FISH

Another source of food is the rivers which wind and penetrate everywhere. Every river, creek and even small temporary stream, unless interrupted by high, unsurmountable falls of a sheer, perpendicular drop of from fifty to five hundred feet, literally teem with fish, both in actual quantity and number of species. Along the Highlands between Brazil and Venezuela, which culminates in Mt Roraima, close on 9,000 feet high and the scene of Conan Doyle's "Lost World", only a few small fish are found in the creeks in the district, as falls with a sheer drop of as much as eight hundred feet or more (Kaieteuk Fall) interrupt the passage upwards of the strongest fish. Such fish, by no means common and confined to some two or three species are probably the survivors of some earlier geological age, before these mountains, either sandstone or conglomerate, were raised above the level of the sea. The vast Amazon Forest however has a general elevation of little more than six hundred feet and though practically every river abounds in falls and rapids, very trying and even dangerous to the passage of man in any kind of boat, these seldom prevent the free ascent of large numbers of fish at certain seasons. The upward migration sets in with the first rise of the rivers at the commencement of the annual rainy season. As the rivers begin to swell, countless millions in the deep pools and enormous estuaries respond to the annual urge for reproduction, and begin moving up stream towards the spawning grounds, it may be hundreds of miles up

stream. Even the tiny streams that for half the year are completely dry and are generally a mere chain of pools probably half a mile apart, swarm with fish during the few weeks that they are in flood. After spawning, many of these fish descend again, especially the larger species, but many excellent fish running to some three to eight pounds either get trapped by the receding floods, or they find a deep hole which promises a decent home until the next spawning season arrives. It is almost inconceivable the number of good edible fish that can be caught in these holes. I have taken with a cast net from one small pool about thirty feet in diameter and some twelve feet deep, about fifty pounds weight in fish per week for seven to ten weeks in succession.

The Indian has no cast nets of course, but there are plenty of trees in the vicinity and in most cases a supply of poisonous lianes, with the latter of which he can kill everything in the pool,in one morning. If, however, the Indian comes across a pool unexpectedly with no nearby source of poison, he will cut some large branches and begin dragging them backwards and forwards across the pool. Such a pool must not be too extensive and not deeper than about waist high. The object is to stir up and agitate the deep layer of mud and sediment at the bottom of such pool, and the fishes soon find difficulty in breathing when they move out to the shallow edges, where the water is carefully left untroubled; or they rise to the surface where less sediment is held in suspension. The women and children

are posted at strategic points, armed with machettes or wooden clubs, and as a fish rises gasping, he is promptly clubbed and secured. In my early days amongst the Wapichanna, I can remember filling the pot on many occasions by such means.

With few exceptions, most of the tribes are passionately fond of fish and this longing, together with different local conditions, has led to differences in the methods and technique of living. There is nothing more irritating and yet amusing when travelling in the high mountain ranges, where fish are rarely found, than to be with a bunch of Arecuna or Patamona Indians, when they happen to sight a small fish in some of the shallows of their crystal clear streams. Irrespective of how valuable or fragile their loads may be, down they go anyhow on the steep hill sides and away go the carriers after the fish. I have a vivid recollection of the lurid language of a surveyor friend of mine, who, on such an occasion, saw his chronometer go bump, bump, bumping down hill until it fetched up against a boulder painfully close to the creek. The man who secures the small fish is a sort of hero for the day, and it is amusing to watch them later in camp, when after roasting the fingerling (about the average size) they share it out in tiny bits to their pals and friends, for the whole fish at best is rarely more than a couple of mouthfuls.

The Macussi tribe have enormous groves of poisonous lianes at command, and they poison fish on a scale quite beyond the capacity of any other tribe. I have repeatedly seen them

at work on a lake or pool, fully an acre in extent, and the resultant catch would in favourable circumstances run into a ton or two of fish to be divided amongst the couple of hundred families taking part. Practically all these fish are edible although much depends on taste and necessity, as many are full of annoying side bones, or protected with a covering of armour-like scales, but nearly every tribe has some peculiar fish which only dire necessity will make them touch. The gigantic Arapaima gigas, running frequently to 300 or 500 lbs in weight and considered by other tribes and Brazilians in particular as a remarkably succulent fish, is the Macussi shibboleth. No self respecting Macussi, man or woman, would eat this fish due to a belief that a number of bright red scales, about the size of pennies, which are found along the lower part of the body between the vent and the extreme tail bear some obscure relation to the customary periods of woman and portend some vague danger to those who eat it, either immediately, or definitely at the next union of the sexes. The same idea and principle is found amongst the Wapichanna, but not in the case of the Arapaima, which they hunt and eat with relish. Their bete noir is one of many varieties of perai or peranha, as numerous in every river and all of which have tremendously powerful jaws and dangerous rows of sharp, shark-like, cutting teeth, and for which every person holds a great respect on account of the amputation of toes, fingers and other mutilations when swimming or bathing in the creeks. I had a Macussi boy working with me, who, while bathing when a small boy, had his entire genital organs bitten off. The

peranha in question is one known as Tabuch which, around the spawning season especially, is a very bright scarlet hue along the belly and lower sides. This indicates that the genital organs of either sex, but especially the women may be cut up if its flesh is eaten, and only a few of the bravest, foolhardy, unmarried men dare eat the fish, even when hard pressed for food.

The Wapichanna country, surrounded by, and with equal access to a similar enormous extent of the same type of forest as the Macussi, possesses very few of the poisonous haiarri lianos, for no very apparent reason except that the tribe are (except the Taruma), the greatest fish eaters I know, and it is probable that they exhausted the supplies long ago in satisfying their longings. On this account the Wapichanna have developed a range of other minor poisons, far beyond that met with in any other tribe and also greater numbers of mechanical devices, traps, and other means of procuring supplies of fish. During the heavy rainy season, when every swamp and gutter is overflowing, the hook and line and the bow and arrow are the principal weapons of the fisherman of every tribe, and in the making of their iron tipped arrows, the Wapichanna surpass all the tribes in variety, design and beauty of finish.

As the water recedes with the close of the rains, such fish as remain become shy and rarely take the hook unless during the night, so other means have to come into use. They weave a fine mesh net which is fitted up like an ordinary fisher's net (No. 1) with which they can scoop up small fish in numbers

at certain seasons, generally when congregating below certain falls while waiting for favourable water to pass. They weave a cone shaped, circular trap of straight saplings and lianos, (No. 2) which they can plant down in some shallow, muddy pool, and seize any fish that may be inside by inserting the hand through the open top. They also weave a tapering trap (No. 3) with long split reeds or mid rib of palms. This is used when the water flowing down the creek is reduced to a very small proportions. The trap is invariably placed in some tiny, suitable fall, with a foot or so of a drop and where the water is converged into a single channel, with the open and upwards and so arranged that all the water flows into the mouth, when it is secured in position by stones and lianos. Numbers of small fish descend from pool to pool during the night, so the traps are set before sundown and are left in position all night. The traps are lifted at early dawn and the trapper may find one, three of thirty fish for his first meal of the day.

Another common form of trap in use was No. 4. A ring some six inches diameter is woven from stiff lianos and finished in such a way that the free ends of the lianos meet in a loose cone, A. Around this a basket is woven from split reeds as per B or C. Some bait is put inside and the trap anchored out in a pool all night. The fish attracted by the bait inside would nose around until they found the entrance; the stiff lianos would yield sufficiently to allow the fish to pass inside, but would not allow it to get out again.

Spring rods for fishing were common amongst the Wapichanna for night fishing after the waters had receded and left the banks of creek or lake well exposed (No. 5). Before setting out, the Indian would take a piece of a tough twig, about the thickness of a pencil and one inch or so long. This he would fit with a piece of string at each end as A. which would be secured at the proper place on his fishing line. Next he would cut a stouter sapling with a side branch which was trimmed as B. and to the straight end of which he would also fix a piece of string. He would also cut a stout straight piece of sapling about a foot long, and a long tapering supple pole to serve as a rod, to the point of which he attached his line and hook. Arriving at some suitable place for fishing, he would drive his fishing rod deep into the soil of the bank, close to the water, he would securely drive in the wooden peg to which he would tie B. after which all he had to do was to bait his hook and connect A. and B. properly. The fish seized the bait, released A. from B. when the rod would jerk back straight and the fish was caught. The Indian may set as many spring rods as he has hooks and as a rule they are set at dusk to catch the larger species of fish only. I have seen a fisher bring in two or three fish in the morning weighing anything up to 20 - 30 lbs each.

In fishing with a long line at night the Wapichanna adept a device which allows them to sleep comfortably in their hammocks. They cut a good wild pineapple plant or some allied species with

rough jagged edged leaves. They make the plant secure with soil or rocks a few feet from their hammocks, throw the long line out just far enough, so as to leave a couple of fathoms lying coiled at their feet. They push the slightly tightened line down snugly amongst the ragged leaves of the plant and go to sleep. As the fish takes the bait and rushes off, the spare coils of line make a fairly loud peculiar noise in passing through the leaves, at which the Indian promptly springs up and seizes the line to play his fish.

Some of the Indians tie the line to the hammocks and the tug of the fish escaping with the bait awakens the sleeper, but in a riverside camp, someone is often moving around and every bump in the dark against the fisher's hammock is a false alarm, as the noise making bush is preferred. Some Indians tie the line to their bodies, but this is dangerous, owing to the size of many of the hugh powerful fish in these rivers. A tale is told by the Wapichanna, vouched by my river captain, who was there at the accident. Some half dozen Wapichanna Indians were travelling up river in a boat and had spent the whole day laboriously hauling their boat and cargo through a long series of very trying rapids. Night found them camping at the side of a pool famous for large fish, but they were too exhausted to do any fishing as the chances were they would sleep too soundly to hear the noise bush warning and would most likely be minus a hook and line by morning. However one man volunteered to fish. He would sleep close to the water, so as not to disturb

anyone and would secure the end of the line to his body, to be certain of being awakened if a fish took the bait. He coiled the end of the line round his neck and all went to sleep. They woke next morning to find the man's hammock empty and with no sign of either the man or the line. They hunted unsuccessfully everywhere for a whole day and reluctantly had to conclude some huge fish had taken the bait and had dragged the unhappy man into the river, where he was drowned.

I once had to render assistance to a man who was the victim of a serious fishing accident. He was fishing at night, and had attached the line by a running knot round the palm of his left hand, while doing some dish washing by the side of the creek. Suddenly there was a violent tug on the line which tightened the slip knot round the man's hand and jerked him off his feet. He was within an ace of being dragged into the creek when, yelling for help, he managed to secure a firm hold on a tree with his free hand. More than twenty men were in camp a few feet from the scene and although everyone jumped promptly to assist, before they could reach the man, the running noose had bitten into the flesh and cut through the joints at the root of all four fingers. Fortunately it was not too far from civilization, and twenty four hours later the man was in the care of a dispenser at a mine, and his life was saved.

The Wapichanna and Macussi use remarkably short bows by comparison, and I have often thought their love of fish has been the cause. They have long known the use of guns, the old muzzle loaded by preference, which is more suitable for shooting game in

the forests. This left the bow and arrow almost solely for fish shooting, which is generally done from a canoe, the rocks, the open banks, or the branches overhanging the different streams and pools. The distance from the hunter to his prey is seldom more than a few feet, consequently their bows have become much shorter and less powerful than those of the forest tribes, who, not yet supplied with guns, have to rely on their bows in the forest for game, and must have a bow strong enough to drive an arrow to the top of any tree - their longest shot - where birds and monkeys generally feed.

The Taruma live along the banks of a large river which at no time ever goes dry and which carries amazing numbers of fish everywhere and as the tribe lives largely on fish, they have developed their own technique in fishing. They are equally as expert as any other tribe with the bow and arrow, but depend far more on the hook and line to secure supplies. They have developed lures to a wonderful extent using the leaves, flowers or fruit of countless bushes and trees. A Taruma will ask you what kind of fish you would care to eat. He will go off with a particular bait for that fish and by noon will return with a long string of the fish asked for and not a single one of any other variety. No other Indians of my acquaintance are such expert fishers, and as all such fishing must be done from a corial they are the most expert canoeists I know of. Each fisher goes out alone and may paddle and drift for a kile or two sitting perched up in the bow, his rod in the one hand, a paddle in the other and never for one moment is the corial allowed to sway more than a few inches from the true line of direction.

It sounds easy, but actually is exceedingly difficult and try as I liked, I never could acquire the knack nor could my Wapichanna carriers when they tried it.

The Waiwai eat fish fairly commonly, but do not have the passionate longing displayed by most tribes. I have staged a poisoning match with them, but they seemed quite indifferent to its success or otherwise and didn't even offer to collect many of the small varieties of fish. They only do a little hook and line fishing for the large Haimara which every tribe loves. Probably this indifference is due to the lie of their territory, a cul-de-sac where their large river enters a high mountain range and into which hordes of game unwittingly drift from the enormous plains lower down country, and of which there is generally a supply ample for all needs.

The Mapidien tribe eat fish but are almost as indifferent as the Waiwai. The Thickena tribe who live a long way East of the Waiwai are again passionately fond of fish and as they have practically no trade with the outside world, although they know what hooks are, they very rarely possess one. They,have, however, developed their own method of fishing from natural sources within their reach. They make hooks from various bones of game, and also from thorns and slivers of wood, but by far their most successful method is by means of a spring rod (No. 6). When the creeks are fairly dry, they fix either by driving into the river bottom or anchoring with stones at various selected spots, two sticks in the form of a cross, A. At home they have a number of long woven

baskets, B, and as soon as the river shows a rise, and a possibility of some of these cross sticks being completely submerged, they set out to place their spring rods. The rod is driven safely into the bank as with the Wapichanna, but three strings are attached to its end instead of one. The basket mouth facing down stream is now carefully balanced under the liano tie of the cross sticks. Across the inside of the basket near the closed end a piece of bait is attached to an easily broken young liano, and the liano ends passed outside to be tied in a knot above, D. The spring rod is now pulled down, and the two principal lines are attached to each side of the open mouth of the basket; the other is tied to the liano carrying the bait, E, and the trap is completed. With the rising river, fish begin moving up stream, scent the bait, and enter the open mouth of the basket, F. It seizes the bait, snaps the thin brittle vine which immediately releases the spring rod, and the basket is jerked up in the air and the fish imprisoned, G. As many as a dozen of these spring baskets may be set, and I have seen a 30 lbs Haimara caught in one which was so heavy that the spring rod could only keep the mouth of the basket level with the water, but the fish, of course, was helplessly wedged in the bottom of the basket and escape was impossible. For small fish the Chikena used a small bark box (No. 7) by using two strips of bark about two feet and two feet six inches long respectively. Laid at right angles, A., the four ends are bent up on each other to make a box, B. The long projecting end of the longer

bark has a partial cut made but not so deep as to injure the cambium, which acts as a hinge. The trap is baited and set with a small spring rod in a swamp. The fish enters, seizes the bait, and the projecting flap is closed by the spring rod and the fish secured.

The Trombetas abounds with great numbers of Electric Eels, and in a visit to the Kumayena tribe, I found they were exceedingly fond of this fish as food. They went out in their corials and would drift along the river, bow and arrow ready for the appearance of an eel, which has the habit of coming to the surface periodically for air. These eels rarely rise to the surface in the open, but take advantage of any floating leaf so as to rise underneath and be less visible to enemies. I have seen the Indians release a few large dead leaves on the surface of a good spot and quietly follow them till an eel popped up from below, when he was promptly transfixed by an arrow. When shot, the eel was lifted by the arrow into the boat and clubbed to death. I have seen a boat of Indians shoot a dozen in an hour, and what surprised me was the casual way the hunters handled their catch. These eels can give a definitely painful, if not dangerous shock, at all times, yet the Kumayena handled them as if they were so many potatoes, without fear and as far as I could see, without inconvenience of pain.

