Litany.

The litanies or set speeches at given times are similar amongst all the tribes I have met. It does not matter whether you know the language or not, so long as you speak for a certain length of time and then make an appropriate pause to allow your host to reply. I could use my own language or any other I chose with equal success in any tribe, even if they did not understand a single word. These litanies fall into four principal ones:- that on awakening in the early morning; that used at night just prior to going to sleep; that used in welcoming strangers and the wail for the dead.

In the grey dawn of day, the host comes up and asks, "Are you awake?". The reply is "Umphum! I am awake and what about you?" The host replies, "Oh yes, I am awake, but how did you sleep?". You reply as you please in a short sentence and inquire how he slept. You proceed slowly, each sentence leading a step farther until the host asks, "And of what did you dream?". Then all the dreams of the night are related on both sides. Any unusual sounds or feelings during the night are discussed, how cold or how hot it has been, how it has rained, or how the wind has blown. Two headmen from neighbouring villages can keep up this litany for an unlimited time, the conversation not infrequently relating to sexual pleasures.

The untutored Indian obeys blindly the two primary instincts of humanity. He and those dependent on him must live and even his simple requirements call for all his waking energies and skill.

He has to satisfy the needs of his family and with no assistance he must provide food somehow. His women folks do much of the planting, and also attend to the preparation of the food.

In obeying the second great law of nature, the Indian finds his greatest thrill in life. He has none of the amenities of modern civilization to divert his thoughts from the more serious problem of how to live. A drinking festival brings, at least in the earlier stages, a certain amount of mental exhilaration, which soon passes into maudlin oblivion and the morning after the night before! Sex, however, and its sane indulgence, is the high spot in his life. Unhampered by convention, or the frowns of the outside censorious world, he sees no reason why he should not discuss such pleasures with his fellows. There are no cabbage patches or rose bushes, from behind which a baby can be produced at will. "Storks" are unknown, and the child of five rainy seasons probably knows more of the technique of life, than do most youngsters of fifteen in civilized society. Everything is openly discussed and talked about in front of everyone. Quite frequently, a man who had come miles to do trade with me, would return in half an hour to notify me he could not return straight home, but would have to lie up in my guest house for some days, as his wife "was sick".

The evening litany generally commences after all food and drink has been served for the night. A last cigarette has been lit (actually made and handed to you by your host in

the best society circles) and sitting down close to your hammock, he begins to recount the doings of the day, the state of his crops, the condition of the weather, the success or the reverse in his recent hunting and any news he may have of other villages or absent friends. You, of course, answer with such news of the other villages as you may have, together with your own experience of crops, weather, etc. This may carry you on half an hour or longer, until he says, "Well, we must sleep", upon which he begins to depict every possible misfortune and calamity that his brain can conjure up. You will be told how cold it will be, how the rain will percolate through the roof, and soak you as you sleep, how the fleas will bite, and how the mosquitoes will sting. You will be told how Kenaima will walk to catch the unwary who happen to go outside the hut alone during the night. A fertile mind can keep this list of possibilities going for ten or fifteen minutes, but sooner or later comes a certain word - Naapsaifai in the Wapichanna language - which means "I have spoken", when you grunt an affirmative and gladly turn over to sleep.

It is the Reception Litany of Welcome, however, that is spun out to the longest. The host appears and asks, "Is it you?", to which you reply, "It is I". You must carry on, telling how you have come, where you have come from, how long the journey has been, and describe your various sleeping camps and other items of interest. There are definite lines of speed and method that must be followed in this speech. You begin, "It is I; I have come; I am really and truly here; I have come alone", and so on; each sentence just one step ahead of the last in idea and information. You cannot hurry

otherwise you throw the Indian's mental machinery out of gear and he is completely lost. It is step by step like a child learning its letters, and each sentence must be followed by a distinct pause before you proceed to the next, allowing your host time to grunt assent or nod his head. After a long lecture of such length as you can keep going, you suddenly say, "Are you there?". He responds in a similar manner, generally giving you the impression that he is just having a day off, and informing you what he has been doing of late. Fifteen minutes of this and he asks you a question which may lead up to the business that has brought you along, and at this stage, questions may be asked on subjects about which he wants information. You in turn question him.

Close on an hour can be spent in talking in this manner, before you have got him to see your point, and get what you've really come for placed before him. I had an old headman who always accompanied me out to the city where I secured my supplies of barter. I could send as many messages for him to come as I liked, but of no use. I had to go myself to his village, and I had to sit and yarn away fully an hour, gradually leading up to town and the joys and delights of city life with money in your pocket before the old vagabond would lean over to his listening wife to say, "Pack my traps". My success in getting him going depended on how I carried him along, and the least haste meant a wait of a day or more - time which I could often ill afford to lose.

On a subsequent occasion Fate sent me through the Waiwai country in charge of a scientific expedition. When we arrived in the Chief's village I was promptly engaged in the welcome litany by the chief himself; all the other Waiwais collected behind and offering a fine target for inspection, while the novelty of three white men at once held them spellbound in curiosity. Immediately, out came the paper and pencils of my two companions, busy making notes on any novel or striking feature or happening. I waded along through a sea of useless Wapichanna; a glance showed me the ethnological pencils were busy still, so I swung into the same theme in English. Another 15 minutes and the scientific pencils were still working overtime! I then began to count, "One - two, three - four, five, six" and so on up to 100. I then repeated the Lord's Prayer in my very best manner and ended up in a particularly sanctimonious "Ame -e-e-e-n", and turned round to encounter two wide circular mouths, and four popping goggle eyes. I had done my good deed and felt it was about time a medal or some distinction would be awarded, but my only reward was an easily sensed mental battle as to whether I was mildly insane or just pleasantly drunk.

The wail for the dead or death keening litany is a distinctly harrowing affair. One feels helpless enough anywhere in the presence of death and its consequent sorrow, still one can usually say a few words of sympathy which may help, but with these children of the forest, one feels so utterly, helplessly, tongue

tied as to look a fool. One cannot point to a life hereafter, reunion and the hope that God and time will bind the bleeding hearts of those left behind a few years longer. The Indians have a future amongst their beliefs, engendered by the sight of lost ones in their dreams at night, but they find no solace from knowing that their loved ones are now beyond all pain or care, or that they will meet again when their turn comes to cross to that other shore.

The death wail can include a whole village, or may bettaken up by only two or three people, as when a man comes along to a village where a sister resides, and there has been a death of a relative who had no part in the life of that particular village. The notice of decease is calmly given, and they begin to summarise the good qualities of the lost relative. Suddenly they burst simultaneously into violent sobbing and weeping, but not in the manner in which civilization expresses grief. They burst into high pitwhed wails, and keep repeating certain words and phrases in praise of the dead, while tears stream from their eyes. After some moments of this wail, they may stop as suddenly as they had begun, when they dry their eyes, blow their noses and continue talking in ordinary tones. Many a woman has come in to tell me of the death of husband or son. When she came to the point where the wail commenced I often wished I were at the uttermost parts of the earth instead of standing dumb before her.

The most general wailing I have ever heard was a long way East of the Waiwai country on theTrombetas Riwer in Brazil. I had come into camp beside a small stream, beyohd which lay a

village I could not enter till my guides had prepared the inhabitants for the entry of the white man. These guides were not many moments gone, when the whole village began wailing and howling for their dead, in a manner which I knew meant the death of some very important person. After several hours, the wailing stopped and I was shown to a guest house to rest. The wailing commenced again and was kept up most of the night. In a day or two I gained their confidence and learned the cause of their grief.

Several days' journey down river was an outlying village which traded with some other tribe lower down on occasions, but who were mostly very hostile. Some weeks previously, the whole village had come up to where we now were, to exchange barter and have a good time. In due course they returned by river in their corials, but one man and his family were delayed a couple of extra days as a bow of which he stood in great need was not quite finished. He also left, pushing on down river to join his fellow villagers. This he was unable to do but in rounding the last bend of the river, before arriving at his village he saw a crowd of vultures and carrion crows circling in the air just over the village. He drew in to the bank, leapt ashore, and with all the stealth at his command approached his home to find it had been razed to the ground. He then began looking for signs of his people and found where they had been ambushed, and all killed. He assured me he found the dead bodies hacked to pieces and parts had been roasted on the fire and eaten. A younger brother had some peculiarity in one leg and he found this leg with the thigh roasted, showing signs of having been bitten or gnawed. After skirting the village

carefully, he picked up tracks and eventually located a young woman of his village with her baby in her arms. She corroborated his deductions. The party had approached home in little concern only to receive a discharge of arrows. Most of the men were killed at the first shower and soon all were dead. The raid had been arranged to secure a supply of women as these were not shot. Once the men had been disposed of, the women were seized and kept prisoners. This one woman alone had managed to secure a club for defence and fought her way into the forest to escape.

The party immediately began to retrace their way to the main village up river, and had only arrived a few hours ahead of my party and had just communicated the news to their Chief. I merely give the story as it was given to me through my interpreter. I had no means of checking up the story, but their actions, the houses so carefully hidden, the twisty path to the village and the patrolling of the forests by day, showed these people were in genuine fear of a dreaded and ruthless enemy.

The scarcity of women in many of these tribes on the higher Trombetas was very noticeable, for I passed through several villages where women freely admitted having more than one husband. One unattached man accompanied me for several weeks in my wanderings, having loaned me his canoe on the express stipulation that he went with me till I again began the overland march, when he would begin the return journey alone. His one

object in life was to secure a woman as his wife by hook or by crook. I said Goodbye to him in a large village on the head waters of the Ha River where there appeared women to spare. I do not know how successful he was, but I left him the centre of considerable attention, with sufficient knives and other articles to have purchased quite half a dozen wives.

No .. 303

Implements and Tools.

I was now accepted as a friend. They watched my every movement like so many cats watching a mouse, but out of sheer curiosity rather than fear or animosity. Even the women hammering away on their cassava graters around the women's door allowed me to watch their operations without racing indoors. I was classed as a bit looney by all their canons but was apparently harmless!

There were generally half a dozen women busy making graters just outside their own door at nearly all times between dawn and dusk. Never had so much barter been available, - axes, knives, and beads, but above all, a couple of heavy hoes, of which they only possessed one or two, and which were so necessary in digging and planting operations. Much work was on hand in customary hospitals but graters must be made at all costs to secure some of the good things on sale.

In making a grater, a man selects a Simarupa tree of right size, from which he hews a short plank about 30 ins long and 15 ins wide. This board is about 3/4 in. thick at its centre, slightly reduced towards each side, and must be made slightly concave. He then draws lines in black, beginning some three or four inches from each end - See No. 1 - on the slightly concave side. This side is chosen for the working side as the slight bend tends to keep the grated cassava and resultant juice from dropping over the sides on the ground. The man now turns the wood over and draws some design (small) in the centre

of the back. This generally is a two by four inch drawing of some animal - a monkey, frog, dog, jaguar, etc, - or of a human being, almost invariably a male figure. This drawing is his "trade mark", and is really very necessary to distinguish his own property, from the time he shapes out the slab till it is handed on to someone in barter. There are always dozens of graters in a Waiwai village, and mistakes could happen quite unintentionally but with his trade mark painted on, he is always able to claim it without trouble or dispute. The grater is now handed over to a woman who gets our her supply of necessary stone and various tools.

A particular rock only can be used. It must be hard, yet when broken up should flake easily, and give sharp points. - See No. 2. The general rock of the country is gneiss or granite and the particular one in use is very rare. Two outcrops are known to the Waiwais long distances apart and several days' journey from any point in their territory. Periodically, when the supply of stone on hand becomes used up, the greater part of a village organises a hunting trip, generally to coincide with the season of ripe fruits on route, or an excess of game, to secure new supplies. All hands return laden with rocks, from mere pebbles and slivers, to chunks the size of a man's head.

