Hill out of Bounds.

March 1st was fine, and it was possible to visit and examine the avalanche. The upper ridge above Christmas Gully had peeled off, and the more North facing flank of Lillywhite Shoulder Ridge, leaving a great deal of bare rock and filling the gully with debris. But what had swept Slalom Hill seemed to have been a fall beginning at lines of cleavage around the Orchard and Lillywhite shoulder. This had descended over Beta Start and thence straight down into the Red and Blue Run, with smaller gullies piling even the Gujar Hut, low on the Blue Run with block debris. On the other side of the Catchment Area fence, the Punchbowl had launched its contribution, filling the nearer gully. Meanwhile the two gullies to the right of Christmas Gully held fire, so it was not considered advisable to visit Khillan in case they should leap the blocked-up Christmas Gully and sweep the smooth stretch where the Hut is situated. When later all the available ammunition from these gullies seemed exhausted, and after two days clear weather, the hut was re-occupied on the 6th March by an advance party and next day by a full course.

It is difficult to draw conclusions on the nature of the avalanches when the only standard we have is that of the Alps, which does not necessarily apply, but if we can judge at all by the avalanche chapters in Seligman's ' Snow Structure and Ski Fields " it seems unlikely that any of these were orthodox Wind Slab, for the reasons that the temperature was two high and the snow too loose to form respectable caking. It looks as if there was a large element of " wet snow " in, at any rate, some of the avalanches.

But a later and close examination of the lines of cleavage at the Orchard and near the top of Apharwat make it appear that a veering wind, blowing the warm new now onto steep places and overloading them, combined with the shock of thunder may have been enough to start falls on the higher angles. These would either leave the slopes above under cut and unstable or in other places set moving the snow lower down. But it would be hard to pigeon-hole exactly any of the falls. An interesting feature is that those within the Hut did not hear any of the avalanches falling, nor was any blast experienced by the two skiers near the Forest Hut.

INJURIES.

As in all other fast sports the types, varieties and degrees of skiing injuries vary over a considerable range. They are usually the direct result of falls, and the majority affect the lower limbs. A very small percentage is caused by other factors such as colliding with trees, falling on ones sticks etc.

In the case of a beginner, falls generally in a backwards and sideways direction, are inevitable and therefore a high minor injury rate is to be expected at the beginning of courses. With the right type of snow however, that is hard Winter snow of uniform consistency with an inch or two of powder snow on top, it is exceptionally rare for the heaviest fall to cause any damage. It is on heavy deep snow that the majority of accidents occur, when a runner not necessarily travelling very fast encounters a change of snow, e.g., from hard to soft, resulting in a fall forwards, and more or less sideways, often the edge of one ski digs in and gets held up, while the other continues to move forward, and a twisted position of the legs results. In such conditions, the most experienced skiier may come to grief.

Of the 150 Skiers who attended courses last year, two sustained major injuries, one a fracture of his right fibula and the other, a fractured tibia, being the result of an accidental fall into a stream.

By far the commonest type of minor injury encountered was sprain of the internal lateral ligament of the knee joint. The mechanism of injury resulting from both a backwards and sideways fall, and forward and sideways fall, is the same in each case. The knee in a position of slight flexion, is forcibly abducted, the femur is rotated on the tibia, and the internal lateral ligament sustains a tear of some of its fibres at their attachments. Some of these sprains were complicated by traumatic effusions into the joint.

MOUNTAIN RESCUE.

CONSTRUCTION OF A SKIING CASUALTY SLEDGE.

Object.

The improvisation of a sledge from skiing equipment and miscellaneous gear normally carried on tour.

The strength of a party skiing beyond the recognized practise slopes is never less than three persons. For longer expeditions, four should be the minimum.

Available equipment for a party of four.

Leader :—

1 pair ski, 1 pair sticks, 1 pair climbing skins, 1 rucksack containing spare clothing, a spare ski tip, and ski repair outfit, a first field dressing, bandages and emergency rations.

Three Members.

3 pairs ski, 3 pairs sticks, 3 pairs skins.

It is presumed that belts, braces, scarves and puttees are worn by some members.

Requirements for transport of casualty with, for example, a fractured tibia.

For casualty :—

(a) One ski stick splint.
(b) One pair of puttees, one pair skins, two scarves or bandages to secure splint.
(c) One dressing if fracture compound.
(d) Two belts, scarves, puttees or skin with which to tie the legs together.
(e) Warm clothing.

For Sledge :—

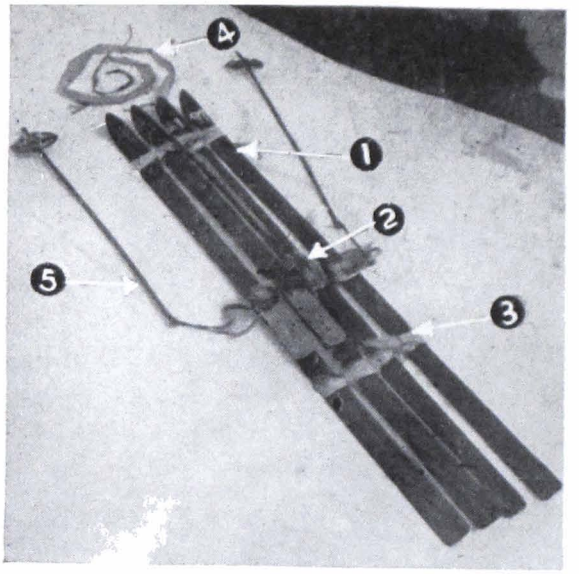
(a) Two pairs ski.

(b) One pair sticks.
(c) Two and a half pairs skins.
(d) Spare coat or pullover as seat.

METHOD OF CONSTRUCTION.

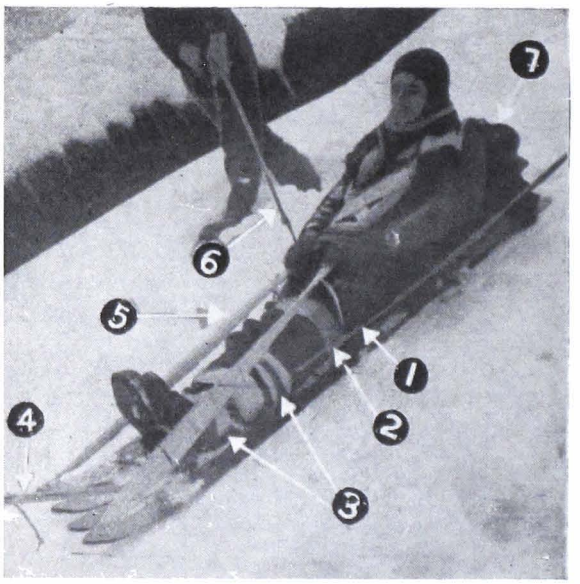
1. Place four ski beside each other. Lash the tips four inches from the points, cross bracing by twisting the skins between each ski, thus providing a rigid structure.
2. Pass the toe straps through the toe irons of the ski at this point.
3. Pull the central heel springs forward and secure with the toe straps.
4. With one skin, lash the four ski together just behind the foot plate.
5. Brace this lashing to the front lashing, as firmly as possible, using the tapes of the skins for this purpose.
6. Attach one skin as tow rope to the front lashing.
7. Attach by the loops, one skin to the point of each outside ski, to be used as side supports for the casualty.
8. Attach by the loops, two sticks, one on each outside toe iron, to be used for towing and steadying the sledge.
9. Place a folded coat or pullover over the footplates on which to sit the casualty, and put the latter feet forward on the sledge. Attach the side supports to the shoulder straps of the rucsac (which is stuffed with clothing or snow) and worn by the casualty as a back support.

Note.—1. A 3-ski sledge can be made in the same way.
2. The front skin lashing *must* be firmly attached and braced back to the bindings.



SKI SLEDGE I.

1. Skin lashing twisted to form figures of eight.
2. Bindings pulled forward and tied to front lashing.
3. Rear lashing (Skin).
4. Skin tow-rope attached to front lashing.
5. Tow-sticks attached to outside bindings or toe-straps.



1. Folded coat as seat.
2. } Skin or puttee bandage: Ski-stick splint.
3. } Note both legs tied together.
4. Tow rope Skin or puttee.
5. Skin side supports.
6. Tow—Stick.
7. Full rucksac as back support.

SKI SLEDGE II.

EQUIPMENT.

ESSENTIAL ITEMS.	
Blankets	4
Shoes or Chaplis	1 pr.
Puttees	1 pr.
Socks	4 prs.
Vests	2
Pants	2 prs.
Shirts Woollen	3
Battle Dress Suit	1
Sweater or Pullover	2
Caps Comforter	1
Hat	1
Sun glasses	1 pr.
Towels	2
Soap	1
Tooth Brush	1
Tooth Paste	1
Mirror	1
Hair Brush	1
Comb	1

ESSENTIAL ITEMS REQUIRED BY INSTRUCTORS.	
Rucksack	1
Whistle	1
First Aid Kit	1
Maps	1 Set.
Repair outfit	1
Spare binding	1
Spare ski tip	1

OTHER USEFUL ITEMS.	
Golf Jacket	1
Woolen Under clothes	1
Greatcoat	1
Flying Boots (or Gilgit boots)	1 pr.
Gloves	1 pr.
Sleeping Bag	1
Goggles	1 pr.
Rucsac or Haversack	1
Thermos Flask	1
Boots	1 pr.
Pyjamas	1 pr.
Shaving Kit	1
Torch	1
Writing Materials	1
Camera, Cigs., Sweets	
Tweed coat	1
Flannel trousers	1

EQUIPMENT SUPPLIED BY A. M. C. (For information)	
Boots (ski)	1 pr.
Skis	1 pr.
Sticks	1 pr.
Skins	1 pr.
Balaclava Helmet	1
Goggles	1 pr.
Scarf	1
Windproof Suit	1
Gloves Woollen	1 pr.
Puttees	1 pr,
Outer Socks	2 pr.
Battle Dress Suit	1
Blankets	Sufficient Extra.
Sunburn cream	

ESSENTIAL EQUIPMENT NOTES.

Ski-Boots. Must fit perfectly preferably over 2 pairs of socks. The sides of the soles must be straight-cut where they fit the toe irons and the soles themselves must be strong and not liable to buckle. The instep must have adequate support. The toe cap should be blocked and loose enough for the skier to be able to move his toes. This will reduce the likelihood of frost-bite.

Skis. Must not be warped or over-cambred. The turn-ups must be adequate (at least 3 inches at the highest point above the ground. Buildings must he so fitted to the boots that there is no lateral play. A line through the centre of the heel should run down the centre of the Ski. *Length.* To reach palm with hand upraised.

Diagonal tension should be such that when the Ski is raised off the snow the heel should remain in light contact with the foot-plate.

Sun Glasses. These are included amongst essentials as although common sense will dictate the amount and type of warm clothing to be worn the effect of glare is often neglected. Amber or green lenses have proved satisfactory, yellow being very good in a mist. If glasses are worn in preference to goggles they should have side pieces. Goggles are seldom sufficiently ventilated and tend to fog up if this is not remedied. Snow blindness is not uncommon in Himalayan Skiing. Several cases were recorded last year, one being attributable to the use of blue lenses which do not exclude ultra violet rays.

Sun burn cream. This is essential for spring skiing. In winter the extreme dryness causes cracked lips and noses and should be similarly guarded against. Cases have been known where skiers have been unable to ski for several days due to neglet of this simple precaution.

NOTE ON WAXING.

Dry Snow. Hard or powder, usually at low temperature, *Wax.* Very thin layer of some light coloured wax rubbed to a high polish. This may be applied over a base of hard black wax.

Deep Snow. Medium temperature.

Wax. Apply a thick layer of soft black wax and rub smooth.

Spring Snow. High temperature.

Over a coating of black wax rub in paraffin wax. This need not be polished. The paraffin may be applied thick with a hot iron if desired.

General.

The above notes are brief and unscientific. When modern waxes are again available from Europe and the States, the methods described above will be superceded. They do however give results.

When in doubt give a top dressing of paraffin. This needs frequent renewal. A piece of paraffin candle is about the most convenient form of wax and a piece should always be carried around in the pocket of every Skier.

Dry snow—hard wax. Wet snow—soft wax is a useful axiom.

Treatment of Ski Boots.

When new, boots which have no stiffening in the sole should have the soles coated with *boiled* linseed oil. Two or three applications are necessary and should be applied when the boots are warm. If the uppers are greasy or pliable apply boot-polish only as often as possible. Boots, old or new, should *never* be exposed to the direct head of a stove or fire. They can be ruined overnight in this manner. Old boots should only be oiled (with Castor oil) when absolutely necessary to eliminate stiffness or buckling of the leather. It should be worked well in while the boots are warm. Oil tends to rot the stitching and causes the leather to become porous and stretchy. Wax polish is better than dubbin. Boots should be dried out in a drying room, preferably hung up. If trees are not available boots can be stuffed with paper or hay to preserve their shape.