Most people jump at the sudden sharp shock of electricity such as when you touch the sparking plug of an internal combustion engine, yet I had an Indian who could hold a sparking plug till the cows come home without even feeling it as he repeatedly assured me,

unless that it felt hot to the touch. We tried all manner of tests on that boy even when he was unaware of what we were doing, and I never once saw him bat an eyelid. I am quite certain that that boy did not feel anything and the Kumayena may be the same with electric eels although all other Indians of my acquaintance are thoroughly afraid of them and give them a wide berth on every occasion.

Fish, however numerous, can not be relied on for a steady supply at short notice for the varying needs of any family or tribe. There are times when they have a surfeit and numbers go bad and putrid through lack of facilities and means for curing, but there are times when for weeks together during the dry season, no fish can be caught except at an almost prohibitive cost of time and patience.

Observation 1

The teachings and mode of life of the Indians of the forests bring all their senses to a high pitch of observation and receptivity. Of course there are varying degrees, running from poor, through fair to good in different tribes, and individuals, just as amongst every nation, but the acuteness of their senses of even a low standard make the average white man feel ignorant in their keenness and variety. The mind also seems to become of almost photographic sharpness in its reception and retention of facts presented through the various senses.

The eye naturally is the most important organ of observation in that it deals with objects up to the limit of vision whether in motion or otherwise. The ear comes next and the other senses a good way behind in conveying impressions outside the body to the mind. Taste, smell and feeling play quite a part in the Indian's habits and mode of life - far more so than in our case - but small by comparison to the eye or ear, yet at times they do convey impression that astonish one. In a camp once, I noticed an old Indian standing with his eyes closed, sniffing repeatedly. "What on earth is wrong with you?" I asked. "There is a snake somewhere", he replied, "but the air keeps shifting and I cannot locate the direction". He closed his eyes in case vision might bias his mind and so left smell to locate the snake. Soon a decided breeze gave him the true direction and sure enough a snake was found coiled just beyond the edge of the camp. I could not detect any peculiar smell, but I

found the snake bulging badly in the centre from a recent feed; in this case three good sized frogs which had been swallowed, and I think the decomposing meat in the stomach may have caused some peculiar odour which attracted the man's attention, backed by some previous experience perhaps of a similar nature.

Most of the tribes I know frequently fill in a leisure hour with tests of their powers of observation and knowledge. These are often very difficult yet most amusing and instructive. I have repeatedly witnessed these when I have been delayed in a camp, though generally when on trek, at such a spot as had been used by previous travelling parties as a camp. The ideal spot for one of these tests is a recognised camp on some long route, where every party passing must spend a night, such as a point midway between two villages some 30 to 40 miles apart; a distance too far for making it in one day unless under a forced march, but an easy journey when done in two days.

We arrive in the early afternoon, some 6 to 10 men as carriers of an average of 18-20 years, and a couple of elderly men of 40 to 60 years old. The boys are not fatigued; we have shot plenty of game along the route; it is an ideal evening, and everyone is brimming over with good spirits and pep. Round any old camp there is much litter left by previous campers:- bones, feathers, tufts of hair from the various game shot and cooked there, and scales of fish, pretty much as you would find paper and orange peel round any camp at home. A man stoops down, picking up some

bit of refuse - a bone or a feather - and the test or game is on. "What is this?", shouts the man who has picked up the bone and almost at once every Indian calls the name of the beast or bird it comes from. They must also name the correct part of the body of which it forms part. If a feather is held up, they must name the bird and give the actual part; wing, tail, back or breast. A fish bone or a scale may be shown next, although these are often so tiny and so delicate in size, structure and variation, that they must beppassed round for closer inspection. Each Indian receives such bone or scale, turns it round and over, then silently passes it on till all have seen it, when the fish will be correctly named by all.

I once made a collection of fishes for Harvard University in which I was confined to those species of not more than eight inches in length. I sent forward no less than 150 species, but there are scores of other fish from that size to those some seven feet long. Practically every variety of fish is eaten. Preference is given to certain varieties according to taste, freedom from small bones or quality of meat, but, hunger being good sauce, there are times when almost every fish I know is eaten. It shows no mean knowledge of anatomy to distinguish practically every fish by a scale, a side bone or a vertebra. Each fish has its own peculiar shape of bone or scale, a slight difference in size, texture, or the corrugations round the exposed part of the scale, yet they will generally name it after as cursory a glance as I would require to name the average printed word of two syllables. Add to that, that they know the bones of every bird and animal, can name any local

bird by a single feather (and a recent authority computes not less than 3,000 species in the Amazon forests) or any animal by a single hair, and one must admit that the standard of intelligence and observation is very high.

The ultimate end in these games is to find something that baffles every one to say what it is. On finding something strange, the onlookers may hazard guesses but the fortunate finder gives no response until two or more have definitely given the correct name. If the article cannot be correctly placed, the finder is called upon to name and describe what it is derived from. Every man must then see and examine it carefully to decide if such description is true, and woe betide the finder of such strange article should he have made a mistake, as he will be laughed at and ridiculed for weeks and months afterwards. He may even be called by name after the article all his life following such a mistake.

Indians class all impressions into three categories; the good being something useful or beneficial in life; the bad being that which may cause harm or pain, and the indifferent, this generally having no very active bearing in any way on life, yet it is really remarkable how much they know of many things that have little effect in either way on daily life. I was once asked by a friend to make a small collection of any migratory butterflies I might come across and to collect all possible facts about their various cycles of life and history, as they were coming into prominence in science as the friend or foe of economic botany. I was rather doubtful of what data I might secure as butterflies can

scarcely be said to have either much scientific interest or economic importance to the Indians. I found most of my men, however, quite conversant with the complete life cycle of all the various migratory butterflies met with over a period of six months. They knew the special variety of tree each butterfly laid its eggs on. They showed me trees denuded of foliage, the work of the caterpillars which subsequently became butterflies. They knew the form of chrysalis and where to look for it. They assured me a certain variety carried its own particular variety of egg and larvae. Subsequently, careful observations by scientists have proved the Indians were right in every case.

The Powis - the largest and most prized feathered game in the forests - has an invariable jet black plumage, with the exception of a few feathers on the under part of the body and part of the crest in the case of the females, which are white. I was once travelling up a very remote river many, many miles from anywhere - even an Indian village - when we flushed a covey of Muscovi ducks. The party consisted of myself and four Indians in two woodskin canoes. We had met no game for the morning and as the sun was well nigh overhead it was imperative that we either shoot something or go hungry. The ducks alighted some quarter of a mile ahead on some exposed rocks and it was quite impossible to stalk them in our woodskin without again disturbing them, so I jumped ashore with my gun to steal through the forest in the hope of getting a shot at them. I had gone about half the distance when I ran into a flock of powis and, as a bird in the hand is better than a few wily

old ducks on a rock, I got in a right and left and bagged two. On picking them up I found, to my surprise, that one of the birds had two completely white wings, something I had neither seen myself nor even heard of. I was close to the river, so scrambling down the bank I signalled my men to come along and pick me up again.

It flashed through my mind that here was a good chance to test the knowledge of my boys, so I pulled out a couple of the white wing feathers, broke off a few twigs and branches to cover up the birds carefully so as to leave no visible clue or indication of what I had shot. As the woodskins came closer the men shouted "What have you shot?", and my only answer was to wave the white feathers. At once the men knew I was putting up one of their tests and began giving me every bird they knew that had white feathers. My silence showed they were wrong and as they pulled alongside, they asked to handle and inspect the feathers. The first man looked at it carefully, hitting it a flick across a forefinger and with an, "I know", passed it on. Each boy did the same till all had handled the feathers when they all said "Powis"! Not one of them had ever seen a powis with white wings, yet they knew by the texture and strength of the barb of the feather that it could only be a powis, however novel and unknown, which decision, prompt on the spot, showed both keen observation and no small degree of reasoning. All the white feathers were carefully collected and treasured. When we got back to the tribe most of the feathers were passed on to special friends and for several moons afterwards, I saw them stuck ostentatiously in

the hat or the hair of the proud possessor.

I was in the habit of sending down every year to the nearest town on the coast a number of boats, manned by the Aboriginal Indians of the Wapichanna tribe. In these I despatched all the saleable produce I had collected in the district and they brought back such supplies as I required. The men had to spend a few days in town waiting, whilst my agent purchased such goods as I had ordered. They also drew their pay in cash and purchased whatever they fancied for themselves. Although well fed and housed when in town, some of them discovered a cheap restaurant where some highly seasoned stew seemed to tickle their palate, and it became the regular routine of every party sent down to have at least their mid-day meal there. On their return up country it was most amusing to hear them smacking their lips or tongue, a sure sign of gastronomical pleasure and telling the less fortunate of the delights of "Chopsuey" as they called the stew. This clucking sound by the tongue is made by turning the tongue against the roof of the mouth and sucking to create a vacuum. The jaws and mouth are opened quickly and a loud "pop" results, such as is made by a tight cork forcibly and quickly withdrawn from a bottle. The sound is generally amongst all the tribes and is used when any taste is peculiarly pleasing at a meal, when the peppers, which flavour almost every dish, are particularly hot, or as an indication that the person eating is completely satisfied.

On one occasion I sent down some 30 men, the majority

being young men making the trip to the coast for the first time, under the charge of a couple of trained steersmen and a few elderly men, who, knowing the ropes, would look after them carefully. The first day after arriving in town they must all, of course, march off for breakfast on this marvellous stew. They were soon all busy wolfing it down when a boy pulled out a bone. One glance was enough ! He gave one yell, "Aramerok" (Dog), flung the bone on the ground and tore out of the place, followed by every man of the party. I had no means of ever finding out if some part of a dog had actually been served up to them, but I do know that from that day onward no Indian could be tempted to go near any city restaurant that specialised in stews or meat of any kind. For years afterwards it was a standing joke in the tribe if anyone lifted a bone from the communal pot and looked at it a bit carefully, for someone to shout "Chopsuey" whereupon every one present would go into paroxysms of laughter.

Another favourite test when on the march is to see who can first locate some plant, bird or insect, especially when travelling by river. Paddling day after day becomes purely mechanical, thus leaving their minds completely free, for their half dozen senses to function and their tongues to wag - the latter often extremely exasperating as it generally impedes progress (the more the tongue wags, the less the paddle moves). All Indians are fond of Iguana Lizards as food. At certain seasons, these lizards grow very fat, and during the rainy season or immediately after are considered a great delicacy and are eagerly hunted. During the dry season you

can look in vain for an iguana. They are away somewhere in the tops of the high forests attending to the duties of lizard life and are seldom found, but directly the rainy season sets in they come out in numbers along the hundred foot screen of greenery that lines both banks of most rivers. The forest bordering a river is generally sheer from the high top to the water, but a dense growth of creepers and lianes find root on the exposed bank and these climb upwards, seizing tree trunks, branches and twigs in the struggle for support and a place in the sun.

These vines form a dense, frequently impenetrable screen right from the water's edge to the top of the forest, probably 100 or more feet in height. Every vine leaf is set at right angles to the plane of the forest to catch all the light and air possible, and so dense and close are they to each other that it forms one continuous blanket of green vegetation, through which, here and there, only at a gap you may catch a peep of a giant trunk or a spot of the comparative black of empty space in the forest behind. It is on this blanket of greenery that the iguana delights to live during the rainy season. Paddling slowly up stream in an open boat, the men love to get up a test as to who can spot the first iguana. They will do this for an hour or two - all day if you'd allow them - and it is almost uncanny how they will pick one out. The iguana has the power of taking on the exact colour of his green surroundings, yet an Indian will spot one, perhaps the head, tail, or even the fringe of spikes that decorate the back - the only visible part just poking through the leafy screen 100 or more

feet above the water. To European eyes it is almost impossible to distinguish the iguana even when pointed out with a rigid finger and especially so if only a small part - say the head - is exposed to view.

Of course every iguana seen must be shot, and if killed they sink almost like a stone on touching the water, but can swim like a fish if a spark of life remains. As the forest bank almost always overhangs the river, the iguana when shot falls in the water. There is quite an art in securing the shot iguana as there is the drift of the running water to calculate when he does fall, and to know just where he will drop. The iguana is generally very shy and wary and often dives at the least noise or movement so after one has been located, the boat has to be cautiously and silently manoeuvred into position for a shot.

When the boat is in position, a naked Indian slips care - fully over the side of the boat making no noise and as few ripples as possible. He sinks silently out of sight and swims beneath the surface of the water until he thinks he is directly under the iguana. His head gently appears, when, if necessary, a swift quiet stroke or two places him in the required position. He gives the signal and the arrow or gun is discharged. Down comes the iguana, often enough, right into the hands of the waiting Indian, but even with a gun, iguana are difficult to kill outright and may have sufficient life left to spring outward or sideways, when they may drop several yards away, or a strong thread like vine may deflect the descent and thus they often fall where least expected. Like a flash the Indian notes

any such deflection from the perpendicular and is off to meet it, but often the iguana hits the water with his pursuer some distance away. The Indian has noticed the angle at which the lizard strikes the water, as also the direction and strength of the current, and he dives, to swim the quicker, open eyed, below the surface. There is a tense silence, then the water breaks, probably yards away from where the iguana fell, and four times out of five the Indian has it inhis hand. One has to admit this is a feat by no means easy of accomplishment as many an outsider has proved through ignominous failure.

In going upstream, the boat naturally hugs the river banks as much as possible in order to evade the stiff current as it means less labour in breasting the stream. There is a little white cap bird who always seems to live along the tangle of branches a foot or two above water level. When paddling only a few feet at most from these bushes you often put up one or two of these birds who are seldom shy, and they keep hopping from branch to branch only a few yards away. They are rather jokingly called "Hiaiman" (Medicine Man) from a none too serious belief that they can tell what is going on around the homes of the men probably many days journey distant and that they answer any questions put to them - silence, a single little "tweet", or "tweet tweet" being the answer. One of the men asks a question, but gets no answer; another asks a different question, "tweet" comes the reply meaning "Yes" to the question. A double "tweet" is more definite. The questions at first generally refer to affairs of the home and wel-

fare of relatives, but soon some one asks a ribald question. "Have you seen the young wife of Deer's Ear?" (one of the boat-men) "Tweet" comes the answer meaning "Yes". "And is she making love to all the youths of the village during his absence?" "Tweet, tweet, tweet" is the reply and everyone is convulsed with laughter.

All Indians believe that once men could hold intelligent conversations with all the birds, beasts and insects of the forest. The older men say this ability is still enjoyed by a few, but that most people have lost the gift through forgetfulness and a looser habit of living. There is another bird, the common Bittern, which from the variegated colours of its breast is called the Leopard or Tiger Bird. This bird has a myth attached to it and is supposed to answer questions, although less on human affairs as on its own. The questions are generally such as :- "Nephew, shall we go hunting wild hogs ?" "Shall we go and burn our field to-day ?" "Shall we stage a dance and be merry ?" To these the bird may answer nothing, which means disdain of the question, or it may give its deep long drawn "Ha-a-a" in reply. The men then hand out satirical remarks about how untruthful the answers are, since everyone knows that the bittern can only spear fish with its bill and is no use at any of the work proposed. Then someone says "Brother-in-law" (or any term of relationship) "let us go fishing". Periodically the bird gives quite a different call: a rapid "Ha-ha-ha" instead of "Ha-a-a", and if the questioner gets this as his reply he is in great glee as showing his perspicacity and ability to handle successfully

such a strange relation as the bittern.