The Waiwai have difficulty also in getting sandstone which is absolutely necessary for them to hone or rub their tools to a fine edge after having been blunted with use. One supply of sandstone is far to the south, but is in the territory of an unfriendly tribe, hence their main source of supply

is a mica-schist outcrop which passes through the Northern limits of the Taruma country. More than one of the Taruma visitors had brought a slab or two of this rock with them on the present occasion, which I noted found very ready sale. The Taruma have an outcrop of the rock, used for grater teeth and they make a few graters also, but somehow they seem to have lost initiative and so depend on those from the Waiwais. I know of one outcrop of this stone in Wapichanna country, where extensive operations have at some time been made, probably to be used in grater making also. The Wapichanna had long lost the art of this craft and were wholly dependent on graters of Waiwai manufacturers via the Tarumas as middlemen. This quarry in the Wapichanna country was unknown to themselves when I discovered it. Round stone hammers were found by an anthropologist, and also evidences of stone arrow points and other implements. The Wapichanna had evolved a good serviceable boat or canoe, carrying planked sides, which permitted passing up and down the rushing turbulent waters of the many rapids and cataracts between the savannahs and the coast. Every year trips were made out to the coast by the Wapichanna - 8 to 12 manning each boat - in search of salt, cutting tools, fish hooks and other necessaries which they obtained either by way of barter with hammocks, and curios, parrots, and other pets, or by their labour as huntsmen on the outlying estates, mines, or timber grants of civilization. In this way they had become the great traders of a huge district, and presumably found it easier to purchase graters

than to make them.

The tools of a Waiwai woman in making graters are a hammer of some old piece of iron, generally a few inches of a broken cutlass and a sharp instrument to pierce a hole in the board, in which to force a chip of stone when properly shaped. This tool which must be made from the thigh bone of a black spider monkey is about 7 ins long and chisel shaped at its lower end - See No. 3.

Having everything ready, the woman commences working by seizing a small chip of stone, previously broken from the mass by the heel of an axe. With the chip held securely by the extreme point of the left forefinger against the unmarked belt at the top of the board she deftly tap, tap, taps it with her iron hammer to the shape required. The nail of this forefinger often resembles horn, as it is used to guide the blow of the hammer in the right direction and to the spot requiring slight adjusting. She has already driven her bone chisel into the board at the necessary spot and to the desired length. Dropping her hammer she pulls out the chisel, then inserts into the hole the prepared chip of stone with the left hand. She has again picked up the hammer and now a gentle tap or two forces the chip firmly into the slit or hole already made, after which the operations are repeated again and again.

Now no two teeth must be in line with each other down the board, and here comes in the diagram drawn on the board. The first chip is driven in at the upper acute angle of the

outside triangular figures. The next line farther down must have two chips, as the angle is increasing, then three, four, five and so on. By inserting her first stone in each row in the diagonal line running from corner to corner she gets an automatic guide to the proper spacing - No. 4. This staggering of the stone chips is to give a proper grating surface. If put in perpendicular lines, the grating would be slower and poorer. These stone chips are driven in, working from either end of the board at a distance of not more than 1/4 inch from each other, but must never be inserted except inside, or just to the edge of the oblong square marked out. A three inch margin is left at each end and a half inch one along each side for decoration. Once the woman has forced stone chips into position to entirely fill the oblong diagram her work is finished, and she hands it to her husband. The woman's work is slow and tedious as on a large grater she has thousands of such stones to prepare and drive home.

The husband now goes off to the forest to where he knows is a peculiar tree named Karamin. He makes incisions in the bark and collects a calabashful of a white juice, of milk like consistency. Back home, he mashes several handfuls of Anatto seeds (Bixa Orellano) in the juice, until he gets the desired colour of red, when the liquid is poured on to the front of the grater. Great care is taken to work this red liquid well into the pores of the wood and such tiny crevices as are left by badly fitting stone chips. This juice forms

a hard tenacious stone like cement and the better it is worked in, the longer will be the life of the grater. Every part of the front is cemented and the extreme sides, but the back is left untouched.

The husband now gets out his black paints and begins decorating. He generally draws two straight lines at the extreme end of the board, and another close to the teeth of the grater, 1/3 or 1/2 inch apart. Between these lines is a line of carefully spaced dots in black. The three inch space intervening between these sets of lines is now filled up with drawings of various animals and men or geometrical designs, the former being much the more popular. He then repeats the decoration at the empty space at the other end of the board and connects up the two half inch empty margins on either side with a zig-zag or key pattern design. No part of the working section of the grater is decorated, except possibly where a small "trade mark" is put exactly in the centre, nor are any further designs drawn on the back.

The grater, now complete, is carefully put up on a shelf in the house, ready for use if necessary, but more generally to await a chance of a sale by barter, or some opportunity of passing it on to some distant debtor in payment of an old debt of maybe several years' standing.

The black paint used in grater and pottery decoration is seldom that used in facial painting. It is made of a pounded rock mixed with a clear, quick drying gum of certain trees. This rock is found only in small pebbles, seldom larger than a pea and never bigger than a bean. It is found in very

isolated places and in only very small quantities. I only know of two occurrences of this mineral, one in Taruma country on the head waters of the Essequebo River, where it can be found at the foot of a hill rising sheer out of the river, but only if the river is sufficiently low. The other outcrop is in the Wapichanna country, where a range of mountains known as Karawaimin derives its name from the pebble. Its rarity makes it quite an article of barter, and most of the Tarumas had a few pebbles for sale, although the Waiwais had an outcrop of their own somewhere. I have often been offered these pebbles for barter, but as they had no economic value, I rarely ever purchased any.

These black decorations wear off after some months of hard usage, but the red anatto remains almost permanently and it is a very aged grater that is free from some speck or other of red. As the red cement wears off, the stone teeth of the grater begin to drop. Some of the more handy Wapichanna will re-pitch the grater with cement at this stage, but sooner or later it becomes toothless and is discarded, generally finding its way into the fire.

Aboriginals in contact with the outside world stick one end of such a grater in a wooden box that once held manufactured goods from Europe, and with the upper end resting on the thighs, rub cassava roots up and down these stone teeth with both hands. The juice and pulp are collected in the box and go on to the other processes of baking. The Waiwais have however no boxes, but use the large sheaths that once held the

big bunches of seeds on various palms. The sheath of the Kokerite Palm is that generally used, owing to its large size, its hardness and durability.

The Waiwais make two varieties of cassava bread. One variety is the ordinary coarse bread that is made by all tribes. The cassava is washed, bark removed, grated to a pulp, put into the strainer to press out all surplus juice, sifted to a coarse flour and then cooked on a large hot plate over a fire. This bread can be eaten straight off the girdle or sun dried when it can be kept for months. In the latter state it becomes almost rocklike in hardness, and must be soaked in soup or water before the European can make much of a meal of it. If it is eaten before being sun-dried, the centre is slightly glutinous and has a tendency to stick in the gullet or along the passage to the stomach after having been swallowed. This is so insidious as to be often unnoticed by the Indians themselves who have eaten it all their lives, and the first symptom noticed is a sense of fullness after several more bites have been swallowed. All that can be done is to stop eating entirely until the natural action of the saliva helps the slow passage of the material into the stomach. The Indian may however swallow a draught of beer without knowing what has happened. The liquid beer now forces the obstruction by mere weight into a compact ball, the slow passage of which down the remainder of the gullet being a matter of extreme discomfort to excruciating pain. I will never forget my introduction to newly baked cassava bread, and the dreadful pain I experienced when I ignorantly drank a cup

of water to relieve things.

The other type of Waiwai bread requires the same process in manufacture up to the point of squeezing out the surplus juice. Instead of going on the girdle however, the meal is given a good pounding or grinding in a wooden mortar with a pestle. This gives a much finer meal and a considerable amount of evaporation goes on also. The resultant bread is of a much finer and more brittle texture than the common bread. It rather resembles oat cakes, crumbles easily when eaten at all ages, and is sweeter to the taste and more palatable. When eaten now, I have never known it to stick in the gullet. It also can be sundried and keeps well, but never goes hard like the common variety. Both types of bread become mouldy when exposed to moisture if packed away in baskets, but with a big difference in the mould. The common variety grows a blue mould, develops whiskers, and the colour may deepen into black; the peculiar Waiwai bread grows a red mould just as if it had been smeared in patches with anatto dye. Both types of mould are most objectionable to the taste, the red one being particularly vile.

The Indians make the common mortar from selected trees. A piece is junked off the tree some 2-1/2 feet in length and some 12 to 15 inches diameter. It has the bark stripped off and a 4 inches diameter hold bored about 12 to 15 inches deep from one end along the centre. This hole is bored with fire and is quite an art. A fire is made with special heat developing wood. As soon as glowing embers can be obtained, the Indian breaks off about a square inch of red hot charcoal, which he places in the

exact centre of one end of his log of wood. He has ready to hand a bamboo tube without joints of some 1/2 inch diameter and 18 inches long. Standing perpendicularly over the live ember, he commences blowing hard and steadily through the tube on to the ember, until it is almost extinguished. A new ember replaces it and more blowing is done. The intense heat soon chars a circle in the green wood which can be chipped away with a knife to assist progress, and on goes the work till the proper width, shape and depth of the hole is obtained. I have tried to make a mortar by using augers for boring, but after some distance down I found it impossible to dig out the partitions between holes, and to get the correct tapering shape at the bottom, they invariably had to be finished by the Indian method of fire - See No. 1.

A pestle is also made from a hard wood tree, one of 3 inches diameter being selected and about 8 feet long, one end of which is shaped to fit the taper of the mortar. The mortar is then sunk in a hole dug in the floor of the hut, and the earth and stones tightly rammed all round to hold the mortar perfectly rigid when in use. The mortar is so sunk as only to leave 3 to 4 inches projecting above the ground and it is always kept carefully covered up when not in use, or the pestle left standing upright in it to keep dirt and other things from falling in. The first few times a new mortar is used, they grind their hardest variety of flint, corn or maize in it. This is done to rub off any free charcoal after the boring. After some half dozen times of using, the corn meal comes out perfectly clean and can be eaten;

that mixed with charcoal being generally given to the dogs or chickens (if any). In some cases a wide ring in the head of the wooden block nearly an inch high is left an inch or so around the mortar hole proper. This serves as a cellar when grinding is in operation to retain all particles forced above the level of the mortar hole proper, and prevents their falling off on to the floor.

This type of mortar is used for corn and anything hard, even dried meat or game, that they wish to reduce to a meal or powder, but for the pulping and reducing of various fruits a much wider hole, up to say 10 inches diameter is used. This hole is generally shallow - never more than 6 inches deep - and either level at the bottom or just gently sloping in to the centre. A short - 12 to 24 inches - straight hardwood pestle is used with a knob at the business end, something like the clenched fist and arm. The pulping is done by grasping the pestle shank with both hands, lifting it a short distance in the air, and giving a series of short jabbing blows.

The pestle of the common mortar is rotated always, and only an occasional lift and jab given when it is necessary to force the pointed end further down amongst whatever is being ground. The rotatory motion is not perfectly circular, but extreme pressure against the side of the mortar at three equal distances is made as the pestle sweeps round in a circle, - No. 2 - The mortar edge acts as fulcrum and the point of the pestle with all the increased pressure pulverises the grains between itself and the side. The weight of the pestle - say 8 ft. long - tends

to press it down amongst the corn already poured into the hole. The pestle is grasped by both hands, about the shoulder height of the person using it, and must be held tight and not allowed to rotate in the hand. It sounds very simple, but try as I liked, I never could acquire the knack of quick and good grinding. A mere slip of a thin girl would chuck in a good cupful of hard corn, insert the pestle and with a few rapid, apparently careless, easy strokes would reduce it to a fine even quality of meal with every particle ground up, whereas after 5 minutes of hard work, my meal would still be coarse, mixed with free untouched particles.