Once the soles of a pair of boots have buckled in an upward direction, due to the normal tension of the binding, they will have to be discarded or resoled.

Treatment of skis when in use.

Skis should not be allowed to become wet or remain wet. This condition will rot the wood. It is best avoided by ensuring that the running surface is always coated with wax and that the upper surface is varnished. Skis should not be left stuck in the snow heels down ; this will tend to split the heels of the ski and they will in any case become waterlogged. Skis may be placed points downwards, leaning against a wall, or slung by the heels in the straps of the ski sticks. Skis are best waxed after being dried or warmed in sun. Bindings should always be checked immediately before use by the user, and a complete inspection with particular attention to edges should be carried out once a day. Attention to detail in this matter may prevent an accident. Members should not be permitted to carry out adjustments to their skis without reference to their Instructors. Each evening skis should be properly stored in the racks provided or clamped together according to circumstances.

Storage of Skis during the summer.

At the end of the skiing season skis should be allowed to dry out for a few days. The top surface and running surface should then be scraped clean of old varnish and wax. Repairs to metal edges should then be done and any other repairs necessary. Skis should then be treated both sides with *unboiled* linseed oil until the wood has ceased to absorb the oil. Two or three applications within the space of a week may be necessary (the firm of Attenhofer mix a little petrol with the oil to ensure penetration). Skis are best oiled in the sun.

The skis are now ready to be stored in a room which is neither damp nor artificially heated. Accurately constructed wall racks of some strength are required in order to maintain the original arch and upturn given to the skis by the makers. Failing the existance of wall racks skis will have to be clamped together with a $1\frac{1}{2}$ inch block under the arch and a stretcher across the points, correct length being an essential. Skis which have lost their shape will have to be re-steamed by a manufacturer.

Skis which are only slightly flattened can be put in rather more powerful racks after oiling and left for as long as possible. All racks must be so constructed that it is impossible for the skis to warp while being stored.

Leather toe-straps and heel-straps should be oiled with unrefined castor oil worked well into the leather. The metal parts of bindings should be coated with vaseline or any other non-congealing protection.

Bindings need not be removed from the skis unless it is expected that the skis will have to be stored for two or three years. (The less the wood screws are moved the better). When dealing with large numbers of skis, bindings may have to be removed to facilitate packing in transport.

Skis should not be oiled within a month of being required

for use. Before use it is necessary to remove all traces of oil not absorbed. (Scraper, sandpaper and kerosene oil may be used). Shellac or varnish the top surface giving two or three coats and iron a base wax, (usually a tar compound) into the running surface. Remove vaseline and grease from the bindings and the skis will now be ready for use.

When storing bindings it is adviseable to tie together all the various component parts with string, and store in sets in separate containers.

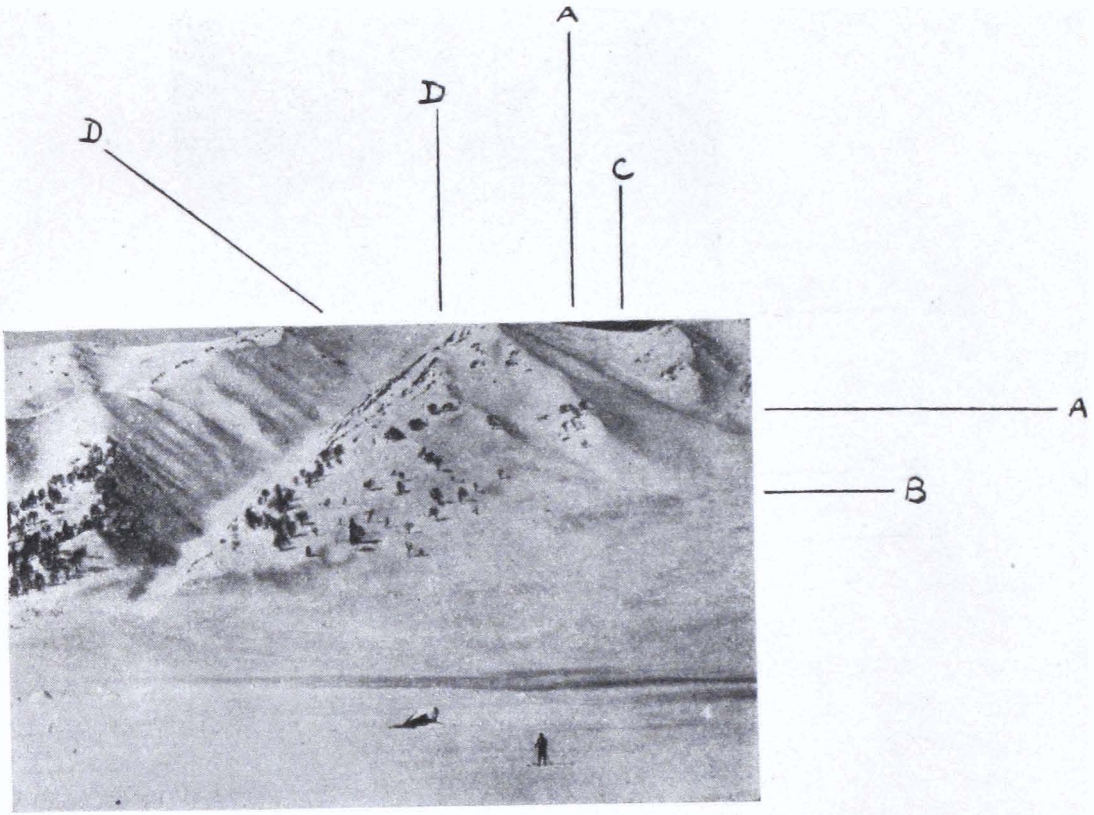
PART II

INDIAN SKIING FIELDS

INCLUDING SOME EXTRACTS

FROM

RECENT SKI CLUB ANNUALS



KHILLANMARG AND THE SLOPES.
BELOW APHARWAT.

LEGEND

AA . Lillywhite Shoulder

B . 'Beta' Start
(Just off photo to right)

C . Christmas Col
(Christmas gully below)

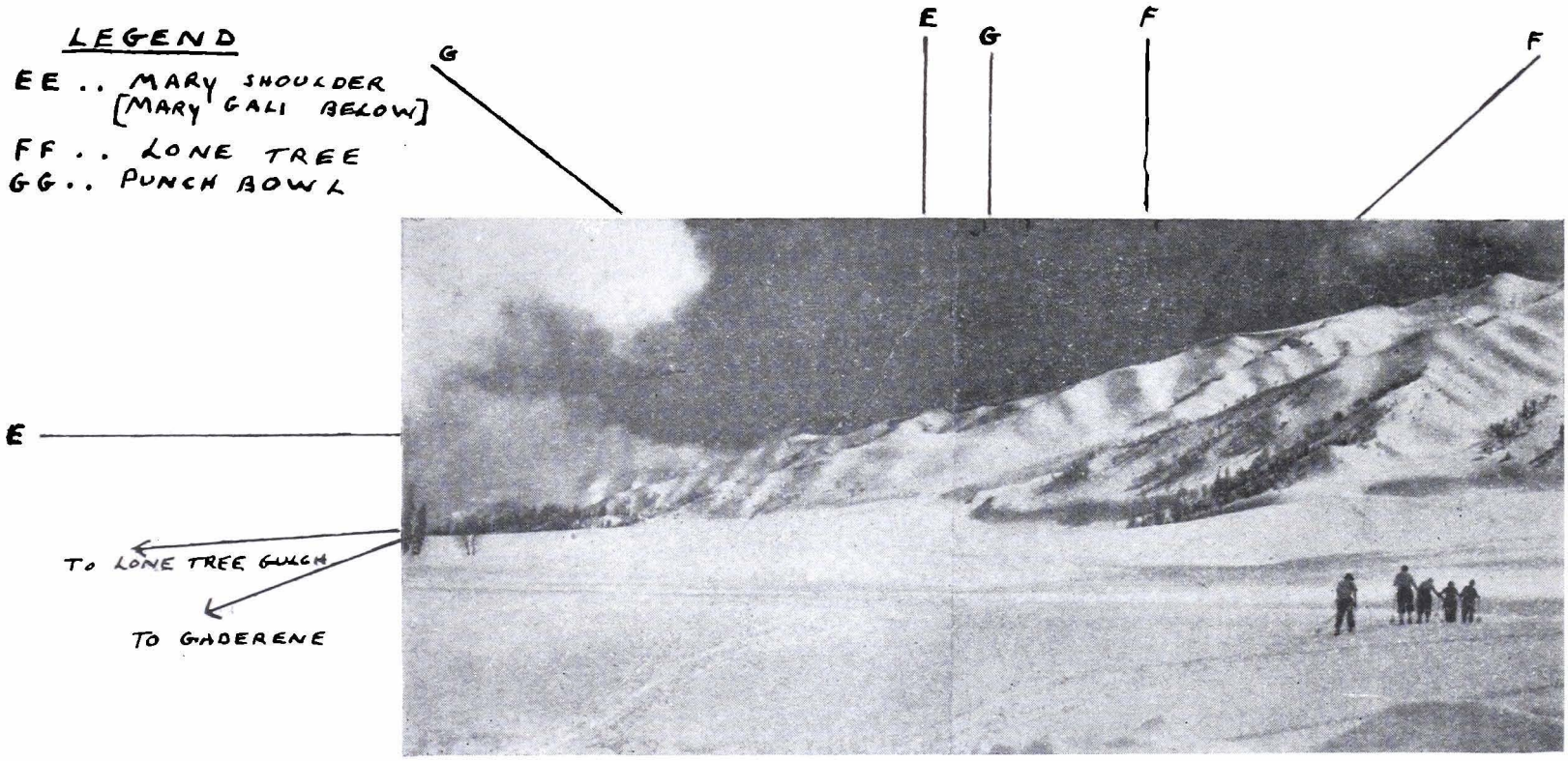
DD . The Orchard.

LEGEND

EE .. MARY SHOULDER
[MARY GALI BELOW]

FF .. LONE TREE

GG .. PUNCH BOWL



SKI FIELDS EAST OF APHARWAT

GULMARG.

Map Sheet No. 43 $\frac{J}{8}$

It is not intended in this book to describe any of the many runs in the area in detail. The main runs above Khillan Hut are shown in the accompanying photographs of the area ; and the main runs below the Hut are clearly defined by red, white and blue marks on the trees. Gaderene is the first obvious convex clearing, arrived at after trekking South East over the marg and across the first large scrub clad ravine, on a level with Khillan Hut and the top of the tree line. To get down the first imposing bluff, which gives such sudden, and perhaps unexpected, point to the name of the run, it is usual to traverse out to the right hand corner of the clearing and then turn left and downwards, thus turning the steepest part. The slopes directly above Gaderene leading up to the foot of the mountain afford nearly a mile of easy straight running.

Lone Tree Gulch, further along the tree line, no longer has its lone tree, but the rest of the title will give a clue to the skier. The clearing down the first part of the run is less wide than Gaderene. The right bank of the gulch in the one upon which to ski. A descent of Lone tree is often made from Mary shoulder or, nearer home, the original point where the lone tree stood on the rather rocky ridge on the near side of Mary gali. Both the wood Runs described entail a long, left handed traverse to bring one back to Gulmarg. On ones first attempt an experienced skier to act as guide is an advantage. The ascent of Apharwat 13592 ft. by Christmas gully, and the North Westerly run down a central rib the far side of the mountain to Linyan is best done in late November or Spring. After a couple of miles of excellent running it is necessary to cross right handed back on to the main North West ridge and continue until a way off the mountain is found and a return made to Gulmarg by the Forest path. I understand that the way home is now marked. This expedition is a long and severe day from Khillan Hut.

With a camp on Liyan marg, some good spring skiing on

Washtu 11027 ft. and the most Northerly slopes of the main mountain would be possible. This area is described in full in the 1939/40, 1940/41 Annual.

Ski Fields in the Sonamarg—Zoji La—Macchoi areas.—Map sheet 43. N. (Dras.)

Skiing in these areas is largely governed by the accessability of Sonamarg by car. This year (1945) the Treaty road to Leh, one of the oldest trade routes into central Asia, was blocked by avalanches in the Gaggangir Gorge until late in May. From the view point of the skier this was a pity for late April and early May would appear to be the best time to ski hereabouts. In June the snow under the 12,000 foot mark is too soft for enjoyable skiing by 10 o'clock, and much of the surface has become pock-marked by the sun and gives a very rough ride.