Indians travelling through new and unknown territory note every feature on the way and memorise these sufficiently so that if they pass that way again even years later they can more or less follow the same route even if the old trail has completely disappeared. If the journey is made by river, each bend, island or rock is memorised on the route. The Wapichanna tribe are the great travellers of my acquaintance, and they, or the Atarods whose territory they eventually took over, had, since time immemorial been in the habit of going down their river to trade with friendly tribes or people on the coast. The ordinary wood-skin or even dug-out canoes were too small and frail for their purpose, so they evolved a very suitable craft by widening a dug-out by pulling the two sides wider apart after heating with fire. Then they hewed out long, broad thick planks that would reach completely from stem to stern, making them fast by means of lianos passed through holes made by the usual method of fire directed by the breath through a long thin vegetable tube. In later days iron nails came into request and were eagerly purchased. They had various gums which set almost like stone, and plenty of string bark, hence it was an easy matter to caulk up any leaks with bark, and pitch them over with gum. This method gave them a safe serviceable craft, large enough to carry 6-10 men with full supplies for a two months' journey, their baggage, and such goods as they had to exchange in trade.

Their river was beset with countless difficulties on the 300 or more miles to the coast. There were many different channels

that had to be followed according to the height of the river; there were dozens of nasty dangerous rapids and falls, hundreds of islands, and innumerable rocks stretching over miles and miles, to strike one of which might mean disaster to the expedition. An intelligent Indian after two trips as a paddler up and down the river would know the route completely, when he would be promoted to bowman (assistant steersman) and after a couple more trips in this capacity he could be made steersman or captain when he would have full control of the boat and be solely responsible for the safety of the men, goods and boat under his control.

The Aboriginal Indian makes by far the best captain or steersman on these dangerous rivers, of any race I know. Not only has he memorised every rock and danger point, but he seems to acquire an uncanny knowledge of the various currents and force of the rushing river and how best to take full advantage of them. The Indian is always cool and collected and never loses his head in the proximity of danger. He will shoot a dangerous fall, if at all practicable, with an ease and a minimum of effort that no other race can attain. Standing on a tiny platform of a boat, probably some 35 feet long with two tons of cargo aboard, manned by 12 - 15 men with all their baggage and food for the long distance, he holds the top of a steering paddle in his left hand. This paddle is lashed somewhat loosely by rope to the side of the boat, the blade going down some four feet in the water, while the shank reaches about the shoulder level of the steersman. Just

before entering the top of a dangerous fall the captain invariably wets his feet and the place on which he stands, and the paddlers wet their hands. This gives the captain a better grip with his feet if called on suddenly to brace his full weight on the paddle, and the men can handle their paddles better with wet hands. Then he quietly gives his orders to the men on either side as paddlers and to the assistant steersman standing with another large, though loose, paddle in the bow of the boat. Then they swing into the fall; they skirt with a three inch margin of safety a horrible jagged rock; a slight turn of the wrist and the boat sweeps hither and thither in the welter of racing tumbling water, missing by inches rock after rock to strike which means a smashed boat, the total loss of all cargo, food and baggage. Ina moment or so they are clear of the fall and everybody is laughing.

I have run these dangerous falls scores of times and with a first class steersman it has always been a source of admiration and envy to see how effortless and easy appears the demeanour of the person in charge, a slip of a man rarely more than ten stone in weight on whose ability depends not only the safety of the boat and everything on board but the lives of the entire crew and passengers. I have repeatedly done the journey of more than 300 miles without shipping a drop of water or touching a rock on the whole journey. Over a period of 20 years I only lost one boat and rarely ever had to have any repairs effected. The boat lost was entirely due to carelessness in a minor fall a few miles

distant from my main station. On that occasion the captain who had purchased a wife from a tribe down river had asked and been given permission for her to go down river in the boat to join her own tribe, a short journey of about two days. The captain frankly admitted that his wife had spoken to him half way through the fall and that he had bent down to listen. This momentary distraction was his undoing as immediately they crashed broadside into a rock, the position of which he knew to an inch and with a wide clear channel at one side. In a second of course the boat was under the water and swept away by the fierce tumbling waves. Then it was every man for himself, and fortunately every person on board reached the bank without mishap and in safety. The boat, cargo, baggage, food and everything was a total loss; nothing being recovered. Apart from the loss to each of the crew of their clothing and gear my loss was something around fifteen hundred pounds (£1,500). This is one reason why I never allow any woman to travel with my men in a boat of mine.

All Indians seem to have a sixth sense: that of direction. No matter how you may twist and twine around on a river or through the forest, each man can at any moment point out the cardinal points of the compass, or in which direction the camp lies. All Indians have only two points in their compass, East and West - the rising and setting place of the sun ! From these two points it is easy for them to get a bearing of any degree they like on either side. The sun of course in the clear tropical skies can be used as a point to determine direction, but it is not the sun

they go by because on a dull, dark, sunless day or a starless night they can unhesitatingly point in the right direction every time. Times without number, I have gone out shooting in the forest with an Indian, frequently stepping off my boat into untrodden, unknown forest. A short distance after starti the man would stop to divest himself of clothes or superfluous ornaments, which he would hang on a low branch of a tree, to pick up and don on our return. Then we would proceed in a large circle, following the line of least resistance in the tangle of liane and sapling. We would make no marks in route, dodging under or round all obstacles, stalking silently along. Invariably the Indian would close the circle at the exact spot where he had left his belongings ! We would have been on the prowl for a couple of hours, traversing probably three miles of a circle, yet he would walk straight up to the point where we had started from.

An Indian never gets lost in the forests, at least I cannot remember a case. I have known a man who undertook to go vi some new route to a neighbouring village, mistake a particular creek as the one his objective was located on, but he would neve be at fault very long. I have had to make long journeys of inspection in the forests cutting to a compass line for days. All that was necessary was to show the leading linesman the directio and he would keep on quite straight with only slight deviations on either side, generally due to difficulties immediately in fro which he wished to avoid. I have had raw Indians cut a line fo
20 to 40

miles with no assistance, on a line pointed out by me. Later I would have to make a time and compass survey of the work and always found it true, when plotted out, in the direction given. In this I am speaking of the adult man, but the sense of direction is not so complete and certain in the youth in his early teens. Some of these youths often wished to accompany relatives on the journey by boat to the coast, and I have known a few of them who would get temporarily lost when hunting in the late afternoon after camp had been fixed, but they always found their way back eventually. A shell or horn is generally carried in each boat to give direction in such cases or a gun may be fired if they possess one. Boys who go astray are always subject to much ridicule. They learn the lesson and very rarely repeat the disgrace.

There is one very peculiar sound heard periodically over the greater part of the country lying between the Amazon River and Atlantic Ocean, an area comprising the whole of the three Guianas, Venezuela, and a large part of Brazil. This sound is well known, as practically every traveller who has had to make a lengthy stay in the forests has heard it and reported, and suggested possible causes. The sound is a sharp, short explosion very like the noise made by a heavy artillery gun fired some miles away. It is invariably just a crisp report; once only and with no echo, rumble, or accompanying sound. Most travellers put down the noise to the crash of a falling tree somewhere in the forest. One traveller has described how he heard the sound and how he located a hollow dead palm tree, which had fallen, as the cause. I know these

palms and the dead shell and leafless crown is so light as to be unable to create enough noise, when it falls, to carry more than half a mile. A decaying tree of large size may however have a hollow up the centre of 3 to 4 feet diameter and extending right up the bole to the first branches, a matter of 40 to 50 feet or more. Trees do not die as does the palm when decay sets in. They continue to flourish to all appearance and their crowns of branch, twig and leaf seem as good and as heavy as their neighbours. Such a tree would weigh as many tons as the palm would weigh stones and when one falls would make a correspondingly greater noise. My experience has been that the crash of some of these giant monarchs of vegetation make by far the loudest volume of sound in the forest and they may be heard at a distance of a mile or even more from the catastrophe.

I have, however, heard the sound when I have been right out in the open savannah country, probably a distance of 60 to 80 miles from the nearest forest. The savannahs carry diminutive trees, which, on their fall, would not be heard beyond a very short distance - a matter of yards. They are reefs of palms which even in favourable circumstances would not make enough noise to carry beyond a very short distance. No tree in the forests however large can make such a noise in falling, to be heard, even with a favourable wind, at such a long distance and I think we can rule out falling trees as the cause of these rather mysterious reports.

This peculiar noise is well known to every Indian tribe and to most individuals and is called "Nature's Noise". With all

their acute sensitiveness and keen observation the Indians know little or nothing as to the cause of the phenomenon. The Indian has no feat of the noise; it is harmless and does not presage either good or evil to the individual or the tribe. When it occurs they will probably discuss it and locate the direction, but beyond saying that it is "far" or "near", both very vague and elastic terms, they can give you no idea of the distance. Although the Indian has no knowledge of the cause of these weird noises he is very definite in stating that falling trees or palms are not the reason. Actually there is a great difference in the two sounds. When a tree falls the sound always reaches the ear on a horizontal line and generally with a delayed and longer sound. The "Nature Noise" seems to strike the ear from an angle of 40° or more from the horizon. A newcomer may even look up in the sky to see the cause. The sound is sharp, clear and quick. I could quite easily, even with my limited powers of observation, tell which was which in most cases, although now and again it took the more acute ear of the Indian to differentiate, if the sound were rather indistinct and at a long distance.

Although the average Indian acknowledges complete ignorance of the cause of "Nature Noises", one or two of the older and more experienced men have attributed rocks as the cause, but this declaration is generally followed by a termination which leaves a certain amount of doubt attached, and I have only met one Indian who definitely stated rocks as being the cause of the sound, without doubt or question, although he could give me no reasons as to how

or why.

I have, however, noticed that such sounds are never heard on the low-lying coast lands where there are no rocks, but I have repeatedly heard the sound in the farther interior and always where many boulders or rock masses are exposed to the direct rays of the sun. It is quite a common occurrence to meet large boulders and rocks that have burst or broken in two for no very apparent reason. These breaks may amount to a wide severance of several feet where the rocks had space to fall such as a point of a boulder jutting freely out in the air, but the majority show cleavages of not more than a few inches in width. These breaks do not show any sign of a natural fault and are generally clean cut crystalline fractures, such as those obtained by breaking a stone by force with a hammer. The cracks may show the patina and weathering of many years since the occurrence, others may be of such a clearness and newness as to suggest the rock having just been broken apart. The break is confined to one major cleavage in one direction only, or at the most in two lines. The rocks are never shattered in pieces, just the one clean break with no fragments or splinters around.

I remember a certain granite boulder situated right out in open savannah country on the watershed of two well known creeks. An old, old Indian trail led along the ridge, and the rock was a well known land mark, a couple of yards from the trail, and it indicated so many hours travel either from or to permanent water and possible sleeping places. The boulder stood about 7 feet above soil level, was some 10 feet in diameter, and had a smooth

rounded dome without a visible crack or flaw as far as the eye could see. I have often stopped at this boulder to rest or to await my carriers who had lagged behind. I had been passing this rock periodically for some dozen years, and one day the man in front down the trail said, "Look, boss that rock has broken", and sure enough it had ! Examination showed that a large layer some six inches thick, had been broken off the entire dome, somewhat resembling one of the rings of half an onion, and this again had been broken in two right across from side to side. There were no signs of weakness anywhere along the lines of cleavage, nor were there any signs of violence, merely clean fresh breeze breaks showing up and an absence of chips or fragments. This ring of stone still remained on top of the rock practically in position except that it had been forced apart some few inches where the break from side to side had occurred. It must have required much force to have broken off this half ring from the parent rock, and there must have been a considerable report, yet inquiries at the villages some 15 miles away produced no evidence of a recent "Nature Noise" in the locality. The only reason I could think of to cause the solid rock to burst was unequal expansion or contraction in favourable circumstances. Rocks broken in this manner would naturally burst with a loud noise, as the cleavage would be sudden and not gradual, and it would be a unique occurrence if an Indian happened to be sitting close when it went off. This explanation, backed by a few half hearted acceptances by the Indians, is much more feasible than that of falling palms or

trees, and I feel fairly sure it is the true cause of these weird noises heard from time to time.

In over 20 years of living in close touch with the Wapichanna tribe there have been two "Nature Noises" which attracted the attention of the entire tribe living over a distance some 100 miles by 80 miles. One which I personally saw, was a huge meteor which burst overhead and immediately went out. The report was heard by everyone, but only those within a limited radius heard the fragments as they crashed to earth. The main explosion was like a huge gun fired a short distance away; the fall of various fragments was much less pronounced, somewhat like a succession of gunshots across a valley half a mile away.

The other occurrence took place during the first week in May 1902 (?) and was heard far beyond the Wapichanna tribe. It was about one of the first of these weird noises I had heard and seemed to me to come from almost overhead. To the great glee of my Indians I looked up in the sky to see what had happened and although they admitted the sound was approximately overhead they were able to locate North East as the direction the sound had come from. I was working miles away in the forest with some 30 men and we all heard it. Carriers arriving with food from the savannahs for the men also reported having heard it distinctly. A friend, an Englishman, was also working with a gang of Indians in the forests some 50 miles from where I was busy. It was quite two months before I met him, but he and his men had also heard the

noise and his Indians' sense of the direction corresponded with mine. It was a nine days' wonder as the whole country had heard the loud report but we soon all forgot about it. It was not till a year later that we learned that Mont Pelee in the Island of Martinique had blown up on the morning of the day we heard the sound. It may have been coincidence only, as Mt Pelee is hundreds of miles away with a towering range of mountains running up to 8000-9000 feet between it and us. Whatever was the explanation it must have been something on a colossal scale to have been heard over an area of more than 10,000 square miles in extent and far beyond the power of any falling palm or tree !

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Telepathy.

Most people have seen compact flocks of birds flying overhead and have wondered at the skilful manner in which they dived, circled or swerved in unison without a single collision. What is the signal, or who gives the order for a flock of over a thousand starlings flying in close formation when they suddenly swing away from their direct line of flight ? So far as we can note, no apparent physical signal has been or could be issued, yet the particular movement is carried out en masse at exactly the same time, over a fairly large area, in perfect order and safety. The occurrence is so frequent as to prohibit the idea that such sudden changes or variations in flight are merely coincidence or just accidental. It does not seem possible that any signal could be given out to attract the notice of the senses of sight or sound which are the only two senses which can operate at a distance.

This peculiarity of mass movement is not confined to birds alone, but has repeatedly been noted also in large herds of various wild animals all over the world. Here the movement is slow by comparison owing to the much slower speed of even the fastest animal, but there occur frequent demonstrations of the peculiar nature of the action much more easily observed by man. Watch two stranger dogs unexpectedly sight each other, say at 50 yards distance ! Both stiffen into frozen immobility for a few seconds.

Suddenly one dog turns tail and races at his utmost speed for safety or home, generally pulling up only when within his own gates when he pollutes the whole neighbourhood with a stream of unprintable language. Both dogs may be evenly matched in size as far as can be seen, but even if not, it is not always the smaller dog that runs away. Somehow, one of them felt he was in a danger zone and simply ran for shelter, yet there had been neither movement nor sound omitted to serve as a warning. A stiff wind blowing at right angles to the line of the two dogs precludes the possibility of scent reaching either.

It must be that there is some subtle emanation somewhere along lines that science has, as yet, been unable to locate; something perhaps on the principle of wireless, when some unknown, exceedingly sensitive nerve or cell point in the body gives off impulses which in some way, travelling over the other, are picked up by an equally sensitive receptive nerve point some distance away - probably telepathy !

Instances of this peculiar sensitiveness without apparent physical cause are fairly common amongst all people. Nearly everybody at some time or other has gasped in surprise whem, just as they opened their mouth to speak, someone else said the identical sentence first. "Great minds think alike", we say but it is equally as possible that there is more to it than that ! In this case we have only the short distance of a few feet between the two parties, but it is probably telepathy that is the cause of the occurrence.