A fairly common form of mortar amongst all tribes is a shallow, circular hole in a fallen tree at the edge of the clearing. This is almost generally used to reduce dried meat to a meal, and is done by pounding cut off pieces with a knob headed pestle. The meal can then be made into a porridge with some liquid. The Waiwai often served a meat porridge at dawn made from ground up meat, boiled in the juice of the cassava recovered in bread making. Meat meal mixed with salt and powdered red peppers can be served as an ordinary meal with cassava bread when it forms a change, if the game has been barbecued for days on end.

Another type of mortar in use amongst the Waiwai is wholly made from the bark of certain trees which have no disagreeable or distinctive taste. Two strips 6 inches wide and 2 feet 6 inches in length are carefully prepared. Near to the centre, two cuts - No. 3 - the exact width of the other piece of bark are made through the dry, hard, outer bark, great care being taken not to injure the pliable cambium beneath. The two pieces are laid across each

other, cambium side up - No. 4 - and the four ends pulled up until the whole arrangement forms a four square tube with one closed end. - See No. 5 - A couple of lianos are bound round and if carefully made you have a mortar that is perfectly water-tight, and in which fruit or seeds can be pulped or macerated with a short wooden pestle.

The principal use of this bark mortar is in reducing the nuts of the Mapura Palm to such consistency as will form a very pleasant and highly nourishing drink. The Mapura River is the largest stream in Waiwai country and gets its name from the large number of Mapura Palms growing in its basin. Mapura is the name of this palm in various Indian dialects - Wapichanna and Atorad for instance - but it is not the word used by the Waiwai. How the river became known all over the country by an alien name, I leave those better acquainted with languages and migrations of Aboriginals to decide. The creek up which canoes travel on leaving the Essequebo on route to the foot of the mountains which form the Southern Boundary of Guiana is recorded on all maps and known in general as Chedikar Wow or creek. Actually the name is Sheudikar Wau. The Wau means creek in Wapichanna and Sheudikar in Wapichanna is the name applied to the hard firm cylinders of pulped cassava, as it leaves the Matapi or strainer during the manufacture of cassava bread.

It is definitely known that the Wapichanna arrived in comparatively recent times via the Rio Branco in an effort to escape advancing Brazilian civilization: how by peaceful penetration, good behaviour and intermarriage, they gradually absorbed the

Atarod Tribe to complete extinction, yet here are several Rivers known by Wapichanna names, a couple of hundred miles away from the nearest Wapichanna village or territory with a long trying journey both by land and river to reach.

No .. 317

Pot-Pourri!

There must have been well over 200 people assembled in this Waiwai village, just over 150 Tarumas, including all the men, women and children, a good number of Waiwais who had come in from outlying villages, and there was the population (no mean one) of their own village. The place was packed to overflowing, and a few temporary shelters had had to be hurriedly erected on the edge of the clearing.

On my first visit to the Waiwai I had a good opportunity of making a count of the Taruma Tribe as, except the three sick members we had left, the entire tribe gradually drifted in to the Waiwai village. The total count, including some very tiny babies in arms, was 156 souls. This was in the dry season of 1905-6. At each subsequent visit their numbers rapidly decreased. At my last visit - December 1913 - the Tarumas resident on the upper Essequebo numbered only 35 persons all told. Several families had migrated to the Savannahs and had established a fair sized village amongst the Wapichanna. The reason of this migration was largely due to the number of deaths that had so reduced their numbers, as also their desire to possess axes, hoes, knives and other, now necessary, articles of daily life. All the men were working for me, about six in number, in the collection of balata. Experience showed the Taruma had very small families - a number of married couples had no children - and the average household of my men would not exceed five, giving a total count of not more than thirty

souls in the Taruma-Wapichanna village, or a gross total of 65 persons at the end of 1913; a loss by death of 91 people in seven years, which is an enormous percentage on an original number of 156 at my first count.

There was no explanation of this high rate, as the area teemed with game and wild fruit and natural supplies, which were ample to tide them over famine years when such occurred. The evidences of old abandoned villages pointed to a much larger population in the 30, 50, or 100 years prior to my first visit. The old chief - Kushar - corroborated these observations and stated that at one time the tribe had been far more numerous, but as he said "They just die".

On my first visit I saw and photographed the last communal house built by the Taruma, which had been abandoned, almost as soon as it was completed, through the death of some prominent man in the house. Afterwards they built small individual houses, not more than two such in a clearing, and the villages were often hours apart when travelling by river in a corial.

The men all dolled up in paint and feathers were Lords of all thgy surveyed, strutting around like peacocks, chatting and yarning with strangers or amongst themselves, and incidentally consuming enormous quantities of food and native beer. They were a merry, spectacular crowd, and laughter came in peals from all quarters.

Nearly every tribe has one man who is noted for his stories, wit and humorous jokes. The best raconteur I have

ever met was a man belonging to the Wapichanna tribe. In ordinary life, he was an apathetic, solemn owl of a fellow, but once the camp fires got going after dusk and people had settled down, he was a completely different being, and I have often heard him holding a whole camp of some 20 to 30 individuals completely spellbound for the evening. The women would stop spinning, with one hand held aloft; the men would quit such work as they were doing, and swing round to watch and listen the better; all open mouthed, absolutely silent, and completely carried away. The raconteur was yarning away, and gradually a vibrant excitement crept into his utterances as if he were just on the point of bursting with laughter. Then the point of the joke would come in one last telling sentence, when everyone would break into prolonged peals of laughter - the story-teller laughing as heartily as any one. I had him in a camp for some weeks and he used to start story-telling two or three times a week. He had the art of explaining everything necessary during the story, always ending in a crisp sentence that brought the house down, and he never had to add or explain anything afterwards. I was new to the country, and knew little of the language, so could not follow these stories, but as far as I could gather, most of the jokes centred round simple happenings in the hunt, or silly accidents to others.

Our old friend, Mabba Tiu, was apparently the Taruma jester or storyteller, and nearly every day he would sit out in the clearing with a deep ring of Taruma and Waiwai men doubled up in laughter every few moments. Mabba Tiu was more

of a humorist than a storyteller. He kept up a rapid fire of remarks, at which everybody laughed uproariously nearly all the time, and such laughter never came after a long description followed by a tense final sentence. A good amount of his wit was at my expense I found out, - describing actions of mine which were in some ways different from their own, as how I had trodden on a dead fallen branch of a tree which broke with a loud snap under my weight, and how he had jumped "so high" in sudden fear that some big game had crept up unnoticed and was springing to seize him.

The women, unfortunately, had no time for a holiday or to deck themselves up in their Sunday best. On them fell the duty of providing food for the crowd. Cassava breadmaking was in full swing the whole day, and work was often going on in the dark. There were also enormous quantities of beer to be brewed, and much cooking to be done. There was a steady stream of women going off to the fields, returning heavily laden with cassava tubers, vegetables and fruit. All the stranger women had to work equally hard. The Tarumas had one clear day of rest, on arriving, after which they had to cook and bake for their men folk. A couple of Waiwai women returning from the fields would dump their loads in the guest house and the Taruma women had to get busy. On other days, the Tarumas had to go for their own supplies in some of the various fields.

Nearly every string of women who went to the fields had a man or two accompanying them. I got out my two men and went

along to see the operations. The fields presented no novelty either in appearance or in the variety of plants, except for their size which was much greater than anything I had seen in any other tribe. We went principally for cassava, and the modus operandi seemed to be for the women to dig out the cassava roots, while the men dug up the part cleared, replanting foot long cuttings of cassava stick cut by the women in removing the roots, so as to ensure a new crop next year. I found the workers had only one hoe amongst them, in fact there were only a couple of known hoes in the whole Waiwai tribe, all worn down to about 1/3 of their proper size. Digging operations were done by hard wood poles sharpened to a chisel point. These poles were used by both the women and men. Very old axes, no longer capable of being sharpened up, and of little use for anything else, were also used. The greater part of the digging was done by these wooden chisels and was a slow laborious job. I made it a point to bring hoes along on my subsequent visits, but these were not enough to go round. Axes they must have at all costs, to throw down the trees preparatory to house and field making, but hoes, although in great demand, could be done without. I was told that in the old days when iron was almost completely unknown, their sagas gave it that fire was made round each tree and as it burned, the charred parts were chipped away by stone axes to hasten felling. Up to the very last visit amongst the Waiwai, when my party was asked to assist in planting operations in a new field, most of our men used hard wood poles for digging the necessary holes in the ground.

The Waiwais had shot large quantities of game in anti-

cipation of the Taruma visitation, but this did not last very long when so many hungry people had arrived. The barbecues soon became empty and must be refilled if possible, or at least the pots kept boiling. Every day parties of men went out hunting, and generally returned with good success. The chiefs and elderly men stayed in camp, but the younger men were out almost daily and often all day. When these parties returned, part of the game secured was invariably turned over to the Tarumas for their use. My particular party, void of women folk, was the particular care of Kiwinik and his wives. We were given the choice of what we wanted and right royally we fared.

The Tarumas had also to turn out hunting, and I got out my gang also. When I went out, Kiwinik and one or two of his headmen always went with me. They knew the forests and where game was most likely to be found. The Waiwais had only bows and arrows and a large knife or cutlass as arms but they were very efficient with these. I was walking immediately behind Kiwinik one day when we put up a flock of powis birds. We raced ahead to get under them as they hopped and flew from branch to branch in an attempt to clear the dense forest and escape. We got a good chance in an open space, and up went my gun, - a matter of a second or two only - and down came my bird. Two powis thudded almost simultaneously on the ground. Kiwinik had got his bird also, with his bow and arrow.

We had a few hunting dogs with us always and very efficient they proved. Almost every hunt met hogs and these the dogs

would either bring to bay, or force to take shelter in a hole either in the earth or a tree. Once brought to bay, an arrow tipped with Makabur - the Taruma and Waiwai variety of the Ouralli poison - was driven home and in a few moments the hog was on its way - pick-a-back - to the village. A poisoned arrow was used in preference, as the hog is a large and strong animal. Unless an arrow pierced a very vital spot, which was most unlikely in a fighting squirming mass of pigs and dogs, it meant more arrows to be used, all of which would undoubtedly be broken beyond repair. The poisoned arrow has a detatchable head; the shaft might drop clear and could be used again, and once a single poisoned arrow had pierced the body, it was only a matter of seconds before the pig went to sleep from the poison.

Pigs which seek shelter in any hole, soon realize their cramped position, and if the hunter is not on the spot pretty promptly will be off for a new shelter. When found in a hole, the hunters very promptly barricade all exits and then set to work to make a cage to secure the animal. This is done with 2" diameter saplings about 12 ft long, lashed and secured with bushe rope to form an open work tube with both ends open. (See drawings). One end is supported well off the ground, the other placed over the hole. The Barricade is removed and the pig rushes out at once and up the tube. His feet however slip between the open work slate when he becomes helpless and can be speared at leisure.

I was surprised to find the Waiwais made use of shooting butts in their hunting. They were generally on rising and undula-

ting ground, where a good view could be obtained in front, or where fruit was in season which would attract game as it fell on the ground. I found these butts invariably arranged at the junction of two creeks. We would creep silently down a shallow or dry creek, the dogs having been leashed and held by someone behind, until we came to some natural cover such as a large bole of a fallen tree, or a tangle of bush-rope. We crept out under shelter of this to a screen or butt made of branches so arranged that the hunter was hidden while he had a clear view in front. If any game was there, it was shot, but if nothing appeared the huntsman began imitating the call of all such animals and birds as were fond of that particular fruit. If nothing answered, his luck was against him when he would move on, or wait as he cared. It was only a question of time before the game must come to feed, generally in the early morning or late evening. Most of these butts were mere temporary screens, and often we stopped to erect a new one at a suitable spot. Others did the same, and when they got back home told of their whereabouts so that other hunters could visit them also. One day I was out alone with Kiwinik and one of his men, when we heard the crowing of powis. Rapidly breaking off branches and saplings they soon formed a screen round the party. They then began crowing in imitation and soon a powis trotted forward to fall to an arrow, then another and another, till four had been shot. I took no part in the shooting at Kiwinik's special request, and I now saw the reason why. Had I fired at the first bird, the others would

have fled from the report, and here we had bagged four birds in place of one.