From a base at the Forest Rest House, a mile short of Sonamarg Village, some good runs of about 3 miles, and involving about 3000 feet, could be done in the Thajiwas Valley, and safe easy glacier running looks possible on glacier No. 6. The glacier in this valley are numbered from right to left, and No. 6 is the only one without an ice fall and apparently without crevasses. The use of ski on glacier 1—5, though possible and interesting, would be more in the nature of ski-mountaineering and would entail the use of a rope and might well involve some step-cutting to get over the ice-falls.

On the left of the valley, as you look at it, the smooth rounded slop of the Zabnar ridge were skied on in the autumn of 1944, and good running is possible from 14,000 ft. right down to 9000 ft.

Crossing to the North bank of the Sind river by the main road bridge below the Forest Rest House, the skier can traverse upwards along the left bank of the Nichinai Valley onto Cathedral ridge, about 12,000 ft. which overlooks the Gorge at Gaggangir from the North. From various points along the length of this ridge, smooth East facing slopes offer a variety of runs leading down to, and through, the birch and pine woods of the Nichinai valley, a view from the Northern end of the ridge suggests a good valley run down from the Nichinai Bar.

To the right of the road leading into Sonamarg village are several short practice slopes, and a whole day can be spent on them.

Ten miles beyond Sonamarg lies Baltal and the Rest House there might form the base for operations on the Zoji La, 11,570 feet. The winter route down this pass provides interesting, if steep, running, and if a sheltered spot could be found at the head of the pass, a one night bivouac would amply repay any discomfort, as the North Slopes on the right make a good mornings tour followed by a descent of the Gorge in the late afternoon down to Baltal.

Sonamarg is the limit for motor transport—from here on, one is served by ponies and coolies.

The route from the head of the pass to Macchoi, some 5 miles, over avalanche and snow bridge, is scarcely worth the effort on Skis. From Macchoi one looks out across the Suweke Nar onto a vista of half a dozen broad easy Snowfields surmounted by 17,000 ft. peaks Below the Snowfields are glaciers whose ice-falls should present little difficulty to the ski-mountaineer. It is possible that at least one of these pyramid-like mountains could be climbed on ski from a camp in the Suweke Nar. The Slopes behind the Macchoi R. H. are good but steep. An interesting run from Macchoi of about 2 miles takes one to the valley where the river must be crossed by a snow bridge, and so on over the flat for 5 miles to Matayan which I think is the limit of worth while travel in this direction. Matayan is about 10,000 ft.

With a comfortable base camp in Matayan Rest House, expeditions could be made up a valley running parallel to the route. This valley connects up with the mountain system seen from Macchoi and is entered by a narrow Gorge debouching onto the village on its Eastern side. Firewood and simple supplies are available in Matayan. Baltal and Macchoi have nothing for the traveller, and firewood has to be carried up to the latter place from Baltal or Matayan.

The whole area under discussion is subject to avalanche danger and should be studied carefully before a tour is undertaken. Further information on the subject will be available in the 1945/46 annual. Anyone considering spring skiing in this area should read C. W. F. Noyce's 'Climbers Guide to Sonamarg' published by the Himalayan Club. The only available map of the area is on quarter inch scale which is of little value to the ski-mountaineer.

SKI CLUB INDIA ANNUAL 1943/44

Quetta Skiing—D. R. Horsfield.

CHILTAN.

Mian Ghundi was our base and we drove there by car, collecting coolies from a neighbouring village.

Between us and the beginning of Chiltan lay a waste of stony ground rising some 600 ft. Once across this we had the choice of three main ridges running out towards us, that on our right continuing for some distance to the north. This was the one we chose and the one which, as we learned later, provides the easiest ascent. We climbed steeply for six or seven hundred feet to the top the ridge and then found a rough path leading up towards the summit. Three hours after leaving Mian Ghundi we were at the bottom of the last steep slope to the main ridge and there decided to lunch. Warmth was a necessity and we soon learned the trick of burning the thick round thorn bushes which exist on these Baluchistan hills. We were perplexed by the lack of good snowfields and could not fit the picture we now saw to that which we had seen when in Quetta. What looks from below like one snowfield is in fact two ridges lying one behind the other, each having rather steep sides.

We made two more expeditions to Chiltan on subsequent Sundays, but we found nowhere better than a short practice slope we found on the first visit. This is best found by crossing the neck which joins the ridge to the main mountain and then almost immediately following a steep and narrow slope which descends to the east. There is a more direct route, but it is not so easy to find.

On our last visit we chose the centre ridge to see what prospects it offered. During the climb we chose different ways and about lunch time Tom and I arrived on a pleasant looking snow ridge.

A wide nullah, which lay on our right as we were climbing, looked as if it might offer some fair skiing during the winter. When we were there, snow only lay on the north slope of the

nullah's side. The possibility of avalanches from the steep sides of the nullah would have to be considered. These same slopes make good steep skiing in some places.

Having finished our climb to the north peak of Chiltan (10,400 ft.) we went straight down, the snow being too porridgy for the skiing to be worth while.

ZERGHUND.

At the end of February we made arrangements to make a Sunday trip to Zerghund. We had only climbed about five hundred feet when we found the road and fields of the Urak valley covered in snow. The Urak valley is pleasant at mosttimes, but covered as it was this morning in its cloak of new snow, it could claim real beauty.

To the unguided party I would say that one should turn to the right in Urak village, and continue to the top of the hill to the place where the road curves round to the right to the reservoir. The ridge half a mile back from the road on the left is the one to climb. Although it looks a stiff proposition there is a good track up to the top, and coolies can be found from the village which nestles at the foot of the ridge.

The mountain is of peculiar formation being made up of a series of ridges rising one above the other to form the south face of the mountain. Between each ridge is a north facing slope which carries the snow, and a steeper south slope leading to the next higher ridge. We skied down the first north slope, and climbed to the second ridge for the main part of our skiing. The whole climb is a good deal shorter than on Chiltan, and as a result we got a longer skiing day.

Following the second ridge to its highest point we found a pleasantly graded slope of about 300 ft. drop. The new snow served us well until a cold wind came to turn the unskied snow to crust.

The next week we set out to find better slopes in the same area.

We climbed first to our slope of last time, but continued from there over the next ridge, and onto yet another one, the

fourth from the road. On the far side of this was a steepish slope of some six or seven hundred feet, the best slope we had found so far. Choosing the longest route I fitted in some twenty linked turns, skiing at fair speed.

COAL MINES.

I should perhaps mention that the Coal Mines, out by the reservoir, are reputed to be the best skiing grounds when there is snow about. For us there was none. There must be many other places too which make good skiing when there is plenty of snow.

KALIPHAT.

We had no more skiing until the beginning of April when we had a chance to go to Ziarat, just over sixty miles away, and look for snow on Kaliphat. After the bareness of the Quetta countryside, Ziarat, with its juniper forests, looked lovely.

In the morning we moved on, and were very soon treated to a heavenly view of Kaliphat. The east face, which we were looking at rises 2,500 ft., practically sheer from the Zizri valley. We crossed the valley to the foot of the mountain, and then followed a chattering stream down a narrow gorge to the north. This was one of the most picturesque part of the whole climb. A mountain path leads up to a natural pass on the Kaliphat ridge, and from there one has only to follow the main ridge to get to the top. Eventually we arrived at the top, 11,454 feet, having taken three hours from the gorge. Snow was not plentiful, and a cold wind prevented any softening of the surface, but I managed to get about a thousand feet of running on iron clad slopes.

We arrived back at Zizri, where we were camped and next morning our head coolie led four of us back to Ziarat by a route which had the suprising name of 'Stalingrad'. It is no good for donkeys, but on foot one can do the trip comfortably in under two hours, a considerable saving in time and energy over the other route.

I would say in conclusion that though Quetta is not a place to go for a skiing holiday, it does offer good entertainment for the enthusiastic skier.

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Glaciers of the Kagan— **D. R. Horsfield.**

Map Sheets Nos. 43 F/5, 9, 6, 10, 7, 11.

PREPARATIONS.

The provision of food and skiing equipment presented no unusual problems : the difficult things to find were ice axes, crampons, rope, and a suitable tent to take high up the mountainside. Rope was the first item to be acquired. A search of the Kabari bazar produced some rope which one would never have considered in times of plenty, but which when doubled stood upto the exhaustive test we gave it. I designed some light crampons and had them made up in the bazar. We discovered that the army produces an excellent tent for mountaineers, and calls it a twenty-one pound tent. In making these preparations we have travelled from Quetta to Rawalpindi and on again to Abbottabad. And finally we have made the 47-mile trip from Abbottabad to Balakot in a rattling bus with all our kit and provisions stacked up behind us.

APPROACH TO THE GLACIERS.

Tom had written to arrange for mules and coolies to be ready for us at Balakot, the limit of the motor road, and we had received a favourable reply.

At eight o'clock on the morning of June 18th we moved off with an unnecessarily large convoy of two bearers,, four coolies, four mule leaders, and thirteen mules. Our mules were very lightly loaded, but perhaps it was a good thing considering some of the places we asked them to take their loads. We crossed the Kunhar, the river of the Kagan valley, and started a long steady climb up the excellent track. The valley is mainly narrow and steep sided for the first fifty miles, with the track sometimes at river level, and sometimes 1,200 ft. above it.

When we left Balakot we decided to make our way to Bela Kawai, just over twelve miles away, and there decide whether we were sufficiently strong to go any further. We lunched at the river junction beyond mile 10. The climb of 2,000

ft. from our lunching place to the Rest House at Bela Kawai required quite an effort, but we arrived there at three. We learned from our mule leaders that there was a suitable camping ground at Paras near mile 16. Arrived there we saw no sign of our camp. Feeling certain that we could not have passed our luggage we plodded on, eventually catching it up at mile 19, quite a pleasant camping ground next to the river.

The next morning we had our first view of a real snow peak from the bridge half a mile beyond our camp. In the Vee of the valley ahead of us stood a perfectly shaped peak without a single outcrop of rock in the last six or seven hundred feet. We were later to climb this snow cap which we christened West Siran Sir, 16,445 ft. after the glacier which starts from its side. Though it was only fifteen miles away, we covered fifty in getting to its foot. Plodding on, we passed the Kagan trout hatchery, and arrived in Mahandri at half past eleven.

It had been our intention to turn off to the north-east here and go up to Dumri, and then straight up on to the ridge at Shikar Gali. From here we were going to explore the possibility of getting up into the valley of the Siran Nar. However we learned that our mules couldn't possibly get more than three miles up the track, so we had to change our plan. Had we arranged to do without mules in the first place, and relied entirely on coolies, perhaps we should have made something of this route. Encouraged by our progress on the first day, we calculated that we could get up the main river to Battakundi, and then up the Dadar Nar to Dadai in two more days, making a total of 68 miles for the 4 days This would put us at a height of 10,540 ft. in a very good centre for exploring the glaciers of thearea. We sent the mules on to Kagan another eleven miles. From milestone 32 we started climbing again up a hill which seemed to have no end. Here morale, particularly mine, reached rock bottom, and then as a final blow, Kagan itself came in sight with no sign of the rest house. We had to walk a further mile to the far end of the village before we could relax.

Next morning we found moving easier than we had expected and covered the 14½ miles to Naran before lunch. At mile 54 we found a very nice camping ground down by the river, and spent our third night there.

As we climbed nearer the snow line successive exciting views attracted our attention and called forth our praise. From the Battakundi rest house there was a heavenly view up the valley to the Dunga Katha glacier at its head, a view which nad beauty of colouring as well as beauty of shape. Here we left the powerful Kunhar river and turned up the Dadar Nar. The Kunhar even here, is a very powerful river. We had passed numerous streams of fair size bearing water to the main river, but still the Kunhar seemed to grow no smaller. Even the insignificant Dadar Nar carried sufficient water to make it impossible to cross except by its one bridge. Climbing over a rise we were confronted with a magnificent view of the Burji Glacier and immediately started to discuss when we should climb on to it, and discover what it had to offer to skiers. Hardly had we finished talking of this glacier when arrived at Dadai, were thrilled by even more exciting snow slopes to the south; the siran glacier and the great Mahli Ka Parbat itself. We had arrived at our base camp, and established ourselves between the junction of the two streams at Dadai.

THE CHITTA GLACIER.

We had decided to place a small camp further up the mountain, and spent until ten o'clock sorting out the things we would need to take with us. The climb was steepish but not difficult and took us through a lovely flowered valley. We made our camp by the glacial pool at about 13,000 ft. and sent the coolies back to the base camp with orders to reappear in two days time. Left alone we took stock of our surroundings. The glacier climbed steeply above us, broken half way up by impressive ice falls, reaching to a pointed pyramid which we took to be the summit of Mahli Ka Parbat. Of the two ridges which led to the peak the north east ridge appeared to offer the best chances of an easy ascent, and it also had the advantage of taking us to a viewpoint where we could overlook the other glaciers in the area. We decided to climb to the ridge in the morning.