It is well known how news can travel amongst the more crude or savage peoples of the world at almost impossible speed both by land or water over enormous distances. In Africa nearly every traveller puts this down to the beating of drums, but I very much doubt if the drum is more than an accessory. These drums are naturally very limited in variety of sound produced: variations being possible only as to whether hit hard or softly, and this would soon become indistinct and inaudible owing to distance and differences in the rhythm of the drummer's blows. Neither do I believe any pure African Aboriginal race has ever reached the natural height of intelligence required to work out a code of signals in drumming to meet all occasions. The code would also have to be taught to each succeeding generation, by constant practice in youth, but these people have no schools, nor does report show instances of classes in the home. The whole idea seems to be quite beyond any tribe even within its own territory, but becomes even more improbable outside the limited area occupied by such tribe, for the language and customs of other tribes will almost certainly be completely different. The tribes, until fairly recent times, were at war with each other, and it is very unlikely that tribes one or two thousand miles away would have the same code of drumming, so the signals from one people would be unintelligible to another. Sound from any drum could not carry very far even in the most ideal circumstances, yet many take it for granted that the drum beaten in Togoland could convey

news and the message be understood in the far distant Mountains of the Moon over a several thousand mile tangle of forest and veldt; mountain and swamp; an area inhabited by different tribes and where there are wide strips of country completely uninhabited and across which no African drum could send an intelligent audible message.

Since intelligible sound waves are limited in radius, we must have along relay of drummers to meet the longer distances of transmission and here the human factor of error comes into play, for the wrong beat of a single note would probably render the message unreadable or change it considerably. It is far more likely that the African, probably quite unconsciously sends and receives these messages by telepathy in much the same way as it would seem to be done in the case of birds. Drumming may serve as an aid in two ways. It may help to concentrate the attention on the objective in view, and so hold the mind for a longer period free from outside disturbances while the drummer is unconsciously placing his message on the air. The drum will also warn anyone within hearing that something unusual is on; he in turn drums, so warning others until the whole tribe is tensed, and concentrating on what may be happening; it may mean life or death to the tribe. The petty worries and trivial happenings of the day disappear in the face of newer, graver factors in life; the telepathic sense becomes acute and the message is unconsciously received and registered by at least one person. The message may go far beyond the tribe of the sender and may be picked up by anyone in a receptive

mood at the moment. This far away tribe may or may not understand the language of the sender, but many tribes possess an uncanny power of reading the thoughts of others, even those of the strange white man, especially the thought on such common ties as life or death, hostility or friendship, war or peace.

I am quite convinced that the South American Aboriginal Indian has this telepathic sensitiveness fairly well deve1 oped, or at least some subtle means for the transmission and receipt of messages. It is quite an unconscious accomplishment and none can explain anything in relation to the fact. I have lived so long amongst them to know that they definitely have no mechanical means of doing so, although some travellers advocate various causes:- sound, speech or sight.

All Indian tribes use small drums, the best of which in all cases can only send sound over a comparatively short distance, certainly not far enough to reach people or villages many miles away, over which even relaying would be of no use. The drums are but rarely used except when just being made and tested, or while the toy is still a novelty. They are occasionally used at a dance or drinking festival, and the more general use is during that period when a youth is entering manhood, when, varying with the different tribal customs, he may have to march up and down the"village square" hammering away at his drum for a couple of hours before dawn every morning for weeks. There is little difference in any note and only a variety in speed or rhythm, but definitely no system of signalling has been evolved.

The same remarks apply to his flutes, whistles, or other mechanical means of producing noise - the limited distance the sound will carry and the complete lack of any code of signals. Probably the voice in a high pitched vigorous yell will carry as far as any mechanical device they know, and even that is insufficient to bridge the distance. Sight is useless at night and very restricted in range in any country, especially the high forests.

On entering a new tribe of Indians with few or no previous contacts with the outside world, one is struck immediately by their habit of conducting the welcome ceremony or litany, between host and guest, in their respective tribal languages, not more than a word or two being understood, yet they seem to know what each is meaning. Even when they later get down to business - barter - they seem to know what is required as in the instance of the Taruma (Mr. and Mrs. Dodo) doing a thriving business in Wapichanna country when I know he knew no Wapichanna language and his clients no Taruma. Nobody can be more dense or less understanding than the Indian when he chooses, yet when the right atmosphere of friendship and trust has been established, it can be almost uncanny how they can anticipate the unspoken desire, and that independent of whether one speaks English, French, German or modern Yankee ! They definitely can sense almost on meeting whether they can trust the stranger or not, and the number of observations they make in a five minutes' contact with one, even if he does not know a single word of any language they know is truly remarkable. At once they can pick out weakness in character and methods of living that are seldom wrong and would very much surprise the innocent newcomer.

Most Indians have an innate desire to please the visitor or stranger and one has to be on one's guard against this habit at all times, even more so as one gets to know a tribe and often a particular member. Should they voluntarily give one any information it is generally true as far as they know, but when one has to ask a quick question without the proper preamble, one is as likely to be told just the opposite to the truth. "Just a pack of lies", as I have heard many an irate questioner term the reply. Such untruths may be told to anyone, equally to the complete stranger or to one who knows their language well and has long established amicable relations with the tribe.

In the Wapichanna country there is generally a long dry season from October to May when all the rivers may completely stop running. The break in the drought can be very sudden, probably 6 - 10 inches in a night, and the rivers are in flood in a few hours everywhere. Within a few hours of such a flood, and extending for a week or more, there commences a rush of countless numbers of fish, all making for the higher reaches of the rivers and creeks for the purpose of spawning. A friend with whom I lived was very fond of sport, and he loved to be out at such times with his bow and arrows, shooting fish after fish. We were once both in camp and it rained heavily during the night, but not enough to start our river in flood at the house, although a few miles away on either side the creeks might be in high spate. About noon, a gang of men came in to report on some work to me. My friend came round the corner of the house where we were talking

and shouted "Hello !" where did you fellows sleep ?" They replied "At So and So creek", "Is it in flood ?" "Yes." "Are the fish running up ?" "Yes, they are just arriving". "Are there any pacu in the falls ?" "Yes." My friend immediately had a horse saddled and was off at the gallop with his bow and arrows. Darkness was just setting in when he returned with the information that the creek was barely running; just a mere trickle from pool to pool but wholly inadequate for any fish to ascend. "I might have known that if fish were on the move at all, these men would have stayed all day shooting" was his remark.

My friend had resided for years in the district, spoke the language fluently and was noted for his kindness and understanding towards the whole tribe yet here they told him a deliberate untruth. In my opinion he had already come to a decided conclusion in his own mind that the creek was in flood and the fish running. The Indians either read his mind (telepathy) or the way the question was made gave them a hint, and they were afraid to cause him displeasure by telling the truth. Many and many a time I have been told facts that subsequently I discovered to be untrue but going over the circumstances later I generally found I had already reached a certain conclusion myself and that the information coincided with my preconceived ideas. The only way to obviate these apparent lies is to lead slowly, step by step, from some distant starting point until you arrive at what you actually do want. Had my friend taken time, got the men, as per custom, to tell over the slow journey from the village to our camp, he would have learned much and

a few adroit questions would have put him in possession of the true facts. They would have told of how it rained, how the swamps were full and made walking difficult and much else of no importance. Then my friend could have started with the remark, "But with all this rain the creek must be rising ?" "Oh, yes !" "Did you have difficulty in crossing ?" "Oh, no ! it was just beginning to flow". "Not enough for fish to ascend however". "The creek just reached ankle deep, but no fish could pass when we left". With the customary directness and haste of the white man he wanted an opinion on a subject on which he already had a firm conviction and the men gave the answer he unconsciously wanted.

The speed with which news travels over either short or long distances is quite astonishing. Many people put this fact down to the continual movement of the various members of the tribe. In a tribe of one to two thousand souls there must necessarily be much activity, hunting and fishing expeditions every day from almost every village in quest of food; social visits to neighbouring villages, or trading expeditions here and there. These people, free as the birds of the forests almost, need consult no one, and move freely around according to their own desires and they must frequently meet others in the course of their travels when they can pass on such news as they have by word of mouth, but there are times when the news concerns people far beyond the range of the tribe, over territory held by enemies, or just trackless jungle through which no known being could pass.

A missionary was greatly interested in the Indians and was certain he had solved the method of message transmission. For some reason, which I cannot now remember, he was led to hold a special service most unexpectedly, at which he desired a full attendance. One village lay up river at least one good day's journey by corial. It was Friday morning and he chose a messenger to go in his corial at once to warn the distant villagers that they were wanted. Towards sunset, he was horrified to notice his messenger calmly bathing. A count of the village and mission corials showed every one safely tied to the bank and enquiry showed that no one had gone to deliver the message. The messenger who had been ordered to go gave no reason for disobeying, but quietly assured the missionary there was no need to worry, as the absent villagers would be there on time. On the Saturday, soon after noon, the villagers in question turned up, having left their homes the previous day and here they were in excellent time for the special service at dawn on Sunday morning.

Interrogation gave no results either from the messenger or the villagers themselves. Their village was only approachable by river, the forest being a trackless jungle, and there had been no visitors either up or down the creek. Then my friend remembered having seen the messenger vigorously cupping water with his hands. This gives out a sound that travels quite a distance and he decided it was the method by which the absentees had been notified. Further observation on subsequent occasions confirmed the missionary in this idea, and he always remained convinced that he had solved

the mystery of these long distance messages.

Cupping water, as I call it, is fairly common amongst many tribes and calls for little exertion or force. There are several variations, but the principle is the same in all cases. An Indian walks out into water till it reaches his waist. His arms are held close to the body but bent at right angles at the elbows, thus sticking out in front a little above the water with the hands slightly cupped, palms downwards. The hands are then plunged under the water with a circular sweep that causes the palms to meet a few inches below the surface, and a fairly sharp booming report is given out which can be heard half a mile or more away in favourable circumstances. An alternative method is to cup one hand only and force it down about a foot in the water and then turn the palm up when a considerable bubble of air is released and begins to rise. The bubble is struck with the open palm of the free hand just as it reaches, or a little below the surface and the same sound is produced. Yet a third method is to cup one hand and plunge it under the water with a circular sweep a few inches under the surface. At the same time the whole body is swung sideways so that the armpit opposite the moving hand connects with it immediately below the surface and the sound rings out.

When watching experts the operation seems effortless, but it requires considerable skill and accuracy to connect the various limbs at the right spot. I have seen little slips of children doing it with ease, but often as I tried, I never got beyond an

accidental success even with an expert demonstrating. Each person strikes a slightly different note, and the boys of one village can often pick out the different bathers by the sound fully half a mile away. I have repeatedly asked my boys to send some simple signal to the bathers, for instance asking them to visit our camp, but they invariably informed me it was quite impossible to do so. None of them could give any signal.

I have never become sufficiently intimate with any tribe except the Wapichanna to decide to what extent they carry on these methods of conveying news. My interpreter - Saik Tau - told me the Tarumas possessed the faculty and also the Waiwai. All Indians are very shy and reticent on the subject, largely because any allusion to it is generally received by outside people with the greatest contempt and ridicule. Unfortunately, the real Aboriginal Indian of the forests is known all over South America as the "Monkey" (Makaka), and is spoken of as such, and treated more or less as one until after losing many of his finer characteristics through contact, he has adopted all the vices he can from the superior races (and incidentally none of their virtues) when he becomes known as "civilizado" (civilized) and is treated with even less respect. All Indians are deeply sensitive to ridicule, sarcasm and scorn. One can always get much more work by a judicious application of these than from any other reason. This weakness is often a great factor in their lives if correctly used, but it is much more misused as a rule and the Indian reacts accordingly.

It is this susceptibility to sarcastic ridicule and scorn that he rarely understands, which accounts for such behaviour as excessive laughter when associated with white people. Someone makes a simple remark and everybody laughs, but I have often felt that such laughter is caused by the dread of ridicule or scorn from the stranger in his reception or reply to the remark; a covering to anticipated embarrassment. They are naturally a free, happy race to whom laughter comes readily, and they do ridicule each other most unmercifully on every occasion, but this is generally a superficial ridicule with no malice behind it and no withering scorn of inferiority, and is quite understood by the tribe. When, however, the Indian puts out some of his finer and higher feeling in front of a stranger, to be met with scorn or ridicule, he retires behind his inscrutable reserve and one gets no farther.

When I began working with the Wapichanna tribe, I noticed in my long walks here and there in the forests on my tours of inspection, that I would frequently find an Indian whom I particularly wished to meet sitting by the side of the trail, and who would quietly greet my guide and me by saying, "I am waiting for you", or "I am expecting you". I also found this expression a fairly common salutation when entering their various wide spread villages. There the headman would generally keep to the strict tribal litany with my leader, but quite often some of the less responsible or younger villagers would address some of my other men by saying they were waiting for us. The correct reply to this salutation was some joke connected with some of the women of

the village, perhaps some female relative of the man who had spoken, e.g. "It is your wife, and not you whom I hoped was expecting me", or "I would much prefer your younger sister to be waiting to receive me".

There was a couple of white traders who had been in the district for years and I asked these men what was behind these unexpected meetings and peculiar salutations. Their reply was that such meetings were pure coincidence and that the remarks were a mere joke grounded on a popular saying in vogue at the time.

I must admit the Wapichanna were much given to adopting popular expressions which would spread over the whole tribe in a short time and might have a run of a year or more until some other remark became popular. In the play of ordinary conversation someone would lead the talk around to a point where he could use the expression in reply. This showed brilliance and wit, and was received with loud laughter on all sides. Theseeexpressions might be a similarity between two words, a word that had been mispronounced by someone in the village, or merely some senseless sound on which hung some obscure joke. All Indians are adepts at coining new words. When the first cart was assembled in Wapichanna country it was something completely new to them and they would stand a long distance off in case of danger to themselves. They had never seen such a thing in their lives and had no name for it, but it hadn't gone many yards when, from the noise of the cart sliding from side to side over rough ground, they named it "Tal-lal", and

it has remained "Tal-la-" down to present times. In the times when I first met the Wapichanna, the customary remark to any statement was either an affirmative "Ha", or "Is that so ?" Then some bright smarty started a slogan of "You lie", after any statement by a visitor. No popular saying I have ever heard was so bad on the blood pressure as the constant, "You lie", remark to anything one might say, no matter how obvious the truth might be. These popular remarks, after being ridden to death for some weeks or months, always died away, or were supplanted by new ones. The salutation of, "I am waiting for (or expecting) you", however did not die away. There were times when one heard it used but seldom, but it was still in use when I left the district.

When on these long journeys of inspection in the forests, I always slept in a camp somewhere amongst my men. I might be delayed there for any reason and my itinerary could not be definite or known at any time. The night before leaving any camp, my guide and I, after turning in to our hammocks after dark, would have a consultation with the men as to the best trail to follow to reach the next camp probably a distance of 20-30 miles away. A single workman might have a camp for himself and family several miles off the more direct route. These single camps were more temporary shelters only, erected wherever the Indian had located a favourable patch of balata trees from which he extracted the gum and got paid for the work. It was impossible for me or any guide to know exactly where these shelters had been erected in the whole of the thousands of square miles under my control. I

might wish very much to see such a workman on my way through and there would be long, complicated instructions given as to how to find the place: the exact spot to branch off the trail, and the direction in which to cut our way. In the end I might decide it was not worth my time and trouble to attempt to find that camp and its lone workman; and decide to go straight past on the main trail. Definitely no one left the camp that night and no man outside would know my movements, yet next day when almost opposite that single camp, I would find my workman sitting on a fallen log patiently weaving a basket or something and he would quietly remark "I am waiting for you".