I had heard of an unusual method of shooting monkeys, and one day I got Kiwinik to stage a demonstration. On the first streak of dawn every able man and boy was sent off into the forests - the Tarumas also. Kiwinik and a couple of his men remained to escort myself and men to the scene of final operations. The sun was well up before he gave the signal to start and even then we did not hurry, as we followed a well beaten trail over the slightly undulating country. Presently we began climbing, and I realised we were entering a high range of mountains. We topped a ridge when we heard shouts and cries from the plain. Immediately Kiwinik shouted, "We must hurry or we will be too late", and bounded up another slope like an antelope. We were soon climbing almost perpendicularly and accustomed as we were to only the level plains, we soon got out of breath and were left behind. The yells beneath us were increasing in number and volume, and our Chief was dancing in excitement and urging us to hurry. It was all right for him, but we were in bad shape, old Saik Tau especially. At last we made the crest of the mountain, and the Chief and I raced ahead. The forest cleared in front and the Chief pointed excitedly, and I saw troops of monkeys against the skyline running up a few large bush-ropes apparently out of the ground and going into the tree tops overhead. We rushed forward, but the last monkey had just passed up, the bush-rope quivering and shaking with his movements, within touching distance of our

hand.

I now found we had come out on a sheer precipice some 60 to 100 or more feet high, extending along the whole side of a mountain. This was bare, bald rock, unclimable at any point except just where we stood. The drop was not so great at our feet, and some half dozen stout, strong bush-ropes, touching the edge in front of us disappeared amongst the tree tops below us.

The men who had left camp at dawn had surrounded a large area of the lower plain, and advancing in a long thin line, had with their yells and noise of all kinds driven forward such troupes of monkeys as they came across. These they gradually forced up to the face of the escarpment, centring on the point where we now stood. Rather than face the closing ring of yelling humans, the monkeys had seized the bush-ropes to scramble up to safety - as it proved in this case. Had we been a few moments earlier, it would have been a different tale. Bows and arrows were not needed: all the Indian had to do was to seize a club, a few of which lay scattered around at our feet, and hit each monkey over the head as it climbed over the edge.

Saik Tau got the blame for our being late at the rendezvous, and as he was second man there was some truth in it. He was subjected to much ridicule after our return to camp, but I am afraid it was water on a duck's back, and Saik Tau had a thick skin as none knew better than I!

Fortunately the monkeys were not in season at this time and no very great loss was sustained. The hunt had only been staged for my particular benefit. It was the Red Howler and Black

Spider variety of monkey that was hunted in this way. When these monkeys are properly fat they are considered quite a delicacy and are eagerly hunted and shot by all tribes. When they are not fat and out of season, they are only shot and eaten as a last resort, when bad luck or poor shooting fails to fill the pot. During the season, Kiwinik assured me it was the Waiwai custom to stage one or two shoots of these monkeys in the manner shown me and they never failed to secure them in numbers. After a smoke and a rest Kiwinik shouted orders to his men below to disperse and to hunt as each liked on the way back to the village. In this they were very successful, and we also got some game on our return journey.

Most of the Indian tribes have a wholesale respect, if not active fear of the jaguar and the other larger species of the feline tribe. The Macussi and Wapichanna populate large deep pools with a jaguar of supernatural size and power. Every woman must lie up "when sick", as a passing brute would smell her tracks, and pain, illness and even disaster might result. No self-respecting Wapichanna will kill a jaguar even with the inducement of a five dollar cash reward attached, as the spirit of the beast will most certainly retaliate, probably on an unborn baby, a child, or other helpless dependent. A few of the old men claimed the reward I used to offer, but there was much shaking of heads, and "Wait and see", or a very definite "I told you so", if a relative fell ill or died - probably a year later !

The Waiwais had, I found, no fear of any of the forest

cats. Round nearly every man's waist was a silk-grass cord, on which were strung a few of their canine teeth or tusks, so arranged that they stuck out immediately over the hip joints. I found that every youth had singlehanded to kill a jaguar - the bigger, the better - before he could acquire full manhood status. The Waiwai admit danger from these beasts when wounded or cornered but attribute no supernatural power to their killing, either to the hunter himself or his more helpless dependents. Any man may kill them although after they have passed into official manhood, few men actually do, unless in defence of their dogs or themselves. When the youth kills his jaguar, the eye teeth are carefully cut out entirely, a tiny hole is drilled at the extreme root point, a string is threaded through and he wears it as a belt. A haka tiger - one of the smaller variety of wild cats - is generally shot first, the larger animal being killed later, after he has acquired a little more confidence. In most cases, the belt carries 6 teeth over each hip, two large jaguar ones in the centre, flanked by two on each side from some of the smaller cats, showing he has killed 2 haka or labba tigers and 1 jaguar or puma.

When we went hunting, the men left all their ornaments behind either in the village or at a convenient spot near by in the forests. Even the fancy new lap or loin cloth would be exchanged for the older working one, as the fewer feathers or gawgaws they were the better while slipping through the dense undergrowth of the forests. Yet on occasions they could race through the forest with all their fancy dress. The hardest

sprint I have ever done was following Yufune (after Kiwinik's death) in a mad race to overtake a herd of hogs which passed almost through our camp and to secure which he had no time to undress. When we finished, I was quite breathless, but he wasn't even panting and hadn't lost a feather!

I found that the Waiwais had actually three types of dress; the full ceremonial dress on state or great occasions; the working dress, and the one they slept in. The ceremonial dress is an indication of the owner's status, his wealth and above all, his prowess as a huntsman. The youth just entering manhood has to shoot every feather he wears, and it takes him some years before he gets enough to make all the variety of ornaments necessary. He cannot devote his whole time to hunting. He has to cut, burn and plant a field, and assist the village in all communal work. He has his own arms and ornaments to make and countless other duties, so that it is generally not until a man is well over 20 years of age that he can become one of the dandies of his tribe.

The working dress is the plainest possible. The hair tube is worn at all times, but an unfeathered plain one only when working. The mollusk ear rings will be retained, but their tassels are taken off, and the same goes on over every part. The left arm is conspicuously free from all ornaments, especially below the wrist, so as to offer no impediment to the return of the drawn bowstring after firing an arrow. Just above the biceps of the left arm, a band of gum is universally worn to ensure steadiness of aim and strength to extend more easily their enormous bows, often fully

8 ft long. This band of gum - very like an elastic band - is frequently covered with a long string of white or coloured glass beads. The right arm is generally denuded also, but not to the same extent, their bracelets made from the hard outer shell of the Brazil nut and a band of beads at the wrist and above the biceps generally being retained.

The pyjamas or sleeping dress is confined to a minimum of ornaments on the body also, and the lap is also taken off in most cases. Underneath his various belts and laps, the Waiwai wears a single cotton yarn,cord about as thick as a thin pencil round the waist. It is worn rather loosely, and the left testicle is passed up between it and the body to hang over in front. Behind this, the penis is snugly tucked out of sight. Standing naked otherwise than with this string, the Waiwai men are in no way ashamed, as it is their national dress of tradition - probably as a relic of the days when bark laps were those in sole use - but should the penis become exposed to view, he is at once completely overwhelmed with shame, as would be his European compeer in similar circumstances.

The Waiwai women wear the minimum of dress at all times except when there is a dance on: a bead lap hanging in front from the waist downwards for some 8 to 12 inches, the shell fish ear-rings and the rolls of beads round arms, legs and neck being the general custom. The Waiwai women showed little embarrassment or shame, if, for a moment, their whole person were exposed to view. I was very much surprised at this, when I met it first, as most Indian women are intensely shy. I had

gone down alone to the creek to bathe one day and had just undressed, when hearing voices I dived into the water. It was a fine deep pool of crystal clear water. There emerged from the road a couple of the young village maids with goobies to carry up water on their return. These they filled and set aside, and began to lay off their ornaments as they evidently required a bath after the work of grating cassava all day. Pulling the slip string of their bead laps they stood a second or two, their whole bodies completely exposed to view, before they dived into the water. After swimming around a while and giving their bodies a good rubbing over in the shallows, by way of removing any dirt, they stood up on the rocks again within a few feet of me perfectly nude, while wringing the water from their long hair. Eventually donning their laps, they picked up their water gourds and disappeared. They had no more immoral ideas in their heads than a child of seven. They had beautiful bodies, and they knew it, but why be ashamed of God's most beautiful gift, a perfect body ? Few of the maids of any tribe between the age of puberty and motherhood require adjuncts to allure the admiration of the opposite sex. They possess curves, agility, grace and verve which are their natural and greatest charm. It is only when civilization gets a foothold that aids to beauty are brought into play, and then too often comes vice as well.

Hunting amongst the Waiwai in season of good fruit-bearing, becomes more play than anything else, especially, as now, when a crowd of visitors was around and all work, except the very necessary, had been stopped in their honour. The Mapura valley

is broad and fertile, and hemmed in toward its sources by high and often precipitous mountains, it forms a sort of converging funnel, in which congregate the various flocks and herds of game from the plains, extending away South East as far as the Amazon. When I went out shooting at first, the Waiwais were rather frightened of the report of the gun. On no account would they even touch anything shot. My own men had to pick it up and carry the game home, nor would they taste anything when cooked. No Waiwai would accept any game shot with a gun, and when we got more than enough for our small requirements, the balance went to the Tarumas who accepted it readily enough. On our return journey a few days later over the mountain range where we had been so hungry, we started off with a good supply of dried game. I had however to get considerable assistance to help my own men in carrying all the stuff we had bought between us. Again we fared badly in the way of game and our supply ran down. We got back to where we had sunk our corials at the landing, pretty hungry so far as meat went, as also our dozen Waiwai carriers. Cassava in any form is not satisfying if eaten alone over a lengthy period of persistent hard labour. I however shot a hog within a short distance of the landing, and Kiwinik's father who was with us in charge of the Waiwai party, timidly suggested that they would try to make a meal of the entrails, liver and lungs. He said these lay well inside the animal, and could not be affected by the powerful weapon, the noise or the visible fire or smoke on a discharge.

It took several visits before the Waiwais became accustomed to a gun, and even up to the last they were very diffident about eating game killed with one. On my last visit, out hunting with Yufuno along the foot-hills of the mountains, I got a chance of a good flying shot - a very rare occurrence indeed in the forests - at some macaws flying along a ravine. I brought down two with the gun, very much to the concern of the Waiwais, who had never even dreamed of trying such a trick with the bow and arrow and did not believe it possible.

No .. 334

Beer ! Glorious Beer !!

Practically every tribe of Aboriginals has some peculiar national alcoholic drink. The Macussi have their Kassiri made from sweet potatoes; the Wapichanna have Parakarri made from cassava and the Waiwais their Bashida, made from cassava also.

There are dozens of varieties of drink made from other sources and every Indian can make most, if not all of these, as well as his national beverage. Strong drink can be made from cassava, yams, sweet potatoes, Indian corn, juice of sugar cane, pineapples, bananas, the fruit of the Kashu tree, various other fruits of the forest and almost anything that contains a fair amount of starch.