We had been too idle to make many preparations for our trip overnight, so it was nearly eight o'clock before we started towards our objective. At the bottom of the glacier we put on our crampons and arranged the rope. The crampons were a great success

and made climbing pleasantly easy. Crevasses had to be crossed here and there, but all were small, and none showed any sign of weakness when tested with an ice-axe.

After we had climbed about a thousand feet we saw that there was a part of the glacier which turned towards the ridge to which we were climbing and offered some very promising ski fields. The ridge itself fulfilled all its promises The view over the glaciers of the Siran was exquisite, and fifty miles away to the north-east Nanga Parbat towered above its neighbours. From this side, it looks a far mor formidable mountain than it does from Gulmurg, and it is easier to appreciate the difficulties of the expeditions which have failed to climb it.

We continued up the ridge in softening snow until confronted by a steep slope of loose rock and soft snow. Here our minds decided that it would be unwise to go further, and our legs endor sed the decision. We basked in the sun and ate our lunch, feeling that every effort had been worth while for this moment alone.

The next day we tried the skiing slopes we had discovered. Using skins, the climb to the ridge was quickly accomplished, and we were again encircled by groups of friendly mountains all basking in the warm sun. The weather was perfect and of the kind which gvies a bluish look to the distant snows. We were led away by the charms of the mountain goddess and stayed too long. The first steep slopes were sugary spring snow, but lower down the running was slow and the snow wet. We hugged north slopes and ran right down to the camp. The coolies had arrived, so we made tea from glacier water, now rather muddy, and packed up our camp. It was then that I remembered my skins, drying in the sun 2,000 ft. from me. I borrowed Tom's skins and made the climb in good time. The run down took nine and a half minutes. In fast snow, three or four would have sufficed, and I got a good idea of the possibilities of the place in good snow conditions.

THE SIRAN GLACIERS.

We decided to made our way up tho Siran Nar and explore the Siran Glaciers. Preparations took some time, so I made a short climb on my own to have a closer look at the Burji Glacier.

It appeared steep and would be no good for skiing down its main face. However, it looked as if it might be possible to ski across its face and down a gully hidden from view by a rocky ridge. We never found time to explore this glacier any further.

Our day's march was to be a short one. We clung to the right of the valley and followed the waste of the lateral moraine upwards. The valley was steep sided, and it was a lucky chance that we discovered a small piece of flat ground with a rocky overhang above it. We found wood here, so knew that we had discovered a herdsman's hideout, though a fine looking marmot disputed the right of any human being to be here. The height was 13,000 ft. so we were very satisfied with our lodgings.

Up at five the next morning and watched doubtful weather turn into likely weather. We started off with skiing impedimenta and began climbing slowly up the West Siran Glacier. As on the Chitta, there were only minor cracks except in the more obvious places. The glacier is gently graded except at its head where there is a fine steep slope of some 500 ft. height. We climbed this and had a short rest before running down. We were met with the same snow combination as on the previous occasion: lovely snow on the steep slopes, but slow sodden snow where the slopes flattened out. June is really too late for skiing at these heights. The sun is strong and changes the hard crust of night through sugary spring snow to slush in too short a time. Mid-April to Mid-May would probably give the skier a better chance.

The peak marked 16,445 on the map, and which we christened West Siran Sir had first attracted our attention on the second day out from Balakot. The rear view of it was no less attractive, and we chose it as the objective for our next day's climb. At four we climbed from our tent, and by a quarter to six were on the glacier. The north-east ridge of the mountain juts out into the middle of the West Siran Glacier, and leads steeply from it to the bottom of the seven or eight hundred feet of ice and snow which curve up to the summit. It is this shapely crescent which gives the mountain its beauty. We planned to climb the north-east ridge ant then follow the crest of the curve to the peak. Crossing the bergschrund we

found ourselves in a mess of loose stone and crumbling earth, and the mountain to show it was taking an interest, hurled down a few small stones past our ears. The time taken in slow plodding, route choosing and so on cannot make interesting reading. We climbed slowly first over rock, then step kicking in snow, and rock and snow in turn until we reached the ridge. Round the shapely curve and up to the summit. We had taken eight hours from the camp. The view to the south was obscured by clouds, but to the north we could see a fine stretch of mountains. Below us was the hanging glacier which perched so precariously on the edge of the West Siran Glacier. Going down steadily we reached our camp at five, ate a quick meal and went on to Dumri, our base camp, arriving there at eight.

THE KHABA NAR GLACIERS.

The climb to the foot of the glaciers was steady and pleasant and afforded some excellent views of Mahli Ka Parbat when we turned to look back. The glaciers we were making for kept themselves hidden until we were almost upon them. It was then clear that the west glacier offered nothing to the skier. It was narrow, steep and broken, and we passed it by to go up the broader glacier. We chose, by eye, a camp site, nearing the top of the huge moraine, and started the long climb to get there. We soon learned that what we had taken for a mass of stone disgorged by an age-old glacier, was in fact glacial ice with a layer of stones barely covering the surface. We could find no better place than our chosen one, so selected some flat stones, placed them side by side on the bare ice and pitched our tent. The height of our camp, as for all our high camps, was about 13,000 ft. The evening sun warmed it, and a fine eagle circled over us, surprised to be invaded in his mountain home.

Though we did not take skis with us we judged that the skiing on the glacier would have been quite good. Care would have been needed in the centre section at about 14,000 ft. as there were some biggish ice falls, and the path of the unbroken snow was steep, and none too wide. Above the falls we climbed steadily to the south-east corner of the glacier, reaching the ridge just below the 15,622 peak. The weather was perfect, and we had a fine view

over the West Jora Glacier to the distant Nanga Parbat. The West Jora has a fine open basin, and should give some very good skiing. Round to the south, and below us, we could see the beautiful colouring of the Batkanali Sar. This was our last climb, and we had reached the point from which we were to start the long downward trek back. That afternoon we went no further than Dadai.

Gulmarg is the headquarters of our Club, but we are the Ski Club of India, and not the Ski Club of Gulmarg. India offers a wide variety of places where skiing is possible, and I think that such small ski explorations as we made should appeal to a great many people. The whole trip cost us somewhere between seven and eight hundred rupees each, which is no more than an average leave anywhere in India. The only other suggestion I would make is that trips of this sort should be made in April and not in June. There would be a much bigger chance of getting good skiing, and it is a skiing holiday rather than a trek that I wish to recommend.

SKI CLUB OF INDIA ANNUAL 1943/44.

Two days Spring Skiing in Sikkim—K. H. Wadley

Calcutta and Eastern India generally is a distressingly long way from Gulmarg. Yet a night's rail journey to the north, and one is at the foot of some of the world's highest mountains, and which at this point are only from 30 to 40 miles, as the crow flies, from the northern edge of the Bengal. Keen skiers condemned to an existence beyond the Hooghly must often have wondered whether there wasn't some skiing in the Darjeeling-Sikkim area and within easy striking distance of Calcutta. The Darjeeling ridges are steep, and though within a tantalizing short distance from the snows of Kanchenjunga, it is some distance up the Singalala ridge from Darjeeling before the reliable winter snow line is met, and then, I gather that everything tends to be 'monstrous steep' till some downs are reached, but not till considerably further up this ridge.

The middle of April found me late of an evening studying the map of Sikkim with very special emphasis on a road from Gantok (the Capital of Sikkim) up to the Natu La Pass on the boundary between Sikkim and Tibet, some 28 miles in length and attaining at the pass what, from the snow seeker's point of view, was the extremely reassuring altitude of some 14,400 ft. above sea level. Better still, there were apparently some improvement works going on on, this road directed to bringing what was a narrow cobbled mule track to the same sort of standard as the road into Western Tibet from Simla. Some six miles short of the Pass the map indicated a high level valley enclosing the Chhangu Lake, and there was a Rest House shown at the upper end of the lake. If the Survey of India had done their stuff well, judging from the contours, the sides of the basin at the upper end of the lake, and sloping up to the mountain rim round the end of the valley, should be made for skiing. The map also revealed some other very promising slopes in the vicinity of the pass.

The night Darjeeling Mail takes one from Calcutta to the bottom of the hills at Siliguri. From Siliguri one travels by car to Rangpo.

The Teesta is an astonishing valley, in that it penetrates into the heart of the highest mountains, but with very little rise in altitude of the river bed. At a place some 70 to 80 miles up from the point where the river comes out onto the plains, the floor of the vallep is only 2,000 ft. above sea level, while the monntain range on the East side of the valley is 17,000 ft. in average height while the ridge leading up to Kanchenjunga on the West side of the river is some 20,000 ft. high at that point. Consequently the whole valley is most attractive to mists and rain, and the moisture laden winds from the Bay of Bengal can pour up it before they expend this moisture in heavy rain and snow on the vast mountain barrier, which rings the sides and the head of the valley, and beyond which the Monsoon cannot penetrate in any strength. consequently the lower slopes are densely grown with tropical plants. while higher up the mountains have the soft moist feeling and appearance of the British Hills. On the higher slopes are seen the type of pine which grows in the valleys of the Cairn Gorm Mountains of Scotland.

The flowering trees and shrubs are wonderful and far more spectacular than those in the more Westerly mountains.

At Rangpo we crossed a wood-decked Suspension Bridge, left Bengal and entered Sikkim State. A Pass is needed for entering Sikkim State, and for visitors a Pass giving permission to stay up to three weeks can be odtained on application to the Deputy Commissioner, Darjeeling, and this must be fixed up beforehand, or the sentry at Rangpo will let you go no further.

Next morning we drove on upto Gantok, the Capital, and which is some 25 miles beyond Rangpo and some 70 from the railhead at Siliguri. Gantok is some 5,000 ft. above sea level on a spur rising up from the valley. Behind Gantok the spur goes on up to meet the main ridge of mountains at about 15,000 ft. altitude.

It is a remarkably clean and neat little place and contains among other things the Palace of the Sikkim Raja, a monastery or two, a market, a rest house, and the Residency of the British Political Officer in Sikkim.

Next morning we were up and out of our beds, more or

less at first light, in order to try and see the big peaks before the mists should rise and obscure them. Our energy was rewarded, as there was the whole Kanchenjunga group spread out before us in the early morning light, with the eastern slopes aglow from the sun and the other faces still in shadow. We climbed some few hundred feet above the Residency to get a better view, and it is a sight that I shall long remember. It is probably one of the world's finest pieces of mountain architecture. Kanchenjunga rises as a fine pyramid in the middle, away high above anything else. The height of the summit is 28,150, rather less than 1,000 ft. lower than Everest.

On either side were the not inconsiderable peaks of Pandim and Narsing forming a buttress to the main peak on the South side and to the North there was Simvu and detached from it the lovely summit of Siniolchum. This mountain as seen from the North side has been considered as the finest snow peak in the world. As a comparison of this view with the view of Nanga Parbat from Gulmarg, it may be explained that Kanchenjunga is a bit higher than Nanga Parbat and is only half the distance from Gantok than Nanga Parbat is from Gulmarg. Things are therefore on a pretty big scale.

As we climbed further and further up the spur we left the valley far below us, and soon were in the mist, and we continued to be in the mist till we came to Karponang Rest House which loomed out at us. Here we spent the night. The Austin Seven could go no further, so we set off on foot with some ponies in reserve on the next stage which should take us right up to the Chhangu Lake and the bungalow only some 10 miles on. The road continued to thread its way along the steep hillside with the valley far below us—very unskiable sort of country! There were patches of snow now in every nullah. The road then went round what appeared to be a fairly ordinary spur, and we found ourelves in another valley. A nice sociable high level valley or " hanging valley, " as I think it should be called. The road which had been thousands of feet above the main valley up

from Gantok, now found itself on the floor of this next door valley, and the scale of things immediately became that of the Highlands of Scotland. We went up the side of a very Scottish looking mountain stream, till presently it divided and the road then followed the right hand tributary as we looked up the valley. The ground became more and more carpeted with small compact mauve Primulas, and the patches of snow became larger and larger till eventually round a slight curve we came to a more open part of the valley where there was far more snow than bareground and we could see the white rim of the Barrier of the Chhangu Lake ahead of us but away above us. We could not resist the temptation to try out the skis and this we did solemnly and in turn. It was a bit soggy.

Further up and just below the lake, we had a second run—better this time, though it was a bit later in the day. We were now completely in the snow.

Finally we breasted the last rise and there was the Chhangu Lake before us—snow covered, with the mist wreathing around the mountains at its head. I had never been to Norway but the scene looked like the photographs one sees of that country. Never have I seen such a contrast as that between the Tropical Valley of the Teesta and the Spitzbergen atmosphere of the Chhangu Lake. Yet the nearest point in a straight line in the Teesta Valley is not more than 20 miles from the Lake.