My theory for these coincidences is that during our conversation of the previous evening, every man was giving his most earnest attention to the discussion, even if he were not actively talking, and was at least intently going over the country and trail in memory, and this probably sent the mind of someone into the peculiar state of mental activity that is necessary for the telepathic sense to function. Between the time that darkness falls and such hour as the Indian goes to sleep, is the time that he is most susceptible to the occult. At such a time "Konaima" and invisible unknown dangers roam in search of victims. Any slight sound of a peculiar or strange nature brings a quick "Hist", from someone, which will close the most hilarious conversation. I have been in a camp where the men have sat for hours with their weapons in hand as silent as the grave, their minds questing hither and thither for an explanation of some

sound out in the dark, trying to sense the dreaded unknown danger and planning the best method of defence or offence. In a new camp, it is wise to be especially vigilant as there the dangers may be different from those at their proper homes. These hours, therefore, are just the time that the stimulus for receiving impressions from outside would be most acute and the telepathic sense of reception at its highest. Thus the hours when my men, under strong stimulus, were emitting quite unconsciously whatever waves or emanations carry the message, coincided exactly with the time when the single worker was tensed to a high degree of receptivity, and unconsciously picked up these waves and learnt somehow of my proposed journey.

I do not think this omission or reception of messages over distances is done very frequently. Both the parties must be in the proper state of mental activity. The sender is the more important and the necessary condition could only be produced when some abnormal circumstances took place to provide the stimulus and concentration required. Even then the news might fall on unreceptive senses. It takes very little with most of us to disturb close attention and concentration at any time, and as often as not, the majority of the tribe would be busy thinking, or talking over the events of the day in a normal manner when the message was flashed out. It could only be at a moment of the necessary receptivity that the message would be understood. Such moments would also have to coincide to a split second in time, otherwise the message would be missed. As civilization

and its many ramifications come into play, the Indian has more things to think about, his innate sense of danger decreases, the mysterious is either explained or lessened in effect, and consequently the necessary stimuli and peculiar frame of mind are fewer and telepathy becomes rarer from year to year almost everywhere.

I do not think these mysterious messages are sent either by a code or their own language. Within the limited area of any individual tribe, detail in the tribal language is possible and probable, but periodically messages come in from distances far beyond the tribe, probably over country inhabited by enemies or just sheer forest without a single inhabitant. This disposes of a possible relay which in any case owing to complete difference in language, would have to be in an intelligible code of some kind, and that they do not possess. It is much more likely that they can grasp an idea in its main points, much as anyone can tell at the quickest possible glance at a view, whether it is sea, sky, or land. It may also be that there is some common note that will indicate danger or death no matter where, or who gives the signal. The subject of telepathy is quite beyond the layman, but I am certain from personal experiences that there are times when given the necessary stimuli at both ends of communication at exactly the same fraction of a second, Indians can and do receive information over distances ranging from the next village only a few miles away to something that has occurred quite 200 miles away, and that irrespective of the languages at such distance.

It is quite hopeless to make even a guess at the amount of telepathy that goes on. One is struck by the amount of news

possessed by different members of the tribe at times. Yet again one is forcibly impressed on occasion, in finding a village completely ignorant of some death or tragedy in the next village. When they retail their local gossip or news, there is no means of checking up how that man received his information. Most of the news is not of sufficient importance to catch the attention or warrant investigation. It is only when some piece of news from long distances away, sufficiently important to ensure a record being made, that one actually comes into touch with telepathy. I do not think any Indian has any definite knowledge either how to transmit or receive messages and it is done quite unconsciously at certain phases of acute mental activity.

I do not think it possible for any man without previous experience to enter any Aboriginal Indian tribe of South America without committing many a faux pas and unwittingly offending them. I have known missionaries, simply oozing good intentions and milk of human kindness, who have made serious and costly mistakes. In my own case I know I made many, but gradually the Wapichanna began to understand that I really meant no harm, and that my peculiarities, such as cutting short their various litanies and attempts to arrive at a point sooner than custom dictated, were rather harmless and had better be condoned or overlooked in view of the benefits to themselves in other directions. I had the greatest sympathy and curiosity in their telepathic news and gradually they began to tell me everything they heard. Newcomers to the district often used to chaff me on this by asking, "What

is on the telegraph just now ?" and I now give a few of the incidents that rather startled them, and astonished myself.

The sole Government representative of the district was a man of many years residence and very close association with the Wapichanna. Government decided to make a survey of a part of the Colony some hundreds of miles away and this man was put in charge. He left the district with some fifteen men who had been specially trained and whom he wanted to rely on as dependable carriers and helpers in the survey, which was to take some six months to execute, in country where there might be no inhabitants or whose residents were no use as workers. About a month after his departure, an Indian walked in and told me this had broken down in health, was seriously ill, and the survey abandoned. My informant could give me no idea as to how he had got the news and it was very definite that no one had arrived who could have brought word. A couple of months later, the official returned to the district and confirmed in every detail the news which had been circulated in the tribe. He had reached the coast safely and left with another white man to do the survey. They had to pass through a rather unhealthy belt and the companion was in none too good health. They left the last point in civilization, and had just cleared an enormous fall after days of hard labour, when our district official took seriously ill. They had to return to town where the doctors diagnosed something of long standing and he had to undergo an operation in hospital. He kept all his men in town while ill, and as soon after as was possible returned with them to our district. The country between the point where he broke down and us was over two hundred miles

in a straight line, a huge range of mountains of some 6000 to 8000 feet in altitude intervening, largely under deep forest and sparsely inhabited by Indian tribes, of whom the Wapichanna walked in daily fear, and who had been their sworn enemies for years. None of the boat hands had left his employment and no boats had left to come up country !

I was doing some work amongst these same enemies - the Macussi tribe - accompanied by one man who was one of the few accepted inter-tribal mediums of such small trade as went on. At morning coffee - 5.30 a.m. - he astonished me by asking if I know that 'Such and Such' a white man had shot a girl in 'So and So' village. "When did this happen ?", I asked. "Quite recently", he replied. "Probably as recently as last night ?", I enquired. "It might even be so" he said. Further details I could not get, nor could he tell me how he got the news. He definitely knew a girl had been shot and by whom, but nothing further. When I returned home after some months I began to enquire into the incident, but not a single Indian could or would give me any information, in fact, they swore there had been no such happening, so I was reluctantly forced to conclude the Telegraph had made a mistake. Some two years later, I met a man who was partner with the alleged shooter, and must have been present at the occurrence. After a long conversation I suddenly sprang on him this question:- "Whatever made 'So and So' shoot that Wapichanna girl ?" He simply gasped, "What in Hades do you know about it ?" "Just everything", I answered, "so you may

just as well give the few details I don't know". He told me a girl had been shot but quite accidentally, the bullet wounding her in the arm. The girl had been bandaged and attended to as well as possible, then a good payment given her in recompense. The village had been asked to keep the accident a profound secret. The men responsible knew the Indians and their beliefs, and he had threatened to send a horde of the worst imaginable Konaimas if any villager even so much as mentioned the happening and I must say they never did. I was roughly 100 miles away from the scene, a range of 2000 ft high mountains between us, completely clothed in high forest where not a single soul was living.

Quite unexpectedly I had occasion to send four men on horse-back to collect a number of cattle which I had purchased from some Indians who lived at the extreme end of the savannahs, a distance of, at least, 150 miles away. I gave these men careful instructions where to sleep at villages along the road, each about 30 miles apart so as to conserve their horses. They were to spend three days in the village where the cattle were in order to rest their mounts, and gently collect the cattle. Then they were to drive these cattle slowly and carefully along a different road for three days to a certain village where I would meet them as I had business there, and would take charge of the drive in person. In all, they had to do a journey of 160 miles in 10 days. I left the day after my men and was at the village arranged with plenty time in hand. To my surprise and dismay, I saw the cattle approaching the rendezvous on the sixth day instead of the tenth as arranged

and I immediately began scolding my headman for travelling so rapidly, as the animals would have suffered considerably, especially as this was just the beginning of a 400 mile drive to market. "It is not so", explained my foreman, "we slept each night just as you had ordered, but we met the Indians driving out the cattle to meet us and that saved us four days". The man whom I had bought the cattle from had come along all the way, so I called him and demanded an explanation, and this is in effect what he told me.

"This is the season when we cut our new fields, and our village was deserted except for a couple of old women. My family and I were some 15 miles inside the forest at work when Indian "Anton" came in and told us you wanted your cattle at once, and that I was to go to assist you. We packed up in readiness at once and left for the savannahs next morning. When we arrived home we still had time to catch up our horses before it was dark. The next day we quietly collected your cattle and put them in the corral for the night. We made an early start next morning driving the cattle in front of us and met your men at noon when they took charge and we have slept according to their orders as given by you." "How many days is it since you were told by Anton to do all this?", I enquired. He put out his hands and began ticking off how many nights he had slept since then, and said "To-night will make the sixth night". "Can you tell me how and where Anton received this message from me?" I asked. This he did not know. He had had my message and that was enough.

Now my own men had collected horses at home with no hint as to the object in view. It was only late in the evening when the

different horses were allocated to each man that they were told where they were to go, and the business on hand. Certainly no one knew the trip was to be done and no stranger had passed our station, nor had any of my men been more than a few miles away when rounding up the horses, yet Anton got the message in time to be able to start within an hour or so of the departure of my men, to walk 15 miles through the forest and deliver that message in time to allow the Indians to prepare themselves for the trip out to collect and deliver the cattle.

Subsequently I got hold of Anton and questioned him closely. He was perfectly frank on the point that he had gone into the forest and warned the Indians that their services were required out in the savannahs. Further than that I could get no information. He had not been told by some outsider, that he knew, but as to how he had arrived at the knowledge, he was perfectly blank and could explain nothing.

I was once asked by a foreign company to report on a certain river which lay entirely in high forest. The river was obstructed near its source by a bad fall which so far had completely blocked navigation. No person was known to be living on the river, nor had any Indian ever seen its course in living memory. I decided to cut a trail through the forests to its source, build a woodskin, and then descend as this was much easier than ascending what might be a rapid, troublesome river. I took a gang of my Indians and after 10 days' hard work struck the head waters of a small creek which must either be the river itself or a branch. In two days we made a woodskin

and launched it. I sent back overland all the men with me except two whom I selected for their excellent bush lore and ability, and the three of us started down the creek. It proved to be the source of the river we wanted, but was one of the worst and most dangerous journeys I have ever made. Every few miles we met most formidable obstacles, rocks, rapids, whirlpools and huge falls. Progress was difficult and slow, as we had only a frail woodskin craft between us and even more trouble, if we smashed it. Our food began to run short with the continual delays and difficulties, then to crown everything, in negotiating a fall of 100 feet high, our little craft got out of control and was so badly split as to be of little further use to us. About half a mile below us we saw a huge sandbank on what was now a fair sized river and after some trouble, we beached our woodskin at the head of it.

We sat there consulting as to what was best to do. Our craft could be lashed together again, so as to be serviceable, provided we could find a certain liane whose bark was necessary to caulk the crack. Both men, however, declared they had been watching both banks of the creek for this liane just in case of an accident such as had happened, but had seen no sign of it anywhere. It was no use crying over split milk; the sun was high so we'd better have breakfast first and decide what to do afterwards. We had been lucky with the bow and arrow in the falls and had several fine fish waiting for the pot.

There was plenty of wreck and debris left by previous floods lying amongst the nearby rock and we had drawn up the boat right at the edge where the rocks ended and the sandbank began. One

man took the fish and began to clean them; the other began making fire. The man who was making fire was a rather famous piaiman (medicine man) and soon he had it blazing brightly. Suddenly this man seemed to galvanise, he stood stock still, staring into the flames for a moment or so, then he ejaculated, "I see it, I see it", whereupon he reached down to pick up his machette which was lying at his feet. He wheeled round and began walking swiftly down the sandbank. Half way down the sandbank was a large isolated clump of a couple of stunted trees, and a tangled mass of vines. The piaiman stopped before the clump; he pushed his hand amongst the tangle and pulled out the one and only vine that could be of any use to us ! None of us had been within at least 50 yards of that tree and vine clump, yet he found it!

The vine was barely sufficient for our purpose, but we got going again watching like hawks now for more lianos, but we never saw one more on the balance of the journey. We were not far from the river mouth fortunately, and turned up another river for home. Our food was completely exhausted, and the new river had not a single fish or any other form of game. We made an old Indian landing late at night, hungry and weary, with a 40 mile forest journey in front of us before reaching a village and a badly needed supply of food. We left at dawn next morning and pushing on all day, arrived at a village with the last streaks of daylight. To our surprise, we found the Indians were all packed up ready to start in the morning over the trail we had just travelled, to go in search of us, as they had had a message that we were in trouble and our food exhausted. I traced the message back to the Government Commissioner who in turn had had it from an Indian. Believing

that the story might be true, he had despatched messengers to the village nearest to where help could reach us, with orders for the men to go in search of us.

On that occasion it was definitely impossible for anyone to have carried a message, as there was not a single soul within probably 100 miles of the three of us. It may have been coincidence but I doubt it. The reason for the delay of the rescuers' start was because the Indian who received the message went off to the only white man in the district, and there was more delay in his getting fresh messengers for the 36 mile journey to the village where we found the men in readiness to start. To me, the strangest part of the whole affair was the Piaiman glaring into the fire, with his, "I see it, I see it", as he turned to discover at a considerable distance, the only alternative to building a new woodskin as a way out of our predicament.

Two American prospectors had arrived in the district and had made my station their headquarters from which to organise and conduct their various expeditions all over the country. I had sent boats out to the coast with the first floods of the year, and these being due back in late July (1914), we were all in camp together to receive the first mail since the previous September, and for me to check up and store the annual supplies that the boats carried as cargo.

One night in August, we had finished dinner and were all three sitting reading these latest home papers in the large common room that formed the second storey of the house. About 8.30 p.m. an Indian boy climbed up the steps and asked permission (as was the general custom) to be allowed to sleep somewhere. So late an

arrival (after dark) was most unusual, and I sensed there was something important around somewhere. Much as I wanted to get back to my newspapers I kept the boy in conversation, after granting permission to his request, and presently he asked me, "Why are you white people quarrelling and fighting ?". This was just so much Greek to me, and when I asked him to explain, all he could tell me was that the white people (English) were at war and that eight different peoples (nations) were implicated. Of where the news had originated he knew nothing, but he had travelled all day to hear whether the tribe or I were in any danger.

When I had dismissed the man, I disclosed the news to my American friends. We went over the papers so recently to hand and nowhere could we see any indication of war for all was apparently at peace. No boats other than my own had come up river, and if they had, this Indian came in from just the opposite direction. It was the rainy season, the tribe were practically all away at work for me in the high forests, and few people were braving the discomforts of cross country journeys except for some very definite reason. As far as I could possibly ascertain it was impossible for any stranger to have brought the news, so we unanimously decided that for once the Indian Telegraph had made a bloomer and was entirely wrong with this very startling piece of news. I had to despatch a later boat to reach the coast on the 1st October. On its return in early November, we tore open the latest papers and then learned definitely that the Great War had broken out in early August.

Settlement of Disputes.