Kassiri is made from the edible tubers of the sweet potato, a peculiar pink fleshed variety only being used, which imparts the characteristic red hue to the beer. The tubers, after being well washed and cleaned, are boiled in large quantities and mashed down to the consistency of ordinary porridge. This pulp is set aside to cool, after which a number of women begin chewing mouthfuls and ejecting it back into the same pot or a special bowl when they consider each mouthful has been properly mixed with saliva. When enough porridge has been sufficiently chewed, the bowlfuls are returned to the parent pot, and the whole thing well stirred to ensure proper mixing. In about 24 hours, water is added to dilute the beer to its desired density, after which it can be drunk, although it does not generally ripen completely under 36 to 48 hours.

The Indians have no means of procuring yeast to start the necessary formentation in beer making, but they all seem to know that saliva will do the trick. I do not know of any more revolting sight than half a dozen old women squatting round a large pot, chewing away for dear life, and spitting each mouthful back into what you know will be handed to you as drink the day after to-morrow.

It is by no means every girl, maid or woman who can successfully make beer. Experience and reputation must be gained. The younger females of a village may be allowed to chew a few mouthfuls, but those responsible for its potency and bouquet are generally old women. Amongst the Wapichanna, no woman can make beer properly unless she has had tattoo marks done in a line from the corner of the mouth along each cheek, like this -------, or on the upper and lower lip. These marks must be black, and although various forms of soot can be used, by far the most popular as also the most efficient, is soot made from burning sugar cane peelings under an inverted pot. The maids generally prefer to keep their mouths unmarked, and the tattooing is rarely done before the first or second child has been weaned.

Careful observations of minor details in the brewing are, of course, reasons for the better brews, skill to acquite which may require years of trial and error in addition to instructions and hints from outsiders. Thus a woman may be quite old before she gains a reputation, for almost invariably she has to wait for years, until a previously recognised expert has departed for pastures new. Every maid learns the trade, but her brew must

be insipid and only for limited use. Every wife must of course brew her husband's beer and such as he may require in hospitality, but it may be years before she attains the skill or reputation to conduct a village Paiwarri (drinking feast).

Most of the various brands of beer brewed by the Indians have this repulsive form of chewing employed, to introduce saliva to break down the grains of starch. Pure juice from the sugar cane pressed out by simple hand processes, soon begins to ferment on its own account and there are one or two fruit drinks that do not need mastication to induce fermentation.

The Parakarri of the Wapichannasis made from cassava and never chewed. They follow the ordinary processes as in bread-making but a much hotter fire is used under the girdle or baking pan and the cakes of bread are much thicker. This rapid firing causes an outside skin to form quickly, and leaves a good half inch in the centre of partially baked glutinous dough. A part of the floor of the hut has been well covered with banana leaves in a quiet spot as secluded from light and air as possible. On these leaves, the cassava cakes are thrown as they come off the baking pan. The cakes are laid over a space of 6 to 10 ft diameter according to the size of the brew required, and piled to a depth of some 6". Then the leaves of a shrub are scattered over the top, just a couple of handfuls, together withthe flowers and the setting fruit of the same plant. The whole thing is now covered with banana leaves to exclude air and light, and allowed to ripen. In two to three days' time, a fungus

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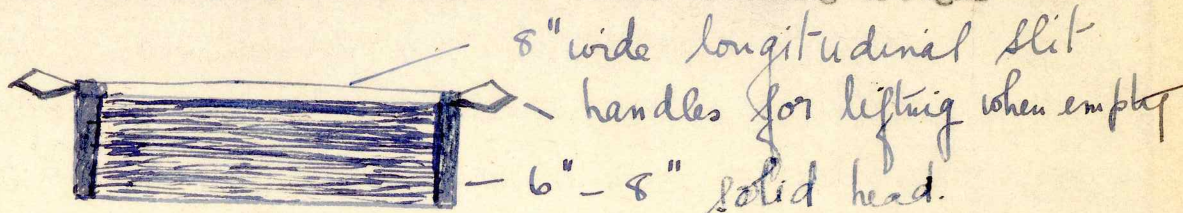
has begun to grow on the bread, very like ordinary mould, and all the cakes become almost one large mass of soft fermenting matter. This mass is tasted every few hours and when it is decided fermentation is correct, the whole mass is macerated in pots with a quantity of water. It is then put through fine mesh sieves to ensure against lumpiness, and is at once thrown into the huge dugouts kept specially for the purpose. Large quantities of water are now added, it is then covered up and allowed to ripen for another 12 to 24 hours, when the visitors begin to assemble and the festival begins.

I do not know the botanical name of the shrub necessary to induce fermentation, but it is quite common. Only a half dozen twigs or so are required, but they must have blossom and young fruit.

The beer troughs are made from the bole of the Silk Cotton tree, and may be any length up to 12 ft long. A handy diameter is anything between 3 to 4 ft. In junking out the piece selected, care is taken to provide for a projecting lug or handle at each end. A longitudinal slit of some 8" wide is made along the top, about 8" from the end proper, and the whole centre is dug out leaving some 2" of wood as a skin. The digging is done with cutlasses, axes and such tools as they have. The wood is soft, more like hard pith and easily worked. It is now allowed to dry, and a fire is made inside, generally with some of the dug out pith after being dried. This burns easily, but with no great heat. The object is to char off all splinters on the sides and

so present no danger to the women's hands when they reach to dip out beer at low levels. The form of these drinking troughs is:-



These troughs are very light when dry and can be picked up by two people if empty.

I have known Indians roll a Silk Cotton log for miles across the savannahs to their houses to be dug out eventually as a beer holder.

After the fire, the ashes are tipped out, the sides rubbed to remove any points, but charcoal does not poison so why worry ! I have often seen a first or second brew with quite a lot of charcoal floating around in the bear when being served, but it is quite immaterial!

The Wapichanna have a peculiar custom at one of their drinking festivals. The beer belongs to a certain head man who issues the invitations, but wrestling is indulged in outside the house as the various visitors arrive, and if one of these can enter the house without being overcome, the drink belongs to him and he becomes master of ceremonies at the revel. The owner of the drink can arrange a guard to assist him and generally all the village or chosen relatives form the guard. In wrestling, the object is not to throw the opponent on the ground, but to lift him bodily off the ground till both feet are no longer touching. The favourite method is to get the opponent on to one shoulder and then carry him a yard or two, when the victor

contests with someone else. I have never seen a drink so won although I have heard of occasions when it passed to the visitors. I once saw one very powerful Indian who threw one after another of his hosts, until they all turned on him like a lot of terriers and he was raised clear of the ground.

I was at one such drink by accident, and we were all sitting outside in the shade of the house, the guard lined up around and in front of the men's door when a large contingent arrived from a neighbouring village. About a quarter of a mile away, they gave their tribal yell and started racing towards the house. When about 30 yards away the guard rushed forward, slapping their chests with one hand and shouting "To me, to me", as they singled out opponents. There was one small stripling of a youth, whom no one thought worthy of his steel. He kept on running and presently realised he was inside the guard. He dived for the door yelling, "The beer is mine, the beer is mine", but -- ! Two old crones had come out of the men's door to watch the excitement and they now pounced for the youth calling loudly for help. The youth flung one old lady from his path, but the second got a secure hold of his lap from behind and held on. His belt broke, the lap came away in the old lady's clutches, but he continued for that door in his birthday suit. Other eyes had been watching inside the house also, and now, like a flock of hornets, out came a bevy of hefty maids and young women, who seized the naked boy and tossed him ignominiously again and again. Everybody went into fits of almost hysterical laughter. It was considered a great joke, and for weeks served as the stock entertainment of the whole

tribe.

In appearance Indian beer is very unlike the variety known to civilization. Instead of being a limpid amber beverage it has about the consistency of thick pea soup with a range of colour from red to orange with a puddley brown in preponderance. At its best point of ripeness, it is slightly acid, and after a walk of hours under the broiling sun and no water, it is a most efficient thirst quencher. It also supplies considerable food for digestion and tides over a weary hour for the hungry hunter or traveller, while waiting for a meal to be cooked. Beer made from sugar cane is a ciderlike beverage, but cane cannot be grown in sufficient quantities to provide enough beer to fill their huge drink troughs, and it is generally added to other cassava brews to increase their potency.

When the beer is resting in the trough, the alcoholic part tends to accumulate on the surface, and generally has to be well stirred before being served. By the time a man has drunk a large calabashful, much of the cassava grain has sunk to the bottom, and the last third to be drunk, is a thick gruel, a good part of which is often surreptitiously thrown away. If, however, the women wish to make anyone quickly drunk, they carefully skim off the thin watery layer containing much alcohol at the top of the trough and hand it out. A few small calabashfuls (cupfuls) of this will soon bowl over the most hardened drinker.

At a big piwarri or drink, the women hand out the beer. Each woman has a big bowl of beer in one hand, but she serves it to the guest in a smaller calabash, never handing out more at once than a small teacupful. The Wapichanna women in strict etiquette

should hand out a succession of three such drinks to the same person, but never more. The visitor should and often does hand her an equal number of drinks, which he dips from the large calabash in the woman's hand, as he drains each cupful handed to him. The man must drink the three calabashfuls handed to him, and so must the woman if he returns the compliment. She is however serving drinks to all and sundry and if each guest she approaches hands her the complimentary three she is quickly on the fair way to becoming drunk. Generally the women take it in turn, even the little girls have to serve, otherwise they would soon all be helpless.

The men soon become quite merry and hilarious, but this soon gives way to the cantankerous, quarrelsome stage, and then they pass on to the maudlin, sleepy state when they generally go to sleep for some hours. Dancing is the invariable accompaniment to a piwarri, which may be kept up half the day and all night. They are never all at the sleepy silly stage at the same time, and so keep it up in relays. The leader of the dance is a man of note, either from his ability in the art or for his singing, and must carry on dancing until he becomes either physically incapable of further prancing and foot pounding on the floor, or is hopelessly drunk.

The national beer of the Waiwais, Bashida, is made very much on the same lines as the Parakarri of the Wapichanna, but I have never seen it made. They either use some other herbs in starting formentation, or there is some difference somewhere in the manufacture, as its taste and certain properties are different. It has about the same potency and effect as Parakarri but is much

sweeter and more agreeable to the European taste. At some proper point in the fermentation stage of the covered bread cakes, they put it up in rolls some 2 - 3" diameter and up to 2 ft in length. These are covered with the leaf of a certain palm and secured with bush-rope. These palms are low growing with each leaf entire and not split up into scores of separate fronds. I have carried Bashida from the Waiwai country for many days overland when put up in this form and invariably found it kept its properties to the last, being still agreeable to the taste and with a fair amount of kick left. The parakarri on the other hand must be used up once a definite maximum of fermentation has been reached, otherwise acetic fermentation begins when it soon becomes so acid that it must be thrown away.

No self respecting villager will willingly be out of beer at any time, and there is generally some variety on hand in a goobi of say two gallon capacity. This is for the use of the passing stranger or visitor who may drop in unannounced. Strict Wapichanna etiquette demands that the newly arrived guest must be handed a drink as soon as is convenient or possible after beginning the arrival litany with some male member of the house. A calabash of beer is handed out, its size depending either on the supplies to hand or the number of visitors. If no beer is on hand some substitute must be found. A favourite one is to macerate ripe bananas with the bare hand in a quantity of water in a calabash. They may soak a couple of handfuls of farina in water, or a few squares of bread, or some fruit which happens to be in season. In no case will pure water be handed out. It can be obtained if asked for, but it is not a proper beverage to greet a

guest with. As can happen occasionally one may reach a hut which, at the moment, can turn out no drink of any kind, and it is a very shamefaced housewife who comes out to apologise - as apologise she must.

It is also very bad form not to present a drink of beer at the conclusion of any meal. The men folks may go out to the fields, hunting, fishing, or to other various duties and may return singly and at any hour. Each must have food set out as he arrives and be given a calabash of drink when finished. Woe betide the wife who cannot beg, borrow or steal some liquid refreshment, if only a tiny cupful, at such times as she has been too busy to attend to her own supply. There will be a lot of surly remarks about her inefficiency and laziness, and sarcastic comparisons with some other neighbouring housewife. All Indians are very sensitive to criticism or ridicule, and I have known many a woman retire to her hammock sobbing silently at such times - silently, because if she made the slightest noise she might get more or worse - a thrashing.