We got up at some unearthly hour like 5 a. m. The sky wos cloudless. The snow was hard underfoot. We decided to climb up to the rim above the lake on the South side and get the view over to the Kanchejunga range. We had a Bhutanese and a Nepalese surveyors with us, in connection wite the road work, and they came as well as did a coolie or two. The Bhutanese looked very picturesque in his National dress, and fur lined cap with earflaps. The climb was a stiff one as we had chosen a direct route up steep rocky south facing slopes so as to avoid deep snow, as the crust in places was not quite strong enough to stand a man's weight.

We reached the top, somewhat out of breath, and were rewarded by a view of the summit of Kanchenjunga sticking up all by itself out of a sea of cloud. In the Easterly direction we looked up to the main range which forms the frontier between Sikkim and Tibet, and a fine range of rocky peaks it is. In the clear morning sunshine the scene was Alpine.

The next morning Warner very kindly gave me 'the Honour' with the skis. The sky was cloudless and the snow frozen far harder than on the previous morning. I set out to discover how far up towards the main ridge one could get by climbing out from the little side valley which held the lake. Above the Chhangu lake there is a second and smaller lake, in fact a diminutive lake, and from this one can go on up a ridge for some distance to a small snow summit, after which climbing boots are needed rather than skis for an attack on the remainder of the spur. The little snow dome was, however, a very worthy objective by any standard. The view across to Kanchenjunga was superb on this morning and there was no cloud to obscure it. The run down from the snow dome to the lake is about 2,500 ft. in my estimation and as far as could be ascertained from the contours on the map. It is a most interesting run, with flat bits and steep bits and narrowish gulleys and wide open faces. I thought it was sheer bliss, and a more lovely morning one could not wish for. The snow was still pretty hard, and I wanted to hand the skis over to Warner while there was still time for him to do a run before the snow should soften, but the hardness was compensated by extreme fastness of the snow, and very flat traverses produced the maximum of speed thrills and the whole length of the run was considerably spun out in this way. A schuss leading out to a lovely flat run out by the upper lake I will long remember. I went rather for the South facing slopes which had begun to soften out a little. Warner later went for the West facers more and later runs could have been done on slopes facing North, but be that time alaswe were off back down the hill to Gantok. That is one of the beauties of the Chhangu basin, one can take the pick of the slopes, as far as their direction is concered, and so get the best of the softening snow over a longer period.

Leaving Calcutta by the Darjeeling Mail on one evening one could spend the following night at Karponang, and get to Chhangu the next morning by noon. The elevation of Chhangu is, however, quite considerable, being about 12,000 ft., and one would be advised to go pretty slow the first day or so, the more so after coming from what to me is the somewhat devitalising climate of Bengal.

Close to the Natu La is another Pass, the Jelep La, which is the approach to the Tibetan Border from the Kalimpong side.

This route has an opposite number to the Chhangu Bungalow in the Kupup Bungalow, some eight miles from Chhangu and at about the same level. These two anchors should make a number of trips on ski in that area possible. I hope to see the Kupup Bungalow when I go up again on inspection in October.

The basin above the Chhangu Lake is very boulder bestrewn, so I am told, and so the map says, and as small bumps in the thick mantle of snow which lay over the ground at the time of our visit would lead one to believe. I therefore do not think that the few falls of fresh snow at Christmas time would do much to cover them up. So I feel that Chhangu is a place for the Spring—March and April.

Permission to use the Rest Houses can be obtained from the Political Officer in Sikkim or from the Executive Engineer, Roads, Gantok.

In North Sikkim, I understand. that there is some very fine skiing country, and I gazed up in that direction through the glasses, and the slopes up near the Donkya Pass and the Sebu La where the Himalayan Club have two huts looks excellent. Weather might be a little more reliable as well. The Natu La Ridge tends to stop everything that comes up from the Bengal Plains in the way of moisture, so it is hoped that this ridge acts as a bit of a filter, and that not so much gets up to the north of the valley. The upper Teesta is, however, at least five days trek up from Gantok, and a longer leave would be needed. It is possible to do something on skis at Chhangu and yet spend only six days away from Calcutta.

SKI CLUB OF INDIA ANNUAL 1943/44.

Skiing in Murree ... ... R. H. Sams.

The ski season opened in Murree with the first heavy fall of snow on about January 7th, though a few enthusiasts had a day or two of skiing on thin snow before that date.

Both experts and beginners started on the "Nursery Slope", a small and somewhat irregular though gentle patch called Treffy's Field, between "Brockhurst" and "Fredwell Cottage". This grassy slope had a north aspect, and so always contained plenty of snow, and was a favourite place for practicing straight running and turns.

With the stiffness wearing off, the nursery slope was abandoned for the larger and more ambitious slopes. There was the drive of the Cecil Hotel, a long run (at least long for Murree), icy most of the way, with three exciting turns in the middle. This run was delightful when the snow was soft, but you had to be a giant at the game to survive the entire length when it was icy. Then there was the "Quarry" below "Dundridge". This rock quarry had a steep bank at the back which flattened out to a straight run into a field at the bottom. As the bank and tall pine trees all round almost completely shaded this place, the snow there remained thick and powdery long after the snow on other slopes had hardened with repeated melting during the day and refreezing at night.

Another favourite and well sheltered ski field was just below "The Retreat". The slope had a field terrace across the middle, which gave a small but thrilling little jump to negotiate.

The main ski runs of Murree, which had been well established before the war, when a car met skiers at the lower end and brought them back to the top, were not used. They had long since become overgrown with bushes, and as transport was leacking, no attempt was made to clear them before the snow arrived.

On Sundays all who had skis, and several who hadn't, joined the ski party. A bus was arranged, the rendezvous being the Post Office, and a hilarious party tumbled into the bus at 100 0 0' clock. Ski paraphernalia, picnic baskets, drinks and warm clothing were heaped inside and onto the top, where the drivers mate cheerfully piled every thing large and small, and secured them with a rope. We then set off. A few minutes later we arrived at Chamber's Hotel, the second rendezvous' where a large addition to the party had an even more complicated scramble to get in.

With many lurchings, and creakings, the protesting bus brought the party to the Dairy Farm. This was the Military Dairy Farm at Jhikagali. Due to the fact that it was well away from Murree, and that it had comparatively more space among beautiful surrounding pine woods for skiing, this farm was a favourite place for Sunday ski parties.

It didn't take long for everyone to start skiing. Some went off to explore new hunting grounds in the farm area. There were many good places, both difficult and easy. Gharial is perheps comparable to the Dairy Farm and worth visiting as an outlying Ski field.

With the shadows lengthening, and the snow beginning to freeze up again, the bus took us home to Murree.

The snow in Murree lasted till well into March, though its quality deteriorated after the end of February, As a parting gesture the final snow fell on April 1st.

Ed. There is a ski map of Murree in the Survey of India Office Murree.

SKI CLUB OF INDIA ANNUAL 1942/43

Skiing near Abbottabad ... ... B. H. Williams.

One inch Ordnance survey map. Abbottabad and Surrunding Country and map Sheet No 43 F/8

We had a car to take us as far as the snow would permit. At Thai we collected two five ft. boards to help the car over broken culverts, and we eventually got to the 15th milestone from Abbottabad, about four miles from Bagnotar. There it was obvious that the sledge we had brought with us for carrying the kit would not be necessary, and the coolies casily made Nathia Gali some five miles on.

At Kala Bagh we went to see the Forest Bungalow and to our surprise found the lawn and garden provided very good if small practice slopes. Below in the woods was a run typical of these parts—very steep, tree studded and too narrow for long traverses. However we had some pleasant runs on these slopes which were not really too difficult. We then went on to Government House and settled into an office complete with beds that had been put at our disposal. We were lucky to pick up a bearer there. We had expected to be fairly roughly housed but were remarkably comfortable with a good fire of pine logs roaring up the chimney.

At 9 o'cock on Sunday we set out for the summit of Miranjani, 9,780 ft. and four miles distant. The distance is important because Government House is the nearest bungalow to Miranjani from a skiing point to view. We duly reached the top by a path only partly covered in snow. From there we had a grand view back over the Galis and Mokspuri in the direction of Murree. The bare rocky hills stretched out towards Rawalpindi. With field glasses I picked out our barracks and parade grounds at Abbottabad some 11 miles as the crow flies. The nearer flr-covered and snow-streaked hills led the eye to the all-white mountains of the Kagan and Pir Panjal on the Kashmir borders.

The snow on the summit of Miranjani proved to be plentiful and we did a good if somewhat difficult Ridge run toward Miranjani Chowki. This ridge continues left handed past the Chowki for at least 2 miles affording good running. There are at least three North West gullies that provide good skiing of a somewhat steep variety. The snow was soapy where the sun had got at it but the more shady spots were fast. We lunched on the summit cairn and then set about the return trip to Nathia Gali. This side of Miranjani faces South and so there was less snow than on the North slopes.

The whole week-end was a success. Owing however to the undermentioned difficulties it is doubt ful if Miranjani can become really popular for skiing.

1. Distance and difficulty of Abbottabad—Nathia Gali road if under snow.

2. Distance between habitable bungalows and the best Miranjani slopes. The Kala Bagh Forest Bungalow is further from Miranjani than Government House, though good practice could be put in at the former.

3. The precipitous nature of most runs and the lack of a graded run out below them.

EDITORS NOTE—A bivouac near the top of Miranjani is essential if full advantage is to be taken of the North slopes past Miranjani Chowki.

If the Abbottabad—Nathia Gali—Murree Road is open, the end of February would prabably be the best time of year for Skiing in this area.

THE SKI CLUB OF INDIA ANNUAL 1942/43.

In praise of Simla Skiing ... ... K. Wadley.

To get skiing one has to go eight miles out of Simla and up the Hindustan Tibet Road, past the Wild Flower Hall Hotel to the little P. W. D. Rest House at Kufri. The Rest House is at over 8,000 feet and from there one can go up a hill, the top of which is close on 9,000 feet and where the snow lies well and accumulates to depths of several feet in a good snow year.

The Rest House has of late years become a popular summer week-end resort for the Ministers and higher officials of the Punjab Government and it has been brightened up a lot and is as charming a little bungalow as one is likely to get in the Himalayas, fitted out with every comfort, including mattresses for the beds and crockery and cooking utensils. There is no khansamah, but a friendly and helpful chaukidar-*cum*-mali, and we found that if we took one " Bearer " with the party things went smoothly indeed.

One has to get a pass to occupy the rest House and you apply to the Executive Engineer, Simla Provincial Division, Winterfield, Simla, for this. The Rest House has five beds.

It is best to take all one's food out from Simla. The chaukidar has been known to produce an egg or some milk or a chicken from Kufri Village, close by, but supplies are unreliable.

The safest time for ensuring that there will be good snow at Kufri is from about the beginning of January till about the 20th of February. There is seldom much snow before the beginning of January though this last winter there was plenty from the middle of December.

After about the 25th February spring sets in in earnest at that height.

In my previous article I talked chiefly about the slopes in

the potato fields below Kufri Village. Since then we have made more and better use of the slopes at the top of the hill above and beyond Kufri Village, the summit being on the main ridge about half way between Kufri and Fagu. Finding the way up to the summit is a shade tricky for newcomers.

The slopes at the top of the hill face East, and previously we tended to rule them out as being spoiled by sun and stuck to the more north facing slopes below the village. The top of the hill is however nearly 1,000 ft. above the village of Kufri and this makes all the difference. It is cold enough up there for the snow to stand up to a bit of sun and doesn't crust nearly as much as we expected.

Present day expeditions therefore make for the top of the hill (called Mahasu, I believe) and there proceed to throw themselves about. The top of the hill is a delightful spot, with a first rate view of some 300 mile of Himalaya. On a fine day, one can just see the top of Nanda Devi-Trisul group to the S. E. and to the N. W. one sees the Kulu and Lahoul peaks and round to the Dhaulla Dhar above Kangra.

The slopes are not extensive but plenty of fun for a week-end and the longest run is just long enough to make it worth while putting on skins for the climb up. From the summit there is a steep schuss down to a bowl—where are two ponds—frozen add snowed over in winter, and this bowl gives excellent easy slopes for the beginner to start on, with no way of unpremeditated escape in that the sides of the bowl, in all but one direction, slopes upwards again to stop one when in unstable motion The more ambitious can hurtle at speed through the bowl turn left down a gully, then right over a shoulder, and on down some 300 ft. to a col where the run ends in a series of terraces.

Below the main summit (called the " cairn "—as there is a cairn there,) is a lower summit on the other side of the bowl where there is a most attractive little temple. This Temple is no longer

used for purposes of worship and all inside it has been dismantled which, from the skiers point of view, is an admirable arrangement, as with full consent and permission of our hill coolies we can use it as a ski hut in the event of bad weather. This last February we spent a happy hour inside—community singing while a severe electric storm went on without.