Peace is general and war the exception amongst the Aboriginal Indians. Through the machinations of their medicine man they may fear a neighbouring tribe generally from a belief that such a tribe has strong occult propensities that can be used to do harm far beyond their boundaries. On this account, I found the Wapichannas living in holy fear of the Macussi, their near neighbours. For barter purposes it was essential to have certain middlemen, invariably men of either tribe who had married women belonging to the opposite tribe. Scarcely a death was registered amongst the Wapichanna unless caused by the Macussi; the medicine man would also make it publicly known that during a seance they had seen the invisible Kenaima being despatched to the Wapichanna country by the Macussi, and that it would be well for the Wapichanna never to be alone, and always to be well armed. They walked in daily fear of their lives, yet the Wapichanna had been forced to develop a style of boat which would stand up to the falls and in which they made periodical trips to the coast for salt, axes, knives and other necessities. The journey had to be made through Macussi country so full of potential danger, and it was only the stout-hearted who dared to go.

The Wapichanna had of course entered their present territory in fairly recent times, when they had peacefully absorbed the Atorads. There was no record of actual fighting since this had

taken place, either with the Macussi or the other tribe. The Wapichanna country is however covered with myths of great fights at more distant dates. History shows that the pioneer Europeans on the coast had to have slaves, and this necessity was met by subjugating the various tribes they met on landing. These pioneers practically depopulated the whole coast in the endeavour to get slaves, and also organised expeditions into the far interior to seize and bring back more and more slaves. The Caribs were the most warlike tribe and they penetrated far inland. Doubtless they encouraged the Macussi to enter Atarod country as the last remaining Atarods have told me of the great fights that took place between themselves and the Macussi. The last of these fights took place on the Sowara Wau where they fought without ceasing for three days. It ended with no decided victory on either side but the Macussi withdrew and never again raided the country. The pioneers, finding the Indians of little use as slaves, had begun to look farther afield and "blackberrying" sprang into being. Thus it is more probable that the Macussi had no longer any inducement to fight, as they are no more offensive than any other tribe to-day, and once away from pressure from the coast, either from the pioneers themselves or their minions - the Carib tribe - they reverted to the old peaceful ways of previous generations. That the Caribs reached the Atorad country is well known. They were the most ruthless of all tribes and when I went amongst the Wapichanna, for many years I could hear the more elderly matrons hushing a fretful child with "The Caribs are coming", and no more

effective way of getting perfect quiet have I ever heard.

Although no tribe to my knowledge conducts active warfare in or around British Guiana, they have many petty internecine arguments and squabbles, especially amongst the younger more volatile males, although these rarely go beyond one or two of their tests of strength and endurance of which two were in vogue on occasions when I first met the Wapichanna. The older men seemed to have the sense to adjust their quarrels without actual fighting although I have known a case where a man injured another slightly at a drink, when passions and tempers got out of hand. At a few of these festivals I have had to interfere, but I often thought it would all have ended in smoke.

The customary way of showing displeasure, a quarrel or an open rupture, is by complete silence - treating each other with silent scorn. It was a fairly common occurrence for people to lay a complaint before me against some other party, probably an inmate of the same house or village, and just as likely one of their own immediate relatives. There had been a quarrel, generally over some trivial matter, and the only evidence was that the other participants kept themselves well apart and refused to speak. They completely ignored each other till one complained.

The women amongst the Wapichanna were more numerous than the men and were constantly quarrelling amongst themselves through jealousy. The tribal habit of having a plurality of wives led to the majority of these silent disputes. The respective wives were seldom on speaking terms with each other for very long. A little too ardent display of affection or preference by the man

generally led to a fit of the sulks on the part of the slighted party, and they had quarrelled ! Such a quarrel between the women rarely went beyond a loud candid opinion of each other, or at the most a little hair pulling. These disputes were often settled by a thorough thrashing of the least necessary wife by the husband should the quarrel interfere with his peace or enjoyment of life. It can be very amusing to see two wives who are not on speaking terms with each other, yet wishing one another no active harm. They are constantly communicating with each other through some third party, probably one of their own children, sending messages, or asking for the loan of some necessary adjunct to household duties, although the distance between the respective parties is at most not more than a few feet. The man may bring in some game, yet the wife who cooks and serves it will never forget her rival and some part of the food is sent to her through some intermediary. If the game is small, the favoured wife puts most of it before her lord and master. The other wife may only have a couple of hot peppers which she boils up with some water and if possible a little salt. As soon as the favourite wife has, so to speak, laid the table - in this case a clear space on the floor - the second wife is waiting till the other has retired whereupon she also sets out her poorer dish of peppers and water. The husband must partake of all two pots. Jealous eyes are watching and due courtesy must be accorded in proportion to each pot. If, however, the game is large, say a deer, the favourite wife cuts it up and

apportions certain cuts to the other; the intermediary here coming into play to deliver it, but the second wife must on no accouht serve up better cuts or more succulent dishes than her rival. These silences between parties - and they are quite common between the men also - may only amount to a day or two of aloofness, but they can extend to periods of months or even years in exceptional cases. I have known two sisters who did not speak to each other for over a year, yet they were the best of friends, nursing each other's children as occasion demanded, and constantly asking and giving food, tools, and other necessities through some third party.

Most of the disputes amongst men arose through gossip. Some interfering busybody, generally a woman, would report something that had been said by some one probably in a moment of irritation, and the customary silent quarrel would begin, but usually they were soon cleared up, and rarely lasted more than a week or so. Amongst the younger, irresponsible men, quarrels were fairly common, generally on points of prowess or strength, and the old time test at such a time was whipping, although it had almost fallen into abeyance before I left. An Arawak lad came up from the coast amongst the carriers of a visiting white man. He was boasting considerably of his endurance and strength; a dispute arose and a Wapichanna boy called him out to a whipping test. Both were wearing leather belts with heavy metal buckles which they took off to use in the settlement of the dispute. Each stripped his clothes and as challenger, the Wapichanna man raised his hands high above his head, leaving his body bare to the

to the expected blows. The Arawak took the buckle end of the belt in his hand, and applied six lashes (the number agreed on) with the leather end of the belt round his opponent's waist, putting all the force and sting he could muster into each blow. The Wapichanna stood calmly smiling and urging the Arawak to hit him ! "Why, you are only tickling me" he said. The Arawak now raised his hands high in turn and the Wapichanna gripped his belt, but he held the leather end in his hand and struck with the buckle. The heavy brass buckle added enormously to the force and weight of each blow. The very first raised a nasty weal and brought a yell about the unfairness of the method. Before he could drop his hands he had received a second which drew blood. It was too much and the Arawak took to his heels, closely followed by the Wapichanna in pursuit inflicting a new blow somewhere at every second step until he had given the six lashes agreed on. The Arawak lived at a serious discount afterwards, the butt of all the village raillery, whereas he had been previously treated with considerable respect as being a member of a tribe they knew little about and also from the fact that all the worst troubles in life come up river from the coast. The lad was very glad when his master shortly afterwards returned to the coast.

Wrestling was a fairly common method of settling disputes, especially those of strength. All my experience of wrestling had been to throw an opponent on the ground by any means possible, but the Wapichanna technique was just the opposite. Their aim was to raise the opponent's feet clear off the ground sufficiently long to allow them to take a short step or two and to shout "Tikap" ! (Look !). It was catch as catch can in the matter

of grips, and then followed the endeavour to lift the opponent. There was little fencing or manoeuvring for position. Tempers would be hot, due to the argument and usually they rushed at each other impetuously. Success depended far more on the position of the first grip than on any skill or science. The man who first caught a grip round the waist and under the other's arms had any opponent at his mercy as all he had to do was to lift him off the ground. They were adepts at getting the favoured grips, and I have been ignominiously hoisted in these wrestling matches. The same type of wrestling is adopted at certain drinking festivals to decide whether the "house" or the visitors are to own the beer, and here I have tried a few times. At these festivals all the males of the house or village wrestle with the arriving visitors, and a visitor who survives the first test can be attacked by half a dozen men who have disposed of their opponents and are free to assist their less fortunate mates. The wrestling test was generally final in all disputes, although another might be staged a following day if the argument was continued. As a rule, the one who lost took the decision quite sportingly and admitted his inferiority. Wrestling fell largely out of fashion latterly, and other tests of strength became popular through increasing contact with the outside world. One of these was for two men to place the elbows of their right arms about a foot apart on a box, a rock or anything that was raised and convenient, with their arms and hands held perpendicularly. They brought the palms forward until touching and interlocked their respective fingers.

On a given signal each began to try to force the others arm over backward and he who did this was adjudged the winner. This test really depended on sheer strength without any bias of grips.

On my first visit to the Waiwai, I was much struck by the fact that most of the grown up men had a number of unusual markings or scars along the waistline and over the abdomen. These were longitudinal scars from half an inch to about three inches in length in extreme cases and about one-quarter of an inch across. In one or two cases these cuts had been severe enough to cause small ruptures. I learned these scars were the results of their tribal whipping watches. The Waiwai were naturally shy and reticent about all tribal customs before new acquaintances of such different culture as myself and even my men, and it was difficult to find out the reason for these whipping affairs. I have been told they were to settle disputes; to decide petty quarrels; as tests of endurance in entering manhood, or as a means of selecting a new leader when a vacancy occurred through death or the erection of a new or sub-village. Any of these reasons could easily have been a worthy excuse for the rite, but I have no proof of any being of major importance, as I found them constantly changing the conversation whenever whipping was mentioned.

Whips were numerous in every communal house, averaging almost one for every male who had a family. They were quite ready to display or even sell them, and I always purchased a few at each visit as they were beautifully made and splendid examples of Indian workmanship. The whip had a handle about eight inches

long, one inch diameter, and was perfectly circular. The handle was invariably stained with a deep black dye and ornamented with their usual geometrical figures. At each end would be rings of coloured beads wound round, and there were also rings or tufts at the extreme end of the delicate red and yellow feathers of the toucan bird, attached by a thin silkgrass thread. Firmly attached by a lashing to one end of the handle, was a certain amount of long silk-grass fibre to form a core for the thong, and very gradually tapering to the end. Round and round the core from as near the handle as possible right to the extreme point was very carefully wound a long thin silk-grass string of about 1/32 part of an inch in diameter, in much the same way as the winding of our sewing cotton on a reel. The thong was now coated with their black vegetable pitch, care being taken to work it in to the hollows between the winding of the string until it formed one straight smooth thong. The thong was pulled constantly through the clenched palm of the hand to ensure perfect smoothness and the required high gloss or polish. These thongs were about 24" to 30" in length: rarely more than ¼" diameter at the butt and gently tapering to 1/8" diameter at the free end.

This pitch is common to all Indian tribes and enters into daily use in the repairs and making of all their baskets, bows and arrows and anything that requires a slightly sticky adhesive or watertight surface. Pitch is collected in the forests from a tree that exudes a thick gum at any point of injury to the outer bark, such as the bore hole of a beetle, or more frequently from the cracks made in the bark by the tree increasing

its girth at some favourable season. On contact with the air the gum coagulates into a hard, almost stonelike, brown mass, when it is knocked off the tree and carried home and stored. When required, the mass is pounded and put into an old earthenware cooking pot over a fire and melted down to a fluid, exactly as the cook renders suet at home. A thick scum of worthless material rises to the top, which is carefully skimmed off and thrown away. According to what the pitch is to be used for and largely dependent on the individual's recipe or resources, a certain amount of rendered fat or vegetable oil is poured into the boiling pitch and vigorously stirred. A number of bamboo joints have meanwhile been prepared of selected diameter and length, into which the still boiling pitch is poured, when it is carefully put away to allow it to set. When completely cold, the bamboo can be split off, and they have a hard cylinder of pitch, one to three inches diameter, and from four to twelve inches in length, in which form it passes around as barter. Good quality pitch must show a jet black, shiny fracture free from streaks and blemishes, and should be about the consistency of cobblers' wax so as to adhere the more easily and freely when a string is drawn over. Too little fat or oil added, leaves it too hard and brittle; too much on the other hand, leaving it too soft and tacky, with a low adhesive point.

I had asked more than once for a demonstration of whipping amongst the Waiwai but the suggestion was always received with looks of dismay, and the subject had to be dropped as it was evidently rather distasteful. It was therefore not until my third

or fourth visit, when I had completely won their confidence, that they staged a demonstration. Every tribe has its own national dance, strange to say, very closely allied in principle even over enormous distances, and a complete ignorance of the world beyond their own valley. These dances depend on the representation in some form or other of various animals by the various dancers. Knowing Chief Yufono very well by this time, I persuaded him to stage the Waiwai national dance. I found it took some days to prepare the various necessary costumes, and there were frequent idle hours while the various parties had to rest. I had been proposing a whipping match more to see how it was done, than as an exhibition of cruelty as would seem to be the general run of such affairs. There were many objections. Apart from their own reluctance, I found it was the rule that every male in the village had to take part in the proceedings. Would my men face the ordeal ? On this trip, I had only a few Taruma Indians with me and after some talk, they eventually decided to consent, but I countered by insisting that the show was to be more of a play, and that no severe whipping was to be done, and that there was to be no revenge taken for personal spite or any official tribal position to be at stake.

At length, after due coaching and the payment of some articles of barter, all obstacles were overcome and a match arranged for the following day. As usual, the early hours of the day were spent in a further process of making the necessary dresses for the National dance. After the work was finished there was a general bath and fully an hour spent on the decoration

of the person of every male in the village; even the feather ornaments they had sold me had to be returned for the occasion. It was evidently a great affair to the men, yet the women displayed neither excitement nor curiosity. They went about the daily task just as if it were an ordinary day, preparing food and drink, spinning thread or making graters, just as each woman fancied or necessity dictated.

A meal was served about noon, and every male brought out his stool and sat in front of the visitors' house while beer was passed round for some time. There must have been fully thirty adults assembled, and a brave show they made, every body glistening red, their faces adorned with red, blue, yellow, white and black diagrams, and every crown and feather ornament they could beg or borrow hanging on their bodies and limbs. A space was carefully swept clear of all litter or small chunks of wood just immediately before the seated crowd.

The chief had gone inside the communal house, and presently he emerged with some half dozen whips in his hand, which he ceremoniously laid out in a row. Standing up, he called out a name, whereupon a young man arose and carefully shed his every ornament, laying each on his stool. Then he walked over and selected his whip. He now stepped on the sounding board, and after stamping a couple of times called out a name. Another man now rose, stripped off his ornaments, selected his whip, and with a stamp mounted the sounding board in front of, and facing his opponent.

The first man, as challenger, grasped his whip by the two ends and raised his arms high above his head. For a second or two

the pair eyed each other, then suddenly the challenged man struck his opponent a good lash round the waist, the thong running round the back and curving round till the point hit him in the belly with a rather suggestive snap. Immediately, up went his hands above his head, and the challenger struck him a return blow in the same manner. These alternate blows were exchanged some four or five times till the Chief gave an order, when both men, throwing their whips aside, sprang well clear of the sounding board and clashed together in a wrestling match.

The Waiwai style of wrestling is practically what is known as Cumberland Style at home, although shorn of the stately approach and the manoeuvring for secure and favourable grips. Each Indian passed his left or right arm over the opposite shoulder of his opponent, passing his other arm under his opponent's arm low down on the waist, when he met and clenched his hands over the small of the back as quickly as possible. Then began a trial of strength and cunning, each trying to upset his opponent by feints or trips so as to bring the adversary to the ground with the winner on top. Some of the wrestlers missed the chance to secure a good hold - speed was a great factor - and they would be ignominously pitched in the dust. Some pairs got a good grip simultaneously and there were some exciting contests when weight, skill and other factors were equally matched. One man in the act of falling, by some feat of strength, actually whirled his opponent round and reversed their positions, thereby winning the contest. After the second match, they began to enter into the novelty of an almost

painless, whipping match, and the various challengers would call out an opponent with a series of remarks on his appearance or his tribal reputation, at which there were peals of laughter from everyone. I don't suppose such a mild exhibition had ever been given, and soon everyone entered into the fun and apparently thoroughly enjoyed himself.