I have never seen drunkenness amongst the Waiwai. I have seen them get quite merry at times, but they all seemed to have the sense to stop or disappear before the quarrelsome stage set in. I have seen their guests well intoxicated, but never themselves. I have sometimes wondered if this abstemiousness was due to their whipping matches which is the general way of settling any quarrel. There is no doubt about the severe intense pain and days of subsequent discomfort following even a mild whipping, and much worse when the passions are roused.

In hard times when food supplies are low, the quantities of beer consumed may have to be small, but in average times each man

will consume a gallon or more per day. It is only at a drink that he takes enough beer to affect the system in any way. He has his drink after meals just as a European may have his glass of water or a cup of tea, but on no account must an Indian get drunk alone. This would be a disgrace and a slur on their socialistic communal principles.

A single visitor, if only from a hut on the adjacent piece of rising ground, is sufficient excuse to get drunk if possible. It is however at their festivals, when great preparations have been made, that an Indian can indulge to excess. At such times, great quantities are drunk. They drink to repletion and then regurgitate, and go on in this alternative performance as long as the physique will stand it. I abhor an Indian drinking festival and would go miles to evade one. You must drink what is offered; it simply cannot be refused, and pretending to be asleep is no excuse, as after an hour or so of rest, they will wake you up. In open grassland with no cover anywhere, you cannot escape as can be done in the forests.

Their drinking festivals may be pure hospitality only, but often a man wishes to become thoroughly drunk, so he throws a party. They can also be got up to welcome members of the village who have been absent at work for some time elsewhere, or any excuse may serve. Then there is the working festival. A man may want to underbrush a field and cut down the forest; he may want help in making a canoe or building a new hut, so he invites all his neighbours to come along on a certain day. Prior to the date arranged, he scours the country for game and the

women are busy baking cassava and brewing beer for the benefit of the workers. Soon after daylight on the day fixed the neighbours begin to arrive. The men and boys generally go straight to the scene of working operations, while the women make for the village to assist in the baking, brewing and various other duties. The men work steadily with a short rest and a meal towards noon. By 2 p.m. the work may be finished but on no account do they work later than 4 p.m. Everybody has a good bath, puts on fancy dress or best clothes, and makes for the host's hut. A good meal is served at once, drink circulating freely also. Actually, they rarely eat much for the prudent housewife plies them with beer as fast as it can be drunk, and in this way she conserves both bread and game for another day. When the meal is over, they commence drinking in earnest and it may be kept up till daylight or even all next day if the supply lasts. They only disperse after all the drink is finished and even then they often have to sleep off the effects. Even when drinking hard they may complain of being hungry and a meal will be set out. I have seen this in the daylight, but never at night. The day following the orgy, the traveller may arrive to find no beer in the house. There is a legitimate excuse on such occasions, but the wise wife will have secreted a gallon or two somewhere for emergencies and it rarely happens.

Beer at first sight and taste is pretty repulsive to the white man in most forms but familiarity soon breeds contempt, even to the mode of manufacture, especially when he notes his rapid physical recovery from an exhaustive journey across country

without food or water and in the rays of a broiling sun after a drink. I have yet to meet the white man who really enjoys a big piwarrie or drinking feast. All authorities are against the practice and laws have at times been made to suppress the custom unavailing. There is no doubt that these feasts are morally degenerating when people of different races are allowed to attend, but the tribes have had their beer since the Fall of Man, and have found it beneficial. When plenty of beer is on tap the health of the tribe and individual is much better; when low epidemics of all kinds set in and the death rate mounts alarming. Quite unconsciously the Indian in the dim forgotten past realised there was something in beer that was good for Man, Until very recently science knew nothing about vitamins or the health giving properties of yeast, nor did our simple brother of the forest, and beer is his form of unwittingly taking what most doctors prescribe as a tonic in tablet form. He cannot explain why he craves for beer even today, but we should realise the reasons and allow him what latitude (in reason) he cares in producing his simple beneficial tribal beer if only on medicinal grounds. I do not think the Indians really enjoy being blotto drunk and certainly I have never seen any Waiwai even at a piwarri in anything like approaching that state but his life is so organised and free from outside interference that he has his daily quota, except in exceptional seasons, in considerable quantity. A complete lack of their beer is one of the troubles when employing Indians on steady work outside the reach of their tribe. They are quite

content for a couple months or so, then the craving for their tribal beverage sets in (and also for his pet foods) until he probably disappears overnight often leaving his entire wages behind. When he returns home he naturally drinks to excess to satisfy his physical needs, but he sobers up generally after one grand night of it. A couple of weeks at home and he is quite prepared to go back to work again, but his employer is too far away or too thoughtlessly disgusted ever to employ him again.

No .. 348

Indian Life - in general.

The closer Man lives to Nature the harder he has to work. There are no eight hours a day or forty hours a week with her. Man's artificial laws may create an elusive wealth, and so he may surround himself with parasites who minister to his wants, thus allowing himself leisure for thought and the invention of more codes, laws, and means on similar lines, yet it is a safe bet that even the leisured man is as busy - somehow - as a bee. It is, however, the men who, with only two hands and a single brain, has to provide the entire wherewithal to live himself and to meet the demands of his family (not society) that has to work hardest mentally and physically in order to wring a livelihood from raw, non-philanthropic Nature. The Aboroginal Indian of the forests, with the minimum of help from outside (probably less than five shillings per family per annum) must work hard and intelligently or - go under.

The primary duties of the human being are the production of food for himself and his dependants and some sort of shelter from the climatic vagaries of the country in which he lives. This is a comparatively easy proposition in civilization, with its co-operation, communication, and a monetary standard co-ordinating labour and necessary supplies, and it is exceedingly hard for the man from outside to even imagine the difficulties that beset the primitive Indian in securing the necessities of life by his own single exertions, a minimum of tools and a complete ignorance of the world beyond his horizon.

The knowledge of iron and its properties seems never to have been acquired by the Aboriginals of the Amazon Forests, and prior to the arrival of civilization, such tools as they possessed were of stone/ It is only comparatively recently that iron tools have penetrated through the slow, almost non-existent channels of commerce between the various tribes and even to-day many of the more remote tribes have very few iron implements. I have seen villages whose sole supply of iron tools consisted of one axe and a couple of butchers' knives. Amongst the Waiwai, the possession of a three pound axe, a machette or a butcher's knife and a tiny circular mirror (value one penny) places the fortunate owner in the ranks of those who pay Super Tax. Add what is known as a "six by nine" hoe and a dozen of assorted sized fish hooks, and at once he is amongst the Rothschilds or Rockefellers of his world. He will probably have been married before he acquired such wealth, but with only these few tools, he is perfectly able to branch off alone and lay the foundations of his own village somewhere in the distant forests where the environment and conditions are to his liking, and will provide every necessity for himself and family.

The wise old knowledgeable Indians have often told me that in the early, or now prehistoric stages of life, the tribes cut their fields by piling debris at the foot of the trees and setting it alight. After burning some time the fire was allowed to die out and the charred parts of the tree dug away with their stone axes. Amongst the Mapidieu and Diau Tribes - two very remote tribes in Brazil - I have seen such fires burning round certain large, very hard wood trees in their clearings, as these tribes had

the absolute minimum of iron tools and no means of procuring more.

Two young Indian men were returning from civilization where they had been working as hunters for some months on certain mines. They were ascending a large, uninhabited river through the forests in a woodskin, in which were packed the various articles or trade goods they had bought with their wages, and their frail craft was suddenly swamped in negotiating a bad rapid. Everything they possessed was lost in one second in the tearing current, but they managed to save their lives by swimming to a nearby island. They found themselves standing in their loin-cloths only, but fortunately one man had a knife stuck in a cord that served as a belt round his waist. Weeks later a friend of mine was going down river to the coast in a boat and seeing smoke, pulled over to the island to see what was the reason of a fire in such a lonely remote part. He found the stranded men who reported their disaster and how they had been marooned for "two moons". They had made fire by friction between two pieces of dry wood and had erected a rude shelter of wild plantain leaves. This was during the rainy season, a period when it is very dangerous to climb any trees, especially the palms which grew in abundance on the island and fortunately were in full fruit. On such days as the trees were possible to be climbed, they laid in as large a supply of nuts and fruit as possible, but when the tree trunks were wet and dangerous (generally the case in wet weather) they had made fire at the root of the palm trees, and hastened the work of

of felling by digging away the charred parts with their knife. They had not dared to swim to the mainland owing to the swift currents and the dangerous rapids immediately below. My friend offered them a passage down stream but this the two men refused as they were naked and hence ashamed to be seen in civilization in loincloths only. They begged him however to ferry them over to the mainland and to land them on the high land opposite the rapids. This was done and he gave them such supplies of food as he could spare. They waved goodbye quite cheerfully as they nonchalantly turned to walk a full hundred miles through the trackless forest to the nearest habitation.

The acquisition of only a few iron or steel tools must have very much lightened the Indians' labour, as the grinding to shape and creating a fine edge on their beautiful stone axes must have been a long laborious task, and when perfect, could so easily be smashed to smithereens against the hard wood trees of the forest, while felling a field. Even the most modern steel axes in the hands of the amateur or careless worker are apt to have great chunks of steel broken out when cutting these particular woods. Once, when cutting a road with a large gang of Indians, I handed out six brand new axes at daylight. By noon I found large semi-circular pieces had been "dished" out of the cutting edges of five axes and only one remained perfect. Most of the subsequent work was done with cross-cut saws. One would naturally think the Indians would therefore treasure their iron and steel tools, but except amongst the more remote tribes they rarely do. I have

often seen a man using a good axe to cut arrow points out of an old discarded barrel hoop. He would lay the hoop on a rock, one man holding the axe in position, while an assistant would pound away on the heel of the axe, with a wooden club or a stone. Naturally the cutting edge of that axe was completely ruined after such treatment and it would be thrown away for good unless real hard times came along when a man would spend a couple of days or so patiently rubbing his axe on a piece of sandstone to regain some degree of sharpness.

The provision of shelter against the elements is fairly easy to even the most primitive Indian. On the forest floor, the temperature shows little difference night or day, summer or winter, probably a range from 70° to 80° being general throughout the year, except during periods of prolonged rains. Even then it is rarely ever cold actually - "cold" for an Indian sets in at 70° and lower - and thus they do not have to provide against the much greater extremes in climate of other countries. For more than half the year, a few wild plantain leaves and half a dozen saplings will be all that is strictly necessary as a temporary shelter, although every self-respecting man must and does erect quite a good serviceable home with a stout roof and walls. These of course vary according to tribal custom and individual taste from the huge elaborate communal house in which a dozen families may reside, down to a flimsy hut with just enough room in which to swing the proverbial cat. The materials for any grade of house can be found in most cases within a couple of

hundred yards or so of the spot selected as a site. The surrounding forests carry unlimited supplies of wood for uprights and rafters, palm leaves for thatch and tough lianos which are used as cordage in lashing and binding the various parts together for nails are an unknown quantity.

The prairies of North America before civilization took charge teemed with wild game but the colossal forests that clothe the Amazon River, its tributaries and many good sized rivers to the North never had this wealth of indigenous wild game. There is probably a much more varied fauna to the square mile of forest than a similar area in any other part of the world but such fauna is small or even tiny by comparison and much of it either objectionable or too minute in form to enter much into the economy of living for the human race. There are probably not more than a score of animals that are of use as food, ranging in size from a tiny rabbit of one pound in weight to the tapir - by far the largest game - which may yield a hundredweight or two of meat. Of the thousands of species of birds that range these forests, I doubt if there are much more than a score that are of use for food, and these will,range from a few ounces in weight up to the powis, about the size of the ordinary turkey. None of these forms of a meat supply can be considered gregarious except in the case of two varieties of wild hogs, or on occasion the grouping of a few individuals during the mating season, or before the dispersal of a young family of recent origin, and most of the game are found singly or at best in pairs.