Lunch is always taken up from the Rest House to the top of the hill—the summit is about an hour's walk up from the Rest House and skins are a help but not essential—one can beat a way up on foot and the path is used a bit and beaten to a certain extent except after a fresh fall of snow.

SKI CLUB OF INDIA ANNUAL 1939—40 1940—41.

Skis in Chitral ... ... M. W. H. White.

As everyone knows Chitral is a small mountainous State in the midst of the Hindu Kush ranges. During the last two skiing seasons I have been exploring its skiing posibilities and these notes are the result. It is realised that Chitral is very much off the beaten track and that permission to visit it is not easily obtained.

GENERAL DESCRIPTION.—Chitral is entirely mountainous and the slopes exceedingly steep. What look like sheer cliff faces of 5,000 too 6,000 ft. high are the rule rather than the exception. Generally north facing slopes are all cliff and the best skiing country is found on south facing ones.

Winter skiing up to the middle of February is therefore not pleasant. The north facing slopes are generally too steep and dangerous to go on to and the south facing ones hold breakable sun-crust.

After the middle of February the sun has regained sufficient power to melt these thoroughly and produces hard spring crust which is delightful. As the year goes on and they become dry the north facing ones become skiable. It is therefore safe to say that provided one is prepared to rough it one can get good skiing from mid-February to June.

WEATHER.—The first falls of snow usually occur in October down to about 8,000 ft. They generally melt again up to 11,500 ft. On 31st October, 1931 I got very good powder snow skiing at 10,000 ft.

The main falls of the winter usually coincide with those at Gulmurg. The Lowari Pass, 10,420 ft., which carries the only road into Chitral closes for mule traffic about 20th December. I have skied over it twice in mid-January and twice in April.

February is a variable month though during the past two years it has been very fine. During 1940 we had no snowfall from 31st January to 13th March. This is however an exception. The weather deteriorates about the midle of March. During the past two years we have had almost continual snow or rains from then to mid-April. All the inhabitants acknowledge that these two years have been the warmest and dryest in memory and therefore my statements should be treated with reserve. From mid-April onwards the weather is generally dry.

SNOW CONDITIONS.—The powder snow found on north facing slopes in January and February, is of a particularly soft, deep, and dry variety not like that found in Gulmarg. Even running downhill many days after a new fall one sinks in over two feet. Running is uncomfortable and turning an effort.

Once spring snow conditions occur the surface is delightful.

The danger from avalanches is very great, more so than at Gulmarg. The reason for this is the extreme steepness of the peaks above. Though one may be on a perfectly safe slope oneself one never knows when an avalanche may not start some thousands of feet above one. It is necessary to be continually looking well up. On numerous occasions I have seen big avalanches come rolling down the cliffs like huge waterfalls. Sometimes they reach the botom before their roar is heard.

PERMISSION TO VISIT CHITRAL, ACCOMMODATION AND SUPPLIES.—Permission to visit Chitral must first be obtained through the Political Agent, Malakand. This is not likely to be obtained urgently as the sanction of the Mehtar of Chitral and N. W. F. P. Government are necessary.

Chitral is easily reached by lorry to Dir and then by foot or pony. The Lowari Pass is at times closed during the winter and spring for 3 or 4 days at a time due to bad weather. There are however levy posts at Gujar and Ziarat. The former is 4 miles on the Dir side of the Pass and the latter an equal distance on the Chitral side.

There is a motor road from Ashret, 8 miles below the Pass to Chitral town 40 miles further on. A lorry can be obtained by prior arrangement. North of Chitral all travelis by foot or pony. Normally in January and February, ponies cannot be used owing to the bad state of the roads and ice under foot.

Bungalows are few and poor except on the main route from Chitral to Mastuj and Gilgit. Chitrali houses are always obtainable but they are not to be recommended. They have no chimneys and the smoke trickles out through a hole in the roof.

There are fairly good bunglows however in the main skiing centres and at Madaglasht, the H. Q. of the ski Club of Chitral, there is a good Ski Hut with room for eight people.

Supplies are a difficulty and should be brought from India. Though the country can supply a little atta, rice, ghee, eggs, fowls, etc.; it is not fair to ask for them. Chitral is a very poor State with no surplus produce. There is always a danger of scarcity or famine in the late spring and early summer before the winter wheat is gathered and the possession of money to a villager is no good then as he can buy nothing with it. There are no shops or bazars anywhere in the State except at Drosh and Chitral. The villagers from outlying districts very often cannot get into these bazaars owing to land slides, wrecked bridges or swollen rivers.

Wood for cooking and fires is also scarce north of Chitral town. It is generally bad being either poplar or willow. Plenty of warning should always be given as it may have to be brought n from considerable distances.

Skiing Localities.

(*a*) MADAGLASHT.—This has been used as the H. Q. of the Ski Club of Chitral, since 1931 and accounts of its meetings used to appear in the annual. The Ski Hut at a height of 9,600 ft. is 30 miles (2 stages) from Drosh, the Chitral garrison station. It is situated on the edge of a fairly broad and flat-bottomed valley

through which the Shishi river runs. The valley runs in a general south-east direction and is dotted with groves of deodars. The north facing slopes are rocky and precipitous and completely unskiable excpt in two or three places. Those facing south and south-west are less severe.

The main valley is joined at the Hut by the Pashkori stream which flows north-west from the glacier of that name. It enters the main valley through a very narrow tangi commanded by cliffs of over 5,000 ft. on either side. This tangi can be a death-trap and may be choked with avalanche debris. In February this year it was quite safe, possibly due to the very low snowfall. By March it was choked and we were unable to pass through in safety, The slopes above are delightful. In February we enjoyed runs of 3,500 ft. of pure powder. It is not possible to go very much higher as one gets to the snout of a badly crevassed glacier.

One and a half miles above the Hut the main valley devides. The right fork runs north-east and then turns round due south to the Andowir Glacier and pass. The snout of the glacier is approximately at the turn from north-east to south. There is a good 3,000 ft of powder snow skiing in winter from the snout of the glacier down.

The glacier itself is unsafe in winter but is said to be the finest run in the district in the spring, We tried it this year in April but the weather was consistantly bad for the whole five days we were at the Hut. Two skiers did it in 1938. The climb to the top of the pass 15,020 ft. took $7\frac{1}{2}$ hours but the run down was on perfect hard crust.

The left hand fork of the main valley continues in a north-easterly direction to the Lohigal and Dok passes of about 14,000 ft. each. The general angle of the valley is very slight but it gives a good straight run on spring crust. To my knowledge the skiing possibilities of both passes have not yet been explored.

There is a second small Hut above the main one on the

far side of the valley and about 1,500 ft. above. Owing to the scarcity of snow on the south facing slopes this year we did not go up. There seem to be some good runs above it but they look dangerous. It was above this Hut in 1931 that a whole party got carried away in an avalanche luckily without casualties.

There are two local Chitrali guides at Madaglasht who have been trained to ski by past members of the Chitral Ski Club. Their names are "George" and "Albert." They are both exceedingly good skiers, particularly the former. They serve a very useful purpose as with the garrison changing over every two years, there are no old members.

(*b*) BIRMOGHLASHT.—Birmoghlasht is $1\frac{1}{2}$ hours walk from Chitral town. It is a broad fairly gentle ridge running from 10,000 ft. to 8,300 ft. on which His Highness the Mehtar of Chitral has built a very good bungalow for his use in the summer.

Owing to its nearness to Chitral it is always likely to be popular though it does not offer any long runs. It is an excellent practice ground with a variety of short and interesting runs including three extra special little wood-runs of about 700 ft. that we discovered this year.

The ridge runs due east and the earlier portion of the year one is confined to the north facing slopes where good powder snow is usually obtained. It may sometimes be ruined by the strong north wind which blows off Tirich Mir.

(*c*) MULIKHO. Mulikho is one of the districts of Chitral lying between three and six stages north-east of Chitral town on the right bank of the Kunar river. The district is divided by the prolongation of the main east ridge of Tirich Mir. This ridge is the watershed between the north and south flowing glaciers of the mountain. In Mulikho district the ridge looks not at all unlike Apharwat at Gulmarg. It is level on the top at about 13,000 ft. dropping down to 6,500 ft. but it faces south-east and south and is about twelve miles long.

I have skied on it at the begining of March, and got 4,500 ft. of continuous running on ideal spring snow. There are any number of runs to be explored all equally good as the slopes are not rocky and the angle is much easier than normally in Chitral

For exploring the Mulikho skiing the living problem is not too difficult. There is a good bungalow at Drasan. This unfortunately is rather low being at the very bottom of the slopes at 6,500 ft.

There is another small 2 roomed Guest House at Zani 1,500 ft. higher up and near the best slopes, but the best place of the lot to stay at is the highest village (10,000 ft.) UTHUL. Unfortunately there is no decent bungalow there.

(*d*) TURIKHO.—Turikho lies to the north of Mulikho. In fact the meaning of the two words is "High lands" (Turikho) and "low lands" (Mulikho).

I consider the skiing in Turikho to be the best in the country, and better than that obtained above the Khillan Hut at Gulmarg.

The main place to go to is KHOT. It lies seven stages from Chitral town. Khot is a long straggling series of hamlets spread over 3 or 4 miles in length at a height of between 10,000 ft. and 11,000 ft.

The valley runs south-west, the skiing being obtained on the north and south facing slopes on either side. Those on the left bank of the valley which face north are steep and hold very deep powder snow even at the beginning of March. Earlier in the year they would be dangerous but they will give excellent skiing up to June, or later. The prevailing snow-bearing wind is from the south and the northern crests of all the ridges are heavily corniced.

The slopes on the right bank of the valley drop from a long broad and fairly gentle ridge. This ridges is nearly 15 miles

long and drops from pt. 16,783 to 8,000 ft. It is very broad and encloses vast snow-fields. The spurs dropping from it to the valley are equally gentle and are only really steep for the last 300 ft. or so. In certain conditions it might be necessary to carry skis up a small distance but once the steep bit is negotiated one is faced with an endless expance of snow. Owing to these slopes facing south-west they quickly crust over and by the end of February at any rate give perfect spring snow skiing. There seems to be no danger of avalanches as the skiing is confined to broad ridges which are not sufficiently steep.

I have done four long runs from Khot, two on either side of the valley. On the north facing slopes the first was towards the Khot Pass. The slopes is excellent but in March 1940 the snow was so dry, soft and cold that one sank in almost to the knees and could hardly move. Under spring conditions this would be an ideal run. There are numerous variations and one can get right to the crest of the ridge at about 15,000 ft. The second run was from a col about two miles up the valley. This was a better run on perfect powder snow but the slope is steep.

On the right bank the two runs were up the main ridge. On each occasion we gave up after 4½ hours climb at about 14,000 ft. as the weather was getting bad. It seemed that there was enough slope ahead to go on climbing for another 4½ hours. The snow conditions on the run down were perfect and very fast. It is a grand place to practice Swing Turns as there is so much space. The run took 45 minutes with two short stops for breath.

I strongly recommend any one with a couple of weeks leave in March or April to go to Khot and explore the possibilities of a really excellent skiing centre.

There is a small but good bungalow at Khot which belongs to the Governor of Turikho. Local supplies are obtainable though wood is mainly popular.

(*e*) MASTUJ AND LASPUR.—The mountains are too precipitious and rocky to give good skiing. In places they rise thirteen

thousands feet in one sweep. It is possible to use skis across the SHANDUR PASS between Chitral and Gilgit. The top of the pass 12,400 ft. is a long flat plain 5 miles in length holding two big lakes. There is a drop of nearly 3,000 ft. from the lip of the plain to Sor Laspur, the first village on the Chitral side. Provided there is enough snow this will give excellent skiing. I have been on the top of the pass in early February 1940 when there was not much more than six inches of snow and the road from Sor Laspur to half-way up was quite dry.

There is a bitterly cold south wind on the pass which sweeps all the snow off the slopes. There is danger of wind-slab snow and one small wind-slab avalanche had come down near the top when I was there.

It seems that April is the best time for skiing on the Shandur. There is more likelihood of deep snow then and it is warmer. In February it was so bitterly cold that I nearly got one foot frost-bitten.

(*f*) LOWARI PASS.—Any one entering Chitral during the winter spring months should take skis across this pass. There is an excellent run of 3,000 ft. to Ziarat levy post and after heavy new snowfalls one can get considerably lower The first thousand feet is extremely steep as one is coming down a narrow gully. The skiing is not anything like so pleasant in January as it is in March and April. Enough snow has not fallen then to make skiing down the main nullah possible and one is forced to keep to the hillside and mule path. By March the nullah holds enough snow to enable one to keep to it nearly the whole way down. It is however likely to be crossed in places by large tongues of avalanche debris which are not pleasant for skiing.