So far, the Chief had taken no active part in the wrestling, but after an hour he stepped on one side and began, in a very tense silence, to take off his many ornaments preparatory to taking part. His name had not been called, and I was wondering what was going to happen. I was not long left in doubt, but my surprise may be imagined, when, after three loud sounding stamps on the board he called out, "White man ! You, the Son of the Sun, you, who have come from over the Great Water which no bird can cross, I challenge you !"

I rather gasped, but at the age of 21, I had been the best wrestler in a little glen overseas, and as I had seen nothing so far that I confidently felt I could not easily deal with successfully, I promptly rose. I selected my whip, and approached him. His hands were high in the air and I struck him a gentle lash. Up went my hands and he gave me the return - a light blow presumably, but still one that stung like the mischief through the light shirt I was wearing. We hit each other the customary number of lashes; he flung his whip away and bounded some 10 feet clear of the sounding board and whirled to meet me. I was there to meet him and being no novice I was in and got a good hold as quickly as he did. For

about two seconds, I felt as if I had hold of an oiled eel, then I received a quick thump thump, back and front, and there was the sun shining directly into my eyes ! The thump at my back was where I had hit the ground, that in front was where the Chief had fallen on top of me as I had refused to let him go, and I had been thrown as beautifully as I had ever been in my life.

I rose slowly to my feet and, Holy Smoke! what a sight I was ! I had scraped enough red paint off my opponent's body to have given a coating to the entire hull of the "Mauritania", and feeling ridiculously small indeed I sought my stool to an accompaniment of broad grins and suppressed giggles. Once seated, I called for a long cigarette and did some figuring as to what had happened.

The wrestling was now fast and furious, the Chief challenging several men in succession. These he disposed of fairly easily, but presently he almost met his match. Though he eventually grasped his man and won, it caused him to roll over and over in the dust, and when he rose he had enough earth and sand clinging to him as served my purpose. He was scarcely erect, when, whip in hand, I was on the sounding board bawling, "You red-painted, well-oiled varmint; You, Chief of the Waiwai, just step along and I'll teach you something !" No sooner said than done. The Chief met me all right, but now on vastly different terms. No longer was he covered with a quarter of an inch of oil and slippery pigment, and his coating of dust and sand made my grip secure. Swinging in what is known as a "cross-buttock", the Chief's heels described a lovely half circle and he lay, a very much surprised

Indian, prostrate on the ground at my feet. Again we wrestled, he took his fall most sportingly: and again I won. I now retired to my stool in a stony silence, but no one challenged me any more.

Medical Practice.

All Aboriginal Indians suffer from illnesses and disorders of health just as does any other race or people. With their (almost) complete isolation from all other races or types of civilization except their own, they naturally have peculiar methods of describing the various diseases from which they suffer. To even a medical man a description of the symptoms of an Indian's illness, in, say, the next village, would in the majority of cases convey absolutely nothing. An examination of such a patient would, of course, in many cases permit a diagnosis to be made. In their own peculiar way, they have discovered quite a variety of economic products that have been of great use and service to civilization, but the average Indian has little knowledge of medicine or treatment of illness generally, except a variety of counter irritants in some form or other which may or may not be beneficial. A good many illnesses are due to, or at least increased by, severe periodic constipation, yet I know of no tribe who has any knowledge of a purgative, although it is almost certain that there is some tree or shrub in their locality that would provide a laxative at least.

They rarely use a single word to denote any particular illness, except the common every day cold; smallpox and one or two others. Their various aches, pains and symptoms are described in most indefinite terms that leave much to be guessed at unless after considerable experience. Of course a "pain in his tooth", or a "pain in her head", are world wide complaints which can easily be located, but they have other complaints that baffle

diagnosis even after examination and descriptions that lead nowhere. They have a fairly common illness that takes a very baffling form which is known as "heavy foot", "heavy leg" or "heavy arm", according to which limb or part of a limb is affected. I have often had a carrier lag behind from no known cause, and when asked for the reason, has answered that his foot or leg was heavy and that he had experienced difficulty. The sufferer has no temperature; there is no swelling, neither does he limp as if in pain. Examination and comparison between the limb affected and the other show no difference to the layman's eye. They are frankly definite that they do not suffer any pain, but the person (it occurs as frequently amongst women) merely complains that the limb has a feeling of having become so heavy as to interfere with normal motion and speed. When on the march, the only thing to do is to go into camp for a day or two to allow a complete rest, or try to arrange for a substitute carrier. In severe cases, the sufferer takes to his hammock, and when necessity makes him move out, he walks with a slow dragging motion of the afflicted foot and leg as if he had a heavy weight attached to it.

The native treatment for this trouble is to scarify the limb at a point indicated by the patient as the centre of the peculiar feeling. A series of light cuts is made by the operator, sufficiently deep to cause fairly profuse bleeding, and pounded hot peppers are rubbed on as a counter irritant. The trouble is quite common, and I have often thought it was mental to a great extent, either through sheer laziness or temporary disgust at some enforced continuous and uncongenial labour. It is however

just as common in their own homes, and the women complain of the trouble as often as the men. They generally rest off at home for a week or more, and only in aggravated cases scarify the limb. I have had it occur to a most willing and devoted employee; one who refused to relinquish his work or his load, and who would crawl into camp an hour or two later than his companions.

They also suffer from an opposite form of illness generally affecting the arm or head, and occasionally the foot or leg. This is known as "light arm", etc. The symptoms are inability to deliver a blow with the required force, or to put strength into the work on hand. In "heavy hand" - or arm - they have a difficulty in raising the limb, but once up, they can deliver a normal blow. With "light arm", however, the limb comes up easily enough - too easily they say - but they cannot put force or weight into the downward stroke. Here again there are no symptoms of temperature, swelling, or otherwise, and complete rest for a few days is the only cure; scarifying is rarely, if every employed. There is nothing more annoying when marching with a minimum of food, or when employed on some important work, than to have a man or two develop either complaint. There seems so little reason for the thing; one is so helpless, yet one has to admit that it does affect the sufferer to a considerable extent in some queer unknown way.

Practically every elderly Indian carries in his shoulder bag or basket a crude instrument for the sole use of scarifying various parts of the body. Not infrequently a knife or machette "dishes", when cutting some peculiarly hard piece of wood. Dishing is an expression to denote the breaking off from the blade of a small piece of steel in a half moon shape. Such a piece of steel

is carefully treasured, but just as often any small piece of thin iron, even an inch or so off an old barrel hoop, is sharpened and used. Some men acquire quite a reputation in scarifying, either for neatness in operating, or efficiency in curing, and they always carry their instrument as they never know when they may need it. The illness never assumes a serious form, and beyond a little inconvenience, anyone at home being seized with the complaint, can await their return. Few of the younger men attempt the operation, and a woman more seldom still.

The common well known cold in the head is very prevalent amongst all Indians and probably is the primary cayse of more deaths than any other disease. In a way, the Indians dread the cold, and an old time salutation amongst the Wapichanna used to be, "Have you brought the cold ?", to any party returning after a prolonged absence, especially if they had been out to the coast. These colds are highly infectious, and spread like wild fire through the different tribes, as sufferers seldom remain quietly at home, probably due to the fact that so many colds pass off after some days with no ill effect. In every epidemic there are always a few cases, when the cold gets down to the throat and lungs, and pneumonia sets in. A bad cold generally gives a rise in temperature, probably even high fever, and very often at the uncomfortable period before it breaks and the sick party begins to perspire, he goes off and has a bath in the creek. This cools him down temporarily, but it often means a bad chill followed by lung trouble. The Indians have not the most elementary notion as to how to treat pneumonia and the case generally ends fatally.

The introduction of clothing amongst Indians largely increases their liability to chills and cold. When they go completely naked, the rain runs off and they are completely dry a few minutes after a shower, but clothes hold the rains and you can see the steam rising under the direct 180° rays of the sun for an hour afterwards. Clothes also conserve the moisture of perspiration. No harm results while the man is actively employed, but the moment he stops, the steady winds of excessive dryness at certain seasons, start rapid evaporation; the person feels very cold and he has caught a chill !

Small pox is by far the most dreaded disease known to the Indians, due largely to the large number of deaths that occur, but equally to the disfigurement of face and body and the occasional cases of blindness left in the train of every epidemic. They know of no remedy, but their dread is sufficiently strong to cause them to leave home in most cases, and to seek refuge and shelter in the depths of the forest for weeks or months, where, securely hidden away, there is a minimum danger of infection, and which is probably the wisest thing they could do. A severe epidemic must have swept through the Guianas in the '90's of the last century, for when I reached Wapichanna country, there were numerous pock marked persons and one or two who had lost one eye at least. In later years, I experienced one or two milder epidemics, although such mildness was probably dye to their prompt dispersal to the depths of the forests following their 1890 experience, and thereby limiting the ravages of the disease to a great extent.

In that serious epidemic whole villages were wiped out. Travellers who went through the districts found decaying bodies left in their hammocks and not a soul left in the village to bury them. In the Rio Negro District of Brazil there is a theory amongst many of the more ignorant Portuguese, that calcined dog dung is a specific for the disease. One man assured me that he himself recovered from a severe attack, after excessive illness had overcome his revulsion to the idea of such a nauseating remedy, and that there were no further deaths in his family after they had all been given a dose. He used solemnly to declare that he had felt considerable relief within an hour or so of beginning with the remedy.

One dry season, when I was amongst the Wapichanna, an epidemic swept through Brazil and the district I was in. The tribe promptly disappeared into the forests; every programme of work had to be abandoned, and there was nothing to do except go hunting and fishing with my one remaining boy. My old interpreter, Saik Tau, decided to visit his own tribe, the Taruma, but before starting, he ventured in to see if I wanted any trade doing on his journey, and begged for some supplies for himself. I suggested a visit to the Waiwai as a better idea and that I would go along myself, a proposal that received very prompt acceptance and off we set !

Late afternoon of our travel through savannah country, we arrived at Saik Tau's village, the last outpost of the Wapichanna, and situated at the very edge of the great forest. The

The village was composed of some 7 or 8 houses, the inmates of which had not as yet fled to hide, largely because of their isolation and remoteness from the rest of the tribe, and their proximity to the forest in case of emergency or necessity.

As we approached the village, we heard the loud peculiar wailing that generally accompanies a death. Investigation showed that during the night, just prior to our arrival, a family of Indians had arrived from Brazil with a very sick baby not more than two moons old, and that it had died a couple of hours earlier. The mother of the child was herself a daughter of the village, to which she had fled when the child took ill. We found the whole village assembled in the house and that instead of clearing off to the forest at once, they had stayed on to see what assistance they could render to the stricken strangers. There was no doubt that the child had died from smallpox and the mother, so far, had refused to part with the body of her child to have it buried. I went over to the house where the strangers were, and found a pretty little Indian woman of not more than 18 years old, sitting on a stool clutching to her breast the tiny body of her dead child - her first - and crooning as she rocked backward and forward, nay, yelling as I approached, "Oh ! my baby ! my little baby !! my little baby is dead !!!"

The child had certainly died of smallpox, and the sooner it was buried the better for everyone. As it was, the chances were that the whole village was infected. By the time the ceremony was completed, the sun had sunk, and I ordered all the youths in the village to scatter around and collect every scrap of dog dung they could find in the gathering gloom. Meanwhile,

I had got a big fire going in the centre of the clearing in the middle of the village, into which I dumped basket after basket of filth as it came to hand. After the dung had been thoroughly calcined, I withdrew the ashes and mixed them into a couple of calabashes of water. I then delivered a lecture on the potency of the medicine I had brewed, proclaiming complete immunity from the smallpox to every person who drank. I ordered Saik Tau to go round, and give a small cupful of the stuff to every person in the village, even the children. Everyone took his medicine without the slightest qualm, but I was thoroughly non-plussed when Saik Tau handed me the last cup to drink myself, in accordance with strict tribal custom. I had given him two calabashes of liquid for distribution and naturally it must be finished by no other than the person who gave it ! I wriggled out of my fix by saying that this was not beer, but medicine, and that no piaiman (medicine man) was supposed to taste any of the medicine he gave his patients !

Next morning, I ordered the Indians to disperse in the forests and then left with my carriers for the distant Waiwai. On that journey, Saik Tau took a keen delight in dosing with the same medicine every inmate of the various Taruma and Waiwai villages we visited or passed through ! More than two months later we returned to the savannahs to find the epidemic had disappeared and not one single person had suffered in that village where the child died. Even the little mother had escaped without a hint of illness, and she lived to have a family of four fine boys and girls.

Chickenpox used to go the rounds periodically also, but this they knew was not so fatal or disfiguring. They would not refrain from visiting, but would not stampede to the forests. Here again they had no remedy for the trouble except staining the entire body a lovely black with the juice of the Ghenipapa tree. One of my boys developed the disease and promptly stained himself a fine shiny black. My station was placed under strict quarantine, but a bunch of Indians arrived one day from the high forest in complete ignorance of the disease or the taboo. They gave the usual salutation just outside the house and the sick boy stepped out to reply and to see what it was all about. Now he had got to that stage when the pustules had come to a head and burst, each leaving a white mark about the size of a sixpence. Surrounded by the deep black stain, these marks gave a hideous appearance, especially as he was speckled all over with them. There was consternation amongst our visitors, the old women screaming, the babies yelling, and everybody scuttling across the savannahs shedding as they ran the papaws, potatoes and pumpkins they had brought some 40 miles to sell for some small necessity.

The Indians have definite names for only a few illnesses, and the remainder are described in rather indifferent and elastic terms of some length. Such troubles as "My tooth is hurting", or, "My wife's head is aching" can be diagnosed at once, but when a man reports his wife as "having illness", or "being sick", one is completely in the dark. Then one has to wade around

eliminating symptoms until one gets some sort of hint. Malaria comes under the vague definition "having illness", and one gets there by asking if the sufferer's"skin is hot". It is impossible for them to give anything more than their own impressions. They may not even have touched the patient and decided to say "Yes" to your question, because they sensed you expected an affirmative reply. Also in most illnesses, a rise in temperature is practically certain, thus it is very difficult to prescribe for some person living some forty miles away who is said to be "having very much sickness", and has sent messengers along for medicine. For such indefinite cases, in fact all unseen cases, I used only two prescriptions, namely very strong purgative pills, and quinine in 5 grain tablets. They could do little harm in any case and experience taught me that in a great number of cases the treatment was of great benefit.

The Indians who make contact with civilization and develop syphillis immediately coin a word of their own for the trouble. Amongst the so called "wilder" tribes who have little or no contact they are completely free from the disease. I have never known a single case that I could not trace to some connection with the outside civilized world. Just as soon as any tribe gets into touch with black or white people there seems to be a strong desire (amongst the men only) to have connection with the loose women who follow up any large scale pioneer work, mining, timber, etc, and this is generally followed by the usual results of promiscuity. I have frequently had a man develop gonorrhoea soon after leaving

the coast. When this had been disclosed the steersman would at once make for the nearest habitation or old clearing to obtain a supply of pawpaw fruit. The organs would be well washed with the squashed seed and thick soft flesh of the fruit during the day. At night a fruit would be cut in two halves and the organs introduced into the bowl like cavity of the centre. This would be fixed in position by the loin cloth so as to sleep with it in this position. In every case it proved effective and the cure was very prompt. I have never had an Indian arrive on the savannahs - about a three weeks journey - with the disease, nor was there any subsequent infection to his family. I have known women arrive on foot from Brazil who had been infected, but within a few weeks with pawpaw treatment they became well and infection never spread.