Such useful fauna as these forests do contain afe exceedingly shy and wary, for some unknown reason that never registered on my power of observation. A considerable number of tiger cats is to be found yet not enough to form a menace to the life of any particular species. The law of the survival of the fittest doubtlessly applies to the jungle, even if the dangers are less spectacular and apparent than in other places. I have certainly been in parts of these great forests, hundreds of miles from the nearest hut or habitation where the foot of no human being has trodden within living memory, yet I never met the game as unsophisticated and tame as travellers report from other parts of the world. Now and again game will everywhere walk into the range of the arrow or gun with the most apparent ignorance or disregard of danger, but generally they require the greatest skill or patience to approach. Thus game is difficult to locate at all times and is so few and scattered that any overland expedition on a couple of hundreds of miles trek, even in the most remote and untouched forests, has to spend much time in procuring supplies of meat. There may be periodical surfeits, but again, days may pass without meeting a single piece of game and generally such a trek means considerable privation if the expedition has to depend solely on the surrounding country en route for full supplies. Around a settlement such game is naturally even more scarce and wary. The constant demand for meat largely exhausts the supply over a radius of several miles and entails a higher degree of skill and patience on the part of the hunter, as also excursions further afield until the Indian, even with his uncann-

powers of observation, mimicry and patience, decides he had better move away to a new location where game is more plentiful.

Whenever the Indians are met on the trek in the forests, the male heads of the families invariably walk along in front carrying practically nothing but weapons, while their women folks and immature lads stagger along behind carrying enormous loads. One of the reasons for this is the sensitiveness of game and the difficulty of locating it in the jungle. The hunter must be ready at any second to bound ahead or off on either side at the slightest sound or indication of game. A heavy load detracts from the acute observation which is necessary: impedes rapid, stealthy motion, and to discard it means noise which would further alarm the game. With the silent stealthy step which is the Indian's general mode of progression, these men not infrequently startle a deer or some other game lying asleep or resting along the route. The animal may only be a few feet or yards away, yet totally invisible in the dense jungle and has itself only dimly sensed danger. It probably dashes off a short distance only, but soon comes to a halt to make sure there really has been danger and to locate its proper direction. At the very first sound, the hunter knows exactly which game he has disturbed and he is off after it. Then there commences a test of keen observation between hunter and hunted in which not infrequently the man is the winner. The hunter may walk for hours without flushing game in this manner or he may put up game half a dozen times in a few hours. He never knows at what second his skill as a hunter may be required and he must be always ready.

A heavy, or any, load would mean delay or noise and the chance would be more in favour of the game escaping. What was and still often is necessity soon becomes a tribal habit and the women uncomplainingly accept their position as beasts of burden at all times. Even knowing all this there have been times, when I have been most annoyed to notice a family walk into my station, the husband jauntily carrying only his weapons weighing not more than a couple of pounds; the timid little wife following behind, walking with the stilted gait of the overladen and carrying more than her own weight in goods for sale, household goods, babies and sundries. Expostulation was useless and quite incomprehensible to either party.

The more primitive Indians depend almost solely on the bow and arrow for procuring a supply of meat in the forests. Many tip certain arrows with some form of Urali Poison when hunting for the larger species of game, as its deadly narcotic principles ensure a certain and speedy death, even when not shot in a very deadly part of the body. Most of the wilder Indians are splendid shots with the arrow but it matters little how accurate the marksman, or how effective the poison, for it almost invariably means that every arrow that finds its mark is completely broken to pieces in the death struggles of the game. When starting off to the forest most Indians carry half a dozen arrows, but when they return, the majority will have been thrown away as useless if they have been even moderately successful. These arrows are beautifully and skilfully made and it means several days in collecting the various parts used and subsequent manufacture: but he must replace them before going hunting again. With all the raw material already gathered, properly seasoned and ready to hand, it will probably take him half a day's

work to make a new supply. Many Indians keep an emergency supply of arrows stuck perpendicularly (to keep them from warping) by their points in the thatch of the roof over the particular part of the hut where the hammock is slung. Not a single week passes however without the hunter having to spend one or two afternoons either repairing breaks or making complete new arrows.

The dense forests with a deep blanket of vegetation generally well over a hundred feet thick offers but little in the way of food for humanity. Many trees carry edible fruits, but these cannot be compared with the cultivated and more satisfying varieties of civilization. Nearly all such fruits of the forest carry either a large seed or two, or a considerable quantity of smaller ones generally surrounded by or packed into a small quantity of vegetable matter that has an agreeable taste, just sufficient to attract the forest fauna and so assist proper dispersal to ensure the survival of the species. Very few are at all satisfying as a food unless eaten in large quantities, although everyone welcomes the different varieties at the various seasons of ripening for their flavour and as something by way of a change. Such fruits ripen at largely varied times, once a year in general, but rarely in profusion more than once in every three or four years. They are of little use as a staple food however welcome they may be when in season, and cannot be relied on as a complete diet for long. Once mature, they deteriorate rapidly and can not be stored for a rainy day, or future use even a week hence. A few nuts are the exception, the Brazil Nuts of com-

merce, and the much less known but preferable Sewarri Nuts being the best and most general. They can be kept almost indefinitely but the stomach of the hardiest soon revolts at them when they form the main article of diet.

Periodically, every tribe is faced with a shortage of food from their cultivations, often from no fault of their own. On my first visit to the Waiwai, I found very little food amongst the Taruma owing to excessive rains having rotted their crops, whereas the Waiwai had a superabundance of everything. It was not a case of thrift or the contrary. The heavy rains had fallen much too heavily on the North side of the watershed - a long East and West chain of mountains - whereas to the South the rainfall had just been correct. Thus the Taruma returns were probably 50% below average, while those of the Waiwai were just as much above normal. Experience and records show that climatic factors influence agricultural returns of every nation in the world and national or international estimates of key food products change from day to day and are keenly scrutinised by those whose business it is to see to an equitable distribution. Civilization has its ships and trains and no general scarcity occurs, but the Indian, having none of these adjuncts to hand, when faced with a scarcity, can only turn to the forest to live somehow, as his whole world rarely extends beyond the next valley.

I have known such a scarcity approach the margin of famine. There are always a few families who through sickness, absence of the men on work outside or just laziness (as is found in

every community) who have not planted their share and were hoping to draw on their neighbours for supplies. A sudden drop of 50% means beginning on the crops while the tubers are still small and this, combined with those who have nothing, means the tribe is soon completely cleaned out of supplies. I have been through more than one such famine in the Wapichanna country in which there are probably one thousand individuals. I had no more food in stock than would carry my station along; the rivers were not navigable (it being the dry season) within considerably over one hundred miles and I simply did not dare to hand out my stocks of food. Whole families would scour the savannah country in search of any natural supply. They dug up every form of wild yam, sweet potato or arrowroot, forms of food that are generally despised, and caught fish or other game by every means within their knowledge. One form of savannah food at such a time is a large circular and thin bulb from which sprouts a rather pretty green speckled stalk and a few leaves on top. This would be grated up and made into coarse bread in much the same way as preparing cassava. I have eaten it and can vouch for its disagreeable taste, but it is only eaten when all else fails. Many families would flee to the forests but here again, due to the long dry season, there was equally little to eat, and the next dry season invariably set in to find every person emaciated and thin. The majority of their economic plants are grown from slips, and every family invariably planted a good supply of these on the margins of the various water holes or such permanent water as existed in

their districts. With the first rains they would replant their empty abandoned fields. The rivers would rise in flood and great numbers of new fish would arrive in the various pools which would help matters, but almost invariably it meant their beginning on their new crops before they were mature. A general famine means a period of considerable scarcity during the following year. I have known the Wapichanna unable to stage a drinking festival and dance in any of their villages for a period of some eighteen months which is considered the very acme of self denial, and it would not be until the end of the second year that supplies would again become normal.

The forests would seem by their marvellous tangle of growth to indicate soil of exceptional richness, but once this covering of greenery is removed to make way for fields and gardens, the soil soon suffers in fertility through leeching caused by a very high rainfall. Weeds of all kinds, rarely seen on the forest floor, spring up overnight. The forest also immediately begins with the deliberation and certitude of the glacier advancing on every side to reclaim the thefts of the puny human ant. In a year or two the surroundings of a camp become denuded of material required to repair their tools and houses: the latter become insanitary: the task of keeping the fields weeded and open, calls for more and more work and worry until it becomes easier and better to start a new location than to keep the old one going, and so the Indian moves on. Sickness, death and other factors may also effect a speedy removal.

I have known villages survive for years in exceptional cases but on the average they move somewhere else at least every third year. The distance of the move may vary from less than a mile to as much as five or 50 depending on various factors of the site selected. In savannah country the Indians do not move far as a rule, permanent water for household use, and a site well above high water mark only being essential. Amongst the Wapichanna a small hill covered with sharp jagged quartz pebbles is the ideal site preferred, as such pebbles are popularly supposed to give protection, during the night against enemies. The evil spirit (Kenaima) delights to trap the unwary by night, but a wrong step in the dark on the sharp edge of such pebble would almost certainly bring forth an exclamation of pain and thus give warning. Removals in the forests, however, are generally much longer distances. The same conditions apply to water facilities but consideration is given to other natural conveniences, possibilities of game, open forests, favourable soil, and an abundance of fruit and necessary materials.

Movement in the savannahs causes little inconvenience to the stranger or visitor, as the country is open, and generally the new site can be seen quite easily, but it is a very different matter when removals take place in the forests. The visitor follows along the usual road to emerge into the clearing to find the house he knew has been burned to the ground (generally the sign of a death of some important inmate) or the house has simply been abandoned. Visibility is confined to the clearing itself and there is no indication as to where the new village may be

located. The only thing to do is to follow all trails leading away into the bush, but there are so many hunting trails in every direction that it is most difficult to find the right road. I have often lost a day hunting for a new location, and I have one vivid memory when we spent three whole days in the attempt. The occurrence of large dense spiders' webs across a trail is a sure indication that it has not been traversed for some weeks or months, but on this trip the village had apparently moved away fully a year ago, and there was no help for it but to follow each trail to the bitter end. At last a light "Sirahee" (a broken twig or a cut sapling every five to ten yards) gave us a possible line and eventually we found the new village some fifteen miles away.

Unable to procure an adequate and permanent supply of food from his natural surroundings, the Indian has willy-nilly had to develop various natural products of the forests. To-day cassava in some form or other is the principal food of every tribe in the Amazon Forests. It is found growing wild along most mountain ranges where the forests are thinner and more open, thus allowing a rather stunted shrub of little more than three feet in height to compete successfully for a place in the sun. Its edible tubers doubtless have been known for generations and the ease with which it can be grown from every small part of the stem or twigs may probably have been noticed by pure accident originally. This wild cassava by careful selection, aided by fortuitous cross-fertilization has now given place to dozens

of varieties all showing great improvement in quantity of yield, flavour and colour according to individual taste.

After the cassava, come the yam and sweet potato as articles of diet. Both of these again have been developed from the wild varieties and almost every village has its own particular brand, many of which are of excellent flavour and quality. I know of one small area where the wild yam is always to be found. It is exceedingly coarse and poor flavoured and never disturbed in ordinary circumstances, but in periods of scarcity or famine the Indians would dig up the whole place after every vine they could locate. In a couple of years' time these yams would be as prolific as ever having probably sprung afresh from a few tiny remains of such tubers as escaped the eagle eye or the eager hand of the hungry diggers.