The Lowari Pass is dangerous and should not be attempted in bad weather. In the spring one should be on the summit by 10 a. m. at latest.

The slope on the Dir side of the pass is less steep than on the Chitral side. It is apt to be very wind-crusted in winter but is ideal in the spring. I have not crossed it from Chitral to Dir on skis myself but there is the story of a Sapper who ran from the top to Gujar levy post a distance of 4 miles in 15 minutes.

These notes on skiing in Chitral are, I realize, very bare. This only goes to show the large field open to the enterprising explorer who has sufficient time and can get permission to enter the State. There are many areas that I have not touched on because there is no living accommodation nearby. The explorer would have an excellent holiday touring the country in late April and May as it would then be possible to camp out near the snow line. The Chitral Scouts will always be willing to give whatever help and advice they can in procuring transport interpreters and in selection of areas.

SKI CLUB OF INDIA ANNUAL 1941/42.

Skiing on the Tragbal Pass. 24th April—Victor Ellvers.

The Tragbal Pass, 12,000 ft. is on the main road from Srinagar to Gilgit, the first landmark, and, in fact, the Rest House, which is about 1,500 ft. below where the Pass commences, is where one spends the first night.

To get to the Tragbal, one motors through Bandipur on the Wular Lake and a mile or two beyond to the village of Soporwani, where the motor road ends and where coolies or pack ponies are engaged. It is only six or seven miles of very good road to the Rest House at Tragbal, in fact, by the coolie path, only three or four. So, allowing two hours for the motor run—a very pleasant trip past Mansabal Lake on your right and then the Wular Lake on your left—an hour for loading on to pack ponies or coolies and another two hours up the hill, you are at the Rest House in an easy five hours after leaving Srinagar.

I arrived at Tragbal Rest House on the evening of the 23rd. Next morning I left at 6-30, after breakfast, in order to get on the Pass while the snow was still hard. By eight o'clock I was at the beginning of the Pass, which is a little less than 11,000 ft., and where the Tragbal Pass proper commences. The snow looked good and, indeed, was excellent. Before me stretched perfect snow for more than two miles to the top of the Pass, a gradual climb for about another 700 ft. This two miles to the top has undulating ground on either side, presenting a choice of all kinds of grades to ski on, from nursery slopes to Lone Tree slopes. However, as I had to make Koragbal Rest House, near the Kishenganga River, that evening, and was dependent on coolie transport, I felt it wiser to push on; besides, I wanted to get to the downhill runs on the other side of the Pass before the snow became wet. The snow on top was packed tight with just a slight covering of powder snow. It was easy going, and skins were unnecessary.

It was still freezing between eight and nine o'clock.

From the Pass I had a marvellous siew of Nanga Parbat, in fact everything was perfect, except for a rather cold wind on the very top.

From the top, there is a gradual descent of a mile, and then, instead of carrying on along the ordinary summer route, I turned sharp right, down a Nala, which eventually joins the main Gorai or Koragbal Stream. Down this Nala, 1 experienced two to three thousand feet of the best downhill running I have ever enjoyed in my life, comparable to any of the best in Switzerland. The Nala for the first two thousand feet was fairly steep—not too steep, but anyway one felt full of confidence because the Nala was not too wide and on either side the hillside was deep in snow, and so all I had to do when I felt 1 was getting out of control was to swing right or left.

After a drop of 3,000 ft., the snow became softer, and as the Nala was not so steep I had to content myself with slower running, ski skating, with every now and then a "schuss."

I was able to keep my skis on to within a mile of the bungalow at Koragbal, which is nine miles from the top of the Pass by the ordinary road, or three hours in the summer time. It took me just over an hour, and had the snow in the last three miles been less wet I should not have taken much more than half an hour.

I believe the Tragbal would be excellent place to hold the Ski Club of India's Spring Meeting some time as a change from Gulmarg. As I have already said, 1 reached the Rest House in a day from Srinagar, and there are several other Rest Houses at Tragbal. There is a variety of excellent runs on the Pass, slopes to meet every possible class of skier. I very much look forward to another visit to the Tragbal, when snow is on the Pass.

SKI CLUB OF INDIA ANNUAL 1936 37.

Spring Skiing near Kolahoi, May. 1st 1937.— K. C. Hadow.

(In the following account of a week-end ski-ing trip to the Kolahoi area the Maps used were the Survey of India sheets 43. N. 4 and N. 8.)

The Kolahoi glacier has undoubtedly a great refrigerating influence on its neighbourhood and keeps the snow in much better ski-ing condition during a warm, period than any area which is not similarly assisted.

Moreover, it is very easily reached from Srinagar and offers the most beautiful scenery for the approach march.

There appeared to be every hope of some good skiing in the short space of the two days that were available to us, and we were not disappointed.

It is an easy three-hour motor car run (60 miles) to Pahalgam from Srinagar via Islamabad Anantnag) and by the good motoring road which runs up the left bank of the Liddar Valley. Pahalgam is at an altitude of 7,000 feet above sea level, and thus entails a climb of 1,700 feet from Islamabad in in a distance of 25 miles.

Here we spent the night in the Forest Rest House for which permission had been very kindly given to us by the Divisional Forest Officer at Islamabad.

Our party reached Liddarwat at five o'clock and crossed the river by the new bridge to the ground situated to the north-west of the intersection of the Dandabari and Kolahoi streams.

Here camp was pitched on a grassy shelf of ground, sheltered from the cold winds which blow down the valleys in the

evenings and early mornings, and we avoided the area which had been fouled by sheep in the summer and autumn.

There is an ideal camping site two miles beyond ours in the direction of Kallan. It is situated in a very sheltered spot in a grove of silver birch trees, on beautifully dry ground, with unlimited firewood and gloriously clear water beside the tents.

Next morning four coolies came with us to carry our two pairs of skis and two rucksacks plus their own food. Actually two coolies would have been ample but four men made them feel happier and to us it did not matter.

The tracks of the previous evening were very useful and the men used two candle lanterns. while each of us had an electric pocket torch. These were necessary through the rocks and trees until daylight came when we reached Kallan.

The route we followed kept to the right bank of the river until past the Rewil Nullah, then crossed over to the left bank for half a mile above Kolahoi-in-Kot and then kept to the right bank till we reached our destination at the Ice Fall three hundred feet above the Seracs which are marked on the map at the snout of the Kolahoi glacier.

The walking was easy for us in our nailed climbing boots and we were able to contour along happily while the coolies followed a more level and easier route for them on the bottom of the nullah.

Ample fuel and excellent camping sites exist on the left bank of the nullah above Kolahoi-in-Kot, near Hoksar Baikh, and in the small birch forest north of Dudh Nagh.

In fact there should be no difficulty in camping anywhere here at any time later in the year when the snow has melted enough to enable the coolies to camp in the Goojir huts at these places.

Most of the avalanches which were likely to come down this year had descended already and in any case it was quite safe owing to our having started so early in the morning and we were making excellent progress.

Having reached our objective on the glacier at nearly 12,100 feet elevation at about nine o'clock, we changed our climbing boots for our ski boots and watched by our envious coolies who had to descend almost as slowly as they had come up on the hard snow, we had six hundred feet of very fast ski-ing on a hard snow.

Thereafter we skied easily and with great pleasure as far as Kolahoi-in-Kot but with the snow becoming softer and more springlike all the time

We had an early lunch at a point one mile further on where the Rewil Nullah comes in to the right bank. Then skied as far as a point two-thirds of the way towards Liddarwat from Kallan. where we reluctantly had to admit that the sun had exposed too much ground to make ski-ing fast or amusing enough.

This meant that we had had about seven miles of most varied and amusing ski-ing, where it was easy for anyone to go if one went slow, but where there was plenty of fun in choosing out one's own route and in taking "schusses," crossing small avalanches, contouring on steep hillsides, crossing snow bridges, etc.

There was no danger but a lot of amusement and plenty of practice for all kinds of turns.

A route on the map which seems to offer good possibilities but which would need care and good ski-ing is the path which is shown on the map running to the west of Kolahoi from the point which we reached, but continuing thence to the col to to the west of Buttress Peak, down to Katarnag, down Girwar Nar and past Girwar to Arau.

Editors note. A very full and beautifully illustrated article on Summer Skiing in the Pir Panjal and Kolahoi areas appeared in the 1939—40 1940—41 Annual. By Evelyn wood.

SKI CLUB OF INDIA ANNUAL 1933—34.

Around Pandan Patri, 27th March—R. L. Holdsworth.

Map sheet No. 43K/5. Ref: also H. C. J. Hunt 1931/32 Annual.

On the 29th I reached the camping site, and found it, as the described at about 9,400 feet, on a tree-covered spur, where nallah divides into three branches, one going S , and then S. W. in the direction of Hadbal, another due S. (Hunt's B. Nallah) to Jamianwali Gali, and the third (Hunt's A Nallah) S. E. and then South.

I paid off all the porters but three, who were to help in camp, and carry my skis, and kept my bearer and a cook, These were in two hired porters' tents ; while I used my own small meade tent. The camp at first was in the snow, though on the spur it was not too deep to be cleared away with a spade. At the same time the cook and bearer would obviously have preferred a site lower down. I felt, however that if I was to ascend the high passes and have I chance of climbing Shin Mahinyu, I must sleep at least as high as Hunt did.

The whole country is ideal for skiing. It reminded me much in places of the Parsenn, except that the peaks that shut in the main nallahs are more imposing. It has the great advantage too that once you are in camp, you are quite safe from avalanches, and, in the worst weather an expedition of some kind can be safely attempted.

The expeditions themselves are very numerous. I only repeated myself once while there, and then deliberately, and I left all the area S. E. of Pejanpathri untouched, owing to bad weather. With a permanent hut at the site of my camp, it would be easy to push a light camp out into Tosha Maidan, from which the fine ski-ing country S. of Shin Mahinyu could be attempted.

My first morning, the 30th, I lay in bed fairly late. It was still very misty. With unquenchable optimism, I decided it was going to clear up, and set out up Hunt's B. Nallah, intending to reach the Jamianwali Gali, 13,400 feet. I was wrong about the weather. After starting in my shirt-sleeves, I had soon got on every stitch of spare clothing, and was plodding along against a violent head-wind, with squalls of hail. On a good day, it is an easy climb, but I took nearly five hours to reach the pass, and decided I had done much too much for a first day. However, it was too cold to stop and rest. What a grand run down it would have been if I had felt fresh, and if the snow had been reasonably good. Almost all straight-rnnning for six miles, with a drop of 4,000 feet.

After a beautiful night and a good frost, I started out to climb up Hunt's A. Nallah, and descend by B. Nallah, crossing the 13,7000 feet pass he mentions. (Incidentally, I can only make this pass 13,600). There is no possible pass higher up on the ridge. I got into A. Nallah by first descending into B., and then crossing a small col, between two strips of forest, Just S.E. of the I of Nagha patri. This saves a disagreeable scramble. I then followed the bed of the nallah, and, passing the first tributary from the S.W., followed up the second, and reached the pass in four hours and a quarter. The descent into B. Nallah looked rather fierce, and is certainly very steep for the first hundred foot. There after it is less steep, though by no means gentle enough to permit straight running, until you are in the nallah bed.

It was irritating to find that high up the sun of the previous day had not been strong enough to form a solid crust, and the top part was breakable. The middle part was very good indeed, but about 10,000 feet it was slow again. In spite of the difficult upper part, I was down to the stream below camp, in exactly half-an-hour. In perfect snow it is a first-class run, better than anything on Apharwat, and gives you 4,200 feet of running. So good was it, that I decided to do it again, under

what I thought should be perfect conditions. But a cloudy night and a rising wind ruined the snow, and I had a disappointing run.

In the evening, after tea, I climbed up C. Nallah (the one leading to Hadbal) for 1,500 feet, as far as the Pandan Pathri Gujar hut, marked on the map ; discovered the possibility of a tour by both branches of this nallah, and came down on fine slopes, just hardening up. It is best to get into this gully by first climbing up the wooded spur on which the camp is situated.

There was strong wind that night and snow fell, and was lying for a depth of four inches round the camp on the morning of the 3rd, I decided that I should only find slow and sticky snow in either of the main nallahs, so started up C. again, taking the same route as the evening before, and then continuing up a steep ridge in the direction of Hadbal. It proved much steeper than it looked, but, by keeping to the part which was scrub-covered I avoided any danger, and soon the slope eased off. I followed the ridge up to about the 12,800 contour, and could eastly have climbed Hadbal, but the slope was an easterly one and I was afraid that the new powder snow would form a nasty crust as soon as the sun left it, and it was desirable to come down that steep slope while it was in a skiable condition. As it was I came down on melting powder snow, with due circumspection, having to put in innumerable turns. Actually one descends 3,400 feet in two miles, a gradient that works, out at about 1 in 2.8, I think the most continuously steep run I have done, though quite safe, provided one sticks faithfully to the ridge, and resists the temptation to traverse across into the gully, where of course the snow is much deeper and less secure.