Indians generally have lice aplenty, both in the head and on the body. These are found on the small children up to the stage of puberty; on the aged and infirm and on such persons as are dirty and careless in matters of hygiene. The budding maiden and youth think it a disgrace and keep themselves scrupulously clean, but they often get reinfected from the children. The women have difficulty in keeping their long hair completely free, and I have often seen a line of some half dozen of the Taruma or Waiwai women sitting on the ground, each squatting inside the thighs of the person behind, all busy picking lice off each other's heads. When caught, they have a horrible habit of putting these vermin in the mouth and eating them. I have known a case or two of pubic lies, but these were easily killed off. A strong solution of to-

bacco and water would be made and the affected parts carefully washed with it. To eradicate lice on the head, a vegetable oil is applied and well rubbed in. The Waiwai men who keep their hair well oiled daily, very rarely have vermin in the head.

A severe case of headache amongst Indians is cured with the dagger off the tail of the Sting-ray Fish by all who are living on rivers large enough to carry these creatures. The sting is a hard tapering bone, with sharp curved saw teeth on either side, and is about 3" in length, ½" in width and 1/8" in thickness. The whole sting is covered with a dark, rather slimy substance, which causes intense agony to anyone who inadvertently gets stung. I have seen some dreadful wounds from these stings, deep open sores an inch in diameter, which have taken six to twelve months to heal. I have twice been stung myself, once slightly only, but the other time I got a direct sting on the instep, which is about the worst place. All Indians have the idea that no sting, beyond the immediate intense pain, will give much trouble if the wound is kept absolutely dry and no water or moisture allowed to touch the wound. I have repeatedly had men stung on river journeys, and I always insisted on their observing this precaution. The pain would entirely disappear and the wound would be healing nicely. After a week or ten days the Indian would step into water or go for a bath and then the trouble began all over again. The wound would simply rot away until a deep hole was left, when flesh had to grow up from the bottom. Owing to their own carelessness, I never managed to cure a man without this

open sore, although the week's observance of keeping from moisture reduced the period of convalescence to weeks instead of months. When I got stung myself I carefully observed the belief and did not allow moisture to touch the wound for some weeks. Thirty six hours after I had been stung I had no further pain, the wound closed naturally and never gave me a bit of difficulty afterwards.

The sting-ray is of little use as food although I have seen one or two Indians eat them, but they are frequently shot with the arrow as they are a menace to progress in wading along the creeks. When shot, the Indians carefully remove the sting, hang it up to dry properly and then store it away for future use by pushing it into the soft inner pith of a suitable length of the reed used for making arrow shafts. Many of the elder men carry one in their shoulder bags and certainly every village will have one or two if required. When a patient decides to try the sting-ray tail remedy as a cure for a headache, the surgeon firmly grips a fold of the skin on the selected part of the brow between the thumb and forefinger of the left hand, pulling the skin towards him at the same time. Then the sting-ray bone is forcibly pushed through both folds of the skin so held between the fingers and the forehead. After pushing through till the free end protrudes an inch or so, the sting or bone is pulled sharply back and out, and the operation is over. It takes quite a lot of force to push the sting through the two folds of skin and the subsequent pain must be more than any headache.

All Indian tribes suffer from ophthalmia, acute enough to cause partial blindness in severe cases. The infection is probably carried by the myriads of tiny flies that annoy the eyes of both man and beast, and against which there is no possible protection. For this complaint they have two cures, one being the white juice exuded when the stem of a lowgrowing, common weed, found in every garden or clearing, is broken. The other cure is to squirt human milk straight from the breast to the eye. I have gladly tried both but cannot vouch much for the cure, though there was a slight temporary relief from the intense pain. After having been caught more than once in some lonely spot with a bad attack, I carried proper medicine always. A few crystals of Sulphate of Zinc dissolved in water was the best remedy and the simplest. Most Indians used to carry a beana or two on their belts or round their necks. My beana was a tiny bottle of the sulphate hung on my belt and thus available at any moment. I have often met a man on the trail and made him cup the palm of his hand, into which I would put a drop or two of water and then dissolve a crystal or two to enable him to introduce it into the eyes. In half an hour, relief would set in, long before my carriers appeared. I had to be sparing with the crystals I gave away, as I found out the Indians began to regard them as a better charm for good luck in spotting game, than their own hot pepper water, and they would have used my whole supply as fast as I could dole it out.

In cases of biliousness and certain disorders of the stomach, most Indians have very effective emetics, generally

the bark of a tree or the roots of some plant. There are two varieties of guava peculiar to the river-beds and found nowhere else which are extensively used. These guavas are found by every forest river and up all the creeks where daylight can get in, but not on the tiny creeks of only a few feet in width. All the Indians living along a river or major creek know its use. The bark is pounded and macerated in water which is then drunk. The result is fairly quick, and the vomiting severe and continuous. Indians vomit so readily on occasion such as a drinking festival, that it is rather surprising that they know of an emetic, but I have seen the remedy used repeatedly. Tobacco macerated in water is also used to some extent, but only when no other emetic is ready to hand.

When travelling by boat on the rivers which abound with rapids and falls, and where the men had to be constantly wading and swimming in the strong rushing water for days on end, a man would occasionally develop a peculiar complaint. The sphincter muscle of the anus would completely lose its power. A man might be as active and cheery as any of the others and have no complaints to make until he told you the muscle would no longer close the orifice. A sufferer would lose condition and strength rapidly and in a few hours would have to be assisted out of or into the boat. Fortunately, the Indians knew of certain barks of trees which they would pound up and make a wad of some 2" diameter and force into the opening. Gunpowder (the old black variety) was also used when obtainable. They would ,sprinkle it freely on a

wad of wet grass and use it in the same way. The remedy must be painful as most men groan considerably for some hours. Complete rest for a week or ten days is necessary, to allow full recuperation. I have never known anyone die from the complaint. It also occurs occasionally in their own homes following exhaustion and debility caused by malaria or other sickness.

One of the cures known to the Indians is the use of the seed of the Greenheart Tree in cases of malaria. The seeds are scraped down and macerated in water and the liquid drunk. Greenheart is very local in its occurrence and none grew within reach of the Wapichanna, but in my early days amongst them every man who was sent to the coast would bring back a supply of seeds which were found in profusion about 200 miles down river. With the free distribution of quinine by Government this habit fell into almost complete abeyance. Another cure for malaria was a tea boiled from a handful of Lemon Grass of which every Indian grew a few plants. The tea is not unpleasant, with a distinct taste of lemon, and although I have tried it I cannot vouch much for its efficacy.

Most of their cures are simply counter-irritants, amongst which hot peppers in some form are the principal. Horrible stinging ants are another, as also salt or gunpowder when obtainable, rubbed into cuts made in the skin. I once had a very bad toothache when many miles from anywhere, and an old Indian persuaded me to try the seeds of a particularly virile variety of hot pepper assuring me it was a certain cure. On the principle

of trying anything once, I consented. When the old rascal poked the seeds down on the nerve with a piece of wood, I certainly had no more toothache, but I had something a darned sight worse. I suffered agony and the worst of it was the seeds were so well jammed into the tooth as to be almost impossible to get them out again. I have never tried that cure again, but strange to say, when the pain did subside, the tooth gave me no more trouble.

I had a friend who developed some sort of a rash all over his body. It itched so badly as to make sleep almost impossible. His Indians persuaded him to wash his whole body with a concoction of hot peppers and leave it to dry on. He nearly went demented and the only relief he found was to spend the night in the strong current of a small fall in the creek near which he was camping, and to allow the water to flow all over his body. He said he got some relief, but he was very positive that the cure was much worse than the disease.

Indians frequently suffer from pains along the back, particularly just over the waist line. The cure for this is scarifying with a knife and then rubbing in gunpowder if obtainable, otherwise they use salt or ordinary hot peppers. Gunpowder leaves a thin, deep, black scar and most Indians carry a series of such marks on various parts of their bodies. Scarifying may run to 6 or 8 cuts or more, all made with the accurate eye of a surgeon, each cut being equidistant, of the same depth, direction and length. These marks are never on the face, but they are made

on practically any part of the limbs and body.

Another little exhilarating counter-irritant is found in the use of stings. Wasps, scorpions and centipedes are occasionally used, either as charms for success in hunting, as tests of endurance, or as a cure for illness, but it is some vicious variety of ant that is much the more popular. It is very difficult to diagnose many of their diseases, but in this they have a complaint of pain along the back, coupled with a fairly high temperature - it may be lumbago - which always calls for ants as a remedy. One of the men of the village prepares a number of reeds of the type they use in making their basketry, and begins to weave a peculiar open-work, diamond-shaped fan. The pattern is after the style of the well known cane bottom chair. In each of the cross junctions of the various strands, he imprisons a large, fiery, stinging ant by its slender waist - all with their heads on one side of the work. To do this is a work of art, especially as the weaver is not supposed to get stung while weaving. The weaving is done in the forest, by the side of an ant's nest, and as the weaver gets ready another cross section, he deftly picks up a wandering ant between his fore-finger and thumb, inserts it properly in position and flips a strand across the opening, and the ant is beautifully imprisoned. Of course the weaver frequently gets stung, but just how often it is impossible to even guess, since the Indian considers it a sign of weakness to show any symptoms of pain. Occasionally a weaver will speak to the ant as "Hei, you !" or some short ejaculation, which denotes a sting. The plaiting in of the ants without being stung calls for great, deftness and accuracy and is

and is one of the most difficult feats to perform that I know of. The number plaited in will rarely be under 20 and may easily be double that number or more. When the article is finished, the patient rolls over to expose the part of the body to be treated, and the diamond of ants is pressed closely down on it, so that the abdomen of each ant presses against the skin. After being held in this position long enough to allow the ants to have forced their stings well home, the whole affair is gently pulled up and then applied to a new surface. The ants used are those that cannot withdraw the sting once it has been driven into the flesh, and I have often seen the skin of a patient lifted up fully a ¼" over an area of 3 square inches, when the ants were pulled away. The patient rarely shows any sign of suffering, but I have seen the younger lads grip the sides of their hammocks, or make a face. After the operation, the imprisoned ants are hung up above the patient's hammock and left there till they die when they are eventually flung away.

Puppy dogs are frequently thrown into these ant nests in the belief that it will make them better hunting dogs. The man goes stamping all round the nest until the ants come out in droves, then he drops the puppy on its back on the blackest spot of ants. At once, dozens of ants drive their stings home and the puppy races off in pain to tear them off with his teeth. A grown up hunting dog which has failed to find game for some days is frequently tied up close to a nest, and may be left for several hours, during which time the poor dog suffers agony.

The Indians have few medicines. Some roots and barks are used but it is difficult to determine if they have much actual value. They are quick to adopt any new idea from outside when strangers arrive, to supplement the little they know or have themselves. The Waiwai on my first visits used to beg for salt as medicine, an article of which they had little experience. Prior to my time, all expeditions to their country would have very little salt, but they had more than once been able to buy a teaspoonful or two from their various Taruma trader friends. It was rather pathetic to see these Waiwai headmen receive a tablespoonful from our slender supply; to watch the meticulous care after tasting a grain or two themselves, with which it was wrapped up in dried leaves and safely stored away in some safe, dry place to be used as medicine at a later date when someone became ill.

All tribes make a so-called salt, but its preparation and manufacture is slow and difficult. The Taruma and Waiwai burn the bark of various trees and then dissolve the ashes in water. This is allowed to settle for some hours, and the alkali impregnates water decanted into another earthenware vessel which is set out in the sun to hasten evaporation. After much work, I have seen a Taruma family produce a hard ball of this alkali about the size of a small orange. It entails much labour over a lengthy period, and the product, poor in quality, black or dirty grey in colour at best, is much too valuable to be used daily. In Wapichanna country there are various low lying

depressions in the land, which show a thin sprinkling of alkali crystals during the dry seasons. These crystals are scooped up with the shell of a certain river bivalve or molluse. Much soil is also scooped up, and the whole is dissolved in water also and evaporated by the sun or by boiling. Some make a grass filter which results in a purer salt. I have known a family make sixty pounds of this salt in one month of steady work. This salt is much better than the bark variety, both in taste and colour. Some of the best I have seen has been almost a pure white. With traders living amongst the Wapichanna for the last fifty years, the manufacture either from bark or collected soil has been entirely discontinued, but I knew one old lady who would never buy salt for her household. She would accept as much from her neighbours as she could beg for nothing, and every year she took her whole family to these salt licks for a month or so. If it was a good dry year, she always made a 50 to 60 pound basket.

Most Indians have a belief in the efficacy of perspiration either as an actual remedy for illness, or as a charm to ensure strength and good health to their children. A request for perspiration can be made to any healthy robust stranger, though very rarely in the case of a woman, unless it be in the case of a female child to whom they wish to transfer some well known quality from the woman. Any Indian can approach a stranger with a handful of cotton and ask for some perspiration. The person asked takes the cotton and rubs it vigorously on his bare chest and under the arm pits, after which it is carefully stored

away for future use. It was nearly always used on the tiny infants in arms and the method was to rub the little body with the cotton generally in the case of illness, or to enclose a little in a receptacle to be hung round the neck of the child. It was a fairly common request amongst the Wapichanna, and scores of women have asked me for perspiration as I was taller and larger built than the average Indian, and they wished to ensure their child having my physical ability and appearance when it grew up. The Taruma and Waiwai have repeatedly made these requests also. On my last visit amongst the Waiwai I penetrated to a remote village, none of whom had yet seen a white man. As I was leaving, the headman, cotton in hand, very hesitatingly asked me for "perspiration" to help a tiny baby which was crying continuously and was apparently far from well.

The use of steam as a curative agent is well known to most Indians and also has a place in the myths of some tribes. The Wapichanna have a tradition that a certain tiny lake in their territory held a fabulous monster which did a considerable amount of damage (death) to anyone foolish enough to go fishing in its waters. At one side there is a towering rock rising some 50 or more feet sheer from this lake or pool. During one of the exceptional droughts that are periodically experienced, the waters of this lake evaporated until only a small deep hole at the foot of the rocky mountain was left and in this the monster was confined. The tribe was summoned, and they climbed the mountain. Trees were cut down and huge fires set going around the many movable boulders

on the mountain side. When these stones were a good red heat, they were rolled down over the cliff into the water until the water became so hot that the monster died.

I know steaming was fairly common amongst the Wapichanna, generally as far as I remember, in cases of malaria, during the ague or shivering period, but I have never seen the actual operation. I, however, saw a demonstration amongst a very primitive tribe on the head waters of the Trombetas River in Brazil many days journey East of the Waiwai country. In this case a child was ill. They were too shy to ask me for help, but I had admission to the child and certainly it had a very high temperature. I gave them quinine but they decided to apply their own remedy. They secured a number of large stones measuring roughly one foot in diameter - as heavy as a full grown man could carry or roll easily to the hut. Round these stones were built large fires which were tended and kept going from morning till night. Meanwhile a small circle, about six feet in diameter, was made with wild plantain leaves. The circle had one opening sufficiently large to allow one stone to be rolled in. The walls were the full length of the leaves at one side but on the other were cuts about breast height. As soon as the sun went down, one of the hot stones was rolled in to the circle, the men using short wooden levers, as the stone was much too hot to touch. The mother then entered carrying the naked child and at once everyone in the village began carrying and pouring cold water on the stone. Enormous clouds of steam arose at once often completely hiding

mother and child from view. The mother could not stay in owing to the heat; she would come out until the steam was less scalding but as the stone cooled she would go back. The men would take the child in their hands in turn and hold it over the breast high wall at times. As one stone grew cold another was rolled up and the operation occupied fully half an hour. The poor child screamed in the most heart rending manner although I do not think it was actually scalded, but it must have been agony to its tender skin even if the men did withdraw it when they felt the heat too great. The child cried practically all night, but was quite quiet next day. Whether it received any benefit from the treatment I cannot tell, as the following afternoon I had to resume my journey and was never in the district again.