April 4th was a fine morning, after a good frost. I set off soon after seven, intending to climb up B. Nallah, to the foot of the big unnamed peak at its head, which is so conspicuous from Gulmarg. I found the snow in the nallah so wind-blown that I climbed out on the slopes to the right, where I hoped the sun would have had a chance of softening the crust. So, by accident,

I discovered a charming tour, which, apologies to Murren, I will call "Hidden Valley". I left the nallah about the 1,100, feet contour, and, crossing a tributary nallah just short of 1,200 feet, continued in the direction of what looked like a small pass. It was not a pass but marked the spot where the tributary nallah I had crossed decended from gentler slopes above. Surmounting this point, I found myself on gently undulating ground, sheltered from the wind by the cirque of mountains round about the IR of Pir Panjal. The lie of the ground suggested my turning in the direction of Hadbal, and I crossed a shoulder, with a rock ridge on may left Beyond me an inviting snow-slope led up to what I thought might be a pass into Poonch. I started to climb it, but found that the last 150 feet were too steep to be safely attempted. And anyhow the pass does not lead into Poonch, but only into another cirque of peaks. To climb Hadbal would have made a dignified conclusion to the tour, but I had no time, and turned back when about on the 13,500 contour line. I was rewarded by a delightful run, without any difficulty, powder snow on the N. slopes, and spring snow elsewhere. Even in the main nallah the sun had done its beneficent work on the wind-crust, and all was plain sailing, and fairly fast.

The weather now looked, for the first time, settled. I had hoped to climb Shin Mahinyu, if sure of the weather and my own phyical fitness. With the exception of one rest day, I had climbed over 4,000 daily, and could now do it without undue fatigue.

By keeping to A. Nallah, up to 12,000 feet, as suggested by Hunt, I would be confronted with a long traverse, keeping gently uphill until the last 2,000 feet. Starting at 7 a. m., even if I took eight hours for the climb, I should be on top at three, and back just before the sun left the slopes, on good spring snow freezing up again.

Tne night was beautiful, the morning fine, and, with a porter carrying my skis for the first 3,000 feet, I made good progress, and eventually climbed the peak, and returned safely.

But it was a Pyrrhic victory, as I shall explain, in which the "Snow Man" had the last laugh.

By 9 a. m. I had climbed 3,000 feet, dismissed my porter, and was setting out jauntily on the long traverse. A glance at the map will show the number of minor spurs that have to be crossed. In many cases, I had to lose a couple of hundred feet to avoid a tiresome detour. In many cases, too, the S. sides of the spurs were stripped of snow, and I had to take off skis and walk. Eventually I started uphill in earnest, and reached a col, S.E. of the peak, where my aneroid read 4,350 metres. The peak was hidden by steep convex slopes, and I had only caught one glimpse of it during the traverse, when I saw its preciptious N. face. I attacked the snow slope and emerged on what proved to be a false summit. Thence the ground dipped, and a ridge of rock and snow mounted to the real summit, steeply, for perhaps another 150 feet. There was a good parking place for skis and rucksack here, and a ten-minute scramble brought me to the top, by way of rock and scree. since the snow edge was all cornice. It was 10 minutes past 3, and the climb had taken 8 hours, 10 minutes. Aneroid read 4,670 metres.

The summit is impressive, Northward, one looks across a yawning chasm to the rugged peaks at the head of B. Nallah Beyond these, floating to the air above the Vale of Kashmir, hovered Nanga Parbat, for once stripped of her mantle of cloud, and reminding me of the fascinating shape of the Weisshorn. N.W. vast snowfields proclaimed perhaps the outskirts of the Karakoram, W. I could make out the vague outlines of the Frontier hills, and beyond Poonch's snowless ridges, plains and sky united in a blue haze. S. I looked along the Pir Panjal, over as extensive and as glorious country as can possibly await the first imprint of a ski. E., for the first time I saw Pir Panjal and true Himalaya meet, at the end of the Vale of Kashmir. But, although the day was beautiful, I could not afford to linger. I trotted down to my skis, ate a hasty lunch, and started down at twenty to four.

The first 2,000 feet was on difficult snow, but the going was fast, and, in a quarter of an hour, I started on the more or less level traverse. How level it was I had not realised. I had pictured myself sailing along without effort to the top of A. Nallah. Actually I was walking most of the time, and, in parts, climbing uphill, or taking off skis to walk round spurs of slippery rock. The sun left the steeper N.E. slopes, which earlier in the day were powder snow. Now they were almost unskiable crust. Near the top of A. Nallah, I took a bad toss, in an execrable bit of snow, fell on my head and splintered a ski, though not badly. I dared not look at my watch till I reached the top of A. Nallah. Then it was 6 o'clock. The steep part of the nallah was bad crust. For the first time in my life I put my pride in my pocket, shouldered my skis and walked down 1,500 feet, till the gradient was easy and the crust unbreakble. There I put them on again, and running straignt, and doing as few turns as possible, I was back in camp at 7 p. m., twelve hours since I started. I felt a "sadder and a wiser man", with the sharp edge of triumph over the "Snow Man" blunted by the vileness of the run.

My route up Shin Mahinyu would be admirable for a summer's walk. I see now a better way for the skier. I should not have climbed so high up A. Nallah, but, keeping lower, should have joined the route of Curteis, Dyce and Wyatt, near the head of the nallah which runs down to Pejan Pathri" Thus I should have avoided the worst of the traverses round the innumerable spurs, and should have been climbing continuously. But a better trip from Pandan pathri would be to follow up B. Nallah, and attack the great unnamed peak at its head, with ice-axe and crampons. This would give a wonderful run down, with a far more interesting bit of rock-climbing I commend it to those who may come this way again.

April 6th I lay long in bed, then, as it was a glorious day, I set out, without rucksack, and climbed 2,000 feet up C. Nallah (the Nagha Pathri branch). By sticking to steep N.W. slopes, I had a swift and delightful run back to camp on Telemark crust.

In the evening up B. Nallah, I climbed the great N. spur dividing B. and A., with one eye on the sun. As soon as the sun dipped behind the hills, I stopped climbing,took of my skins, and ran down for 2,300 feet on W. and N. slopes, which were just freezing.

That night, to my surprise, the weather went to the devil Rain fell all night. And it was still drizzling in the morning. I set out at a quarter to twelve determined to find the sun, or at least get beyond the drizzle; ate may lunch disconsolately under a fir-tree; plodded on in thick white mist; climbed desperately up a steep spur above A. Nallah and got to a point some 3,000 feet above camp, where a watery sun and a few flakes of snow greeted me. What a lovely run it might have been! The first thousand feet were skiable, steep slopes with sticky powder snow stuck to hard crust, then it became a question of wading home.

On the 8th I broke up camp, and took my rucksack, and a porter with bedding, across to Khilanmarg, to visit two other skiers, Hingston and Shepheard, who had been staying quite a long time at the hut. It was lovely, after ten days of unbroken black and white, to meet the soft colours of the first primulas, and the warm scent of viburnum bushes, fir-trees and the awakening earth.

I had enjoyed my tour, though I should have enjoyed it more with a companion. Solitary ski-ing has its own delights, but it is a nervous strain, and one has to allow a large margin of safety. I have had better ski-ing in April, as last year, during a wonderful fortnight in the Oberland Glaciers, but the fact that the weather, on the whole, was unkind to me at Pandanpathri does not prevent me from admitting that I have seldom skied in more noble surroundings; or in country more eminently skiable.

GENERAL INFORMATION ABOUT SKIING AT GULMARG.

ACCOMMODATION.

Nedou's Hotel, Gulmarg, opens for both Meetings. There is no other accommodation in Gulmarg open during the winter months with the exception of the Ski Club of India Hut at Killanmarg, details of which are given in another paragraph. It is some times possible to make private arrangements between meetings from Tanmarg.

It is essential to reserve accommodation in advance, as this is limited and application should be made to "Nedou's Hotel, Srinagar, Kashmir."

CLUB SUBSCRIPTION.

Annual subscription	...	Rs. 10 per member.
Children 12—18 years old	...	Rs. 5 per member.
Children under 12 years old	...	No subscription.

A futher charge of Rs. 10 is made for members attending the Meeting (married couple only Rs. 5 each member). If both meetings are attended only Rs. 5 is charged for the Spring Meeting. The Gulmarg subscription covers certain incidental expenses incurred by the Club in running the Meetings such as snow clearance, free tea at Killanmarg, free medical attendance at Gulmarg, allowing members into the Kashmir Nursing Home at subscribers rates, etc. etc.

Subscriptions can be paid in Gulmarg and can be collected either by Banker's Order or through the Hotel bill.

The annual subscription includes the cost of the Ski Club of India Annual, which is published during November.

TRANSPORT.

The Ski Club Agents in Rawalpindi are the Pindi Sports

Works, 25 Canning Road, Rawalpindi (adjoining Flashman's Hotel), and it is recommended that cars, or seats in cars or buses should be booked and reserved through them.

Motor Car Company Agents meet all trains arriving at Rawalpindi Railway Station during Meetings.

Riding ponies and coolies will be found waiting at Tangmarg for the 1½ hours ride or walk up the hill to Gulmarg. Distance 4 miles and a climb of 2.000 ft.

EQUIPMENT.

Bring your own skis, sticks, and skins as there is a definite shortage of ski equipment due to the war.

Skis, sticks and skins can be hired by the day, week or for the Meeting from the Ski Shop, which is maintained at Nedou's Hotel, Gulmarg, by Messrs. Pestonjee of Srinagar, or from the Pindi Sports Works, 25 Canning Road, Rawalpindi, and Messrs. Gander & Co., The Mall, Rawalpindi. Owing to the present shortage of ski equipment it is most essential to reserve skis before coming to Gulmarg from one of these three concerns.

RACES.

All members are classified by the Committee as Club Alpha, Alpha, Beta or Novices. The Open races, Straight and Slalom, Championship of India, Beta's Novices, Ladies and Children's races are all run off during the Christmas Meeting.

INSTRUCTION.

The Christmas Meeting caters largely for beginners and experienced ski runners are detailed daily to teach novices on the beginners slopes below the Hotel.

KILLANMARG HUT.

The Hut is available for members only during December—

April. The charge is Re. 1 per head per night. Rent should be entered in the Rent Book kept in the hut and paid to Nedou's Hotel, Srinagar. If rent is paid to the chowkidar, intimation may kindly be sent to the Honorary Secretary. Arrangements for use of the Hut should be made through Messrs. Pestonjee & Co., the Bund, Srinagar, or the Manager, Skinner's Agency, The Bund, Srinagar. At least a week's notice is necessary to enable word to be sent to the chowkidar to have a Hut opened. Cutlery, crockery, lamps and cooking utensils are provided. Those occupying the Hut must bring food, bedding, oil for lamps and some one to cook. During meetings, the Hut may only be slept in by parties undertaking long tours, as a half-way house.

The smallest party allowed is two—a large party is preferable both from the point of view of finance and accidents.

A riding track (ponicular) is cut in the snow from the hotel to the Killanmarg Hut during the Christmas and Spring Meetings enabling members to ride up to the Hut and make use of the runs that are cleared through the woods.

CORRESPONDENCE.

A Post and Telegraph Office is opened at the Hotel during both Meetings.

Address :—Nedou's Hotel, Gulmarg, Kashmir.

Telegrams —Nedous, Gulmarg.

THE JOURNEY.

Total distance Rawalpindi to Tangmarg 202 miles. Walk or ride from Tangmarg to Gulmarg and Nedou's Hotel takes 1 1/2 hours being a distance of 4 miles and a climb of 2,000 ft.

The Banihal route via Jammu is not recommenden as it is frequently blocked by snow for long periods.

MISCELLANEOUS.

The Club Bankers are :—
Messers Grindlay & Co., Peshawar Cantonment.

The Club's Agents in Rawalpindi are :—
The Pindi Sports Works, 25 Canning Road, Rawalpindi.

The Club's Agents in Kashmir are :—
Messrs. Pestonjee & Co., The Bund, Srinager.

Major K. C. Hadow, M. C., Srinager, is the Club's Representative in Kashmir and will at at all times be ready to give help and advice.

The address of the Honorary Treasurer is :—
Captain W. B. Bakewell, United Service Club, Calcutta.

Any further information required can be obtained from :—
The Honorary Secretary, Ski Club of India,
c/o G. P. O. Rawalpindi, or c/o Messrs. Pindi Sports Works, Rawalpindi.

The Club's Ski meets, lasting for about 3 weeks, start on or about the 20th December and the 23rd March respectively.