Bananas, pineapples, peppers, tobacco, a few bulbs and quite a number of other economic plants have been brought under cultivation and developed to comparatively high standards to serve either as food or as an aid in their various arts and crafts. Of these latter, silkgrass and cotton are probably the principal ones, the silkgrass providing cordage; fishing lines, strings for bows, etc., when spun on the leg with the hand; the cotton giving a supply of lint from which to make thread to be later woven into loincloths, hammocks and other necessities.

Some thirty years ago I was asked by the U.S.A. Department of Agriculture to collect samples of all the varieties of cotton I could find in use amongst the Indians of the remote interior. Of the ten or twelve varieties submitted, only one would stand up to modern world tests and requirements, and it was found that

its length of staple ran so close to Sea Island Cotton standards that doubts were expressed as to its being indigenous. This doubt I was unable to refute beyond the statement of the Indian who grew it to the effect that "Grandmother always planted this variety" and the fact that I found it growing in the high forest several hundreds of miles from any point of civilization.

To develop these various plants, the Indians had to devise some form of clearing in the forests by such methods and means at their command now unfortunately lost in obscurity owing to the distortion of fact through a century's long chain of oral teaching and since the introduction of iron and steel tools. To-day, field cutting is pretty general in method amongst all the tribes and varying only slightly through lack of tools amongst those residing in the more remote and inaccessible parts.

The selection of a site for a new field calls for considerable care and skill. The soil must be light and sandy as being easier to work and better adapted to agricultural growth. It must be covered with a good thick layer of fallen leaves and debris which when burned largely enhances its fertility. The area must carry the maximum of small, easily cut trees and the minimum of large or extremely hard wood trees or those with enormous buttresses as entailing less hard work in felling, yet it should have one large heavily crowned master or key tree in a commanding position. The area must also be above high flood mark, on the slope to ensure natural drainage, yet devoid of seepage from higher ground as moisture in excess is fatal to most of his plants.

Once all the factors are satisfactory a benab - small

triangular shelter - is made of palm and wild plantain leaves at some convenient spot where the man and his wife can reside during field felling operations. The first work to be done is underbushing - the cutting down with his machette of all lianos, vines, saplings and young trees up to the thickness of the fore-arm within the area. This will take about three days of hard, steady work in the average sized field which is generally about half an acre to begin with as being enough land to clear and plant in one season. It is generally enlarged at various times after-wards.

He now takes his axe and begins felling the trees. They are severed roughly about waist height of the axeman to demand less movement and exertion in stooping and rising erect at each blow of the axe. A cut, level at the bottom and sloping down from above in the form of a V, is made in the direction the tree is to fall and in the opposite direction to where the key tree is standing. This first cut is made to within a reasonably close distance of the centre of the tree; then he commences a new V cut on the opposite side. The level of this cut must be some three inches above that already made to ensure easier felling and less work, but the cut is only made to about one-third of the tree's diameter, thus leaving one-fourth to one-third of the bole uncut. In no case must the tree be completely cut or severed and the cuts when finished should resemble Diagram No. 1.

The tree is left standing and the Indian tackles every

tree in the proposed clearing in the same manner until the whole field is just so many partially severed trees. He then begins work on the master or key tree in the same way but this he severs completely so as to fall in the direction chosen. As this huge tree begins to crack, the axeman pays great attention to the best line of retreat; a few more blows from the axe and the tree begins slowly to heel over, whereupon the axeman dashes back into untouched forest for safety. With a mighty crash down goes the key tree carrying in front of it the whole field of partially severed trees like so many skittles.

Practically every tree in high forest country is held more or less securely to its neighbour by strong, thick lianos which, though they have their roots in the soil soon make their way to the tops of the trees for light and air. Having nothing to aid them in going higher they begin radiating in all directions over the adjacent tree tops and they soon form a network of immense strength binding half a dozen or more trees in their grip. Not infrequently when it becomes necessary to cut down a single tree, at least three to five neighbours must also be felled before their combined weight can break the lianos, even if the trunk of each tree has been completely severed and they have slipped off the butts on to the ground. These tough lianos snap with loud pistol reports away in the tops of yet other trees and if attached to any weak or dead branches create a very real danger from falling debris to those below for a distance of ten to twenty yards.

This method of field cutting reduces such danger to the

minimum as work can proceed fearlessly until the moment when the key tree begins to give warning. At the same time, it is a definite labour saving device as it reduces actual cutting operations by one-third due to the uncut portion of each tree being broken by the massed weight of the key tree and that of all those pushed forward by its fall.

There are many trees in the forest that have enormous buttresses flanking three to five sides of the bole. These may begin at any height from a foot or two to as much as twelve feet or more and widening out at a 40° slope down to the ground. These buttresses are generally some three to six inches thick, the wood being particularly hard and cross grained. It is almost impossible to cut trees so supported from the ground and the usual procedure is to erect a staging and cut the tree above the highest buttress.

The Waiwai with little trade with the outside world and a resultant paucity in iron tools uses his axe very carefully and sparingly: the less chopping the longer the life of his axe, and generally a single tree with large buttresses is sufficient to condemn any site for a field - there is plenty of room elsewhere in the forsts. In selecting the site for a house his choice is more limited, as he must be close to permanent good water, have a fairly level, yet well drained spot about flood level and have a certain flood level route to the forest so as to reach his fields or go hunting, hence the Indian is often faced with heavily buttressed trees in clearing a site for a proposed village. I have repeatedly seen the Waiwai and other forest tribes felling such trees from a staging at twelve to

twenty feet above the ground at a point where the tree is clear of buttresses and slightly less in diameter.

In tackling a heavily buttressed tree, the Indian first cuts a stoutish pole which he leans against the tree to be cut, to enable him to swarm up above the buttresses: sometimes he may find a convenient liano hanging down from the tree top up which he can climb. Having reached the required height, the Indian, usually assisted by someone on the ground, passes a long, strong, supple liano three or four times round the bole. The exact spot for the staging is selected, the band of lianos pulled as tightly as possible and the ends securely tied - Diagram A. Two strong saplings are handed up and their butt ends inserted at opposite sides of the bole between the tree and the lianos - Diagram B. Staging legs of two cross sticks are securely lashed together at the necessary height and set upon the ground - Diagram C. The two saplings already attached to the tree are then forced down inside the V at the top of this staging and secured in place - Diagram D.

The axeman, after carefully clearing a space on which to land if he loses his balance or has to jump down unexpectedly, climbs up on to the staging and takes his stance on the two saplings at such point as an axe can conveniently reach the work and he begins cutting. When the incision has more or less reached half way through the tree, the man descends and the staging is moved round to the opposite side of the tree where a second cut is begun a few inches higher up. It is no mean feat of dexterity to throw down a tree in this way, balancing gingerly high off the ground on two sticks

that swing and sag to every motion of the axeman as he plies his axe in cutting. Cutting trees on such a staging makes for largely increased danger from falling branches and debris when the tree does fall, as the axeman has to jump down to the ground before racing for safety and just these couple of seconds delay has led to nasty accidents and even death.

It requires about four days of hard steady work to fell all the trees in an average field. When the whole affair has crashed to the ground there is a vast tangle of branch and liano sticking high in the air everywhere. The axeman must lop off all such branches until he has a uniform mass of leaf and branch of some two to three feet deep so as to present a straight uninterrupted course for fire to devour when dry. Leaves and branches high in the air would escape the fire and only mean extra labour later on.

The work of preparing a new field up to the stage for burning calls for at least ten days of consecutive hard work, four in under-bushing, four in felling and two in levelling branches. Very few Indians can spend so long on any one particular job and the field is seldom ready under a month or six weeks. With the very best intentions there are countless interruptions: there is no game for food in the house and he must go hunting or fishing; his arrows get smashed in shooting game or are lost entirely and they must be repaired or renewed; he may have to accompany his wife to their planted field to dig and bring home cassava and vegetables; visitors may arrive, or he may be called away to

another village: implements and household utensils may get broken and require his attention and all kinds of calls may be made on his time and energy, each a delay in finishing the field.

It is quite usual for an Indian to branch out on his own and to cut and prepare his entire field alone except for the help of his wife who does the cooking, brewing of beer and other necessary duties. Often however one or two of his neighbours will come along and give him a few days' assistance or, if he is a man of substance, he may stage a drinking festival and dance and invite all the neighbours within a reasonable distance to come and help fell the field prior to starting the dance. The neighbours in such a case turn up at an early hour. Both grades of work, underbushing and felling, go on simultaneously, the women, youths and even the children, under a headman doing the underbushing: the men working on relays with the axes in felling. Such work proceeds rapidly and as a rule the field is finished, except possibly the final lopping of the branches, by mid-afternoon after which the visitors turn in for a night's festivity.

Another common labour saving device in field felling is to leave uncut a number, say about twenty to an acre, of slim but very tough strong trees of about six to eight inches diameter and spaced more or less equidistant all over the area. When the trees all come crashing down, the crowns of these uncut trees have to go also, but the trunks generally break off just below the branches and the bare stumps are left jutting up some ten to twenty feet in the air. When the field is ready for planting,

yams are planted at the foot of every tall stump which serves as a pole round and up which the yam vines can twine as a support in their need for height. If no support were provided these vines would sprawl all over the place seizing on anything handy to rise off the ground and would strangle to death such cassava or other plants as their tendrils laid hold of, A good yam vine can strangle all plants over a radius of several yards, but trained up a pole is perfectly harmless and occupies no more room than the hillock on which it is planted. These broken trees firmly anchored by their living roots make ideal supports, otherwise the Indian has to cut a pole, dig a hole and plant it, a very poor substitute in most cases as the weight of the luxuriant vines catches the wind easily and the whole thing soon sways and generally falls flat on the ground.

All fields must be felled at such a time as there is a prospect of some four to eight weeks of uninterrupted good weather. A heavy rain soon after felling will do no harm, but once a field has reached a certain point of dryness, a sharp heavy shower causes the leaves to drop off and fall to the ground. The rain beats these fallen leaves into a compact mass close to the soil which completely excludes the air and prevents proper drying in future. The more leaves in suspension among the three feet tangle of twig, branch and liano, the better the air circulates right down to the soil, thus assisting drying, and their presence ensures a hot flame of solid fire to advance right through the clearing when everything except tree trunks

and the larger branches is consumed. The better the fire does its work, the less work subsequently in clearing debris off the land before planting the various crops.

There are two seasons each year for cutting fields. The first is in the early months of the year so as to take full advantage of the dry weather in March and April and be ready for the first showers of the heavy rainy season which lasts from early May till late August. As soon as these rains are over, field cutting recommences although on a much smaller scale, and the work must be completed as early in November as possible to allow proper drying and burning to take advantage of the short rainy season, roughly a fortnight around Christmas or New Year.

The Indian watches every change in the weather once his field has reached a certain stage in dryness. Of course it is tempting to allow it to lie as long as possible as it will be just so much the drier, but too long a delay may find him caught unawares. I have often seen the men rush off at short notice to fire their field when an unexpected storm was seen to be approaching. Fire is generally started at several points around the clearing, fuel is piled on and it is attended until a good strong fire is going and it begins to eat into the mass in front. The Indian then goes off about his ordinary business allowing the fire to take complete control as the intense heat generated makes it impossible to remain anywhere near the place. The best time of the day to set fire is as soon after noon as possible as the heat from the sun has raised the temperature of the branches and

leaves and makes for better burning, and by sundown the field will be completely burned although certain trees may smoulder for days or even weeks.

The remaining work depends on how the fire has done its work. In the best cases, only a few days may be required to clean it up, junking up branches and smaller tree trunks and piling them into heaps to be burned separately. The larger tree trunks are left untouched as being too much labour to remove, although later some may be split up to make firewood when necessary. If the fire has not been successful a great amount of work may be caused in cleaning up, so much so that it becomes a moot point whether it will be less labour to cut a new field entirely. I have often seen fields abandoned completely from this cause and if it happens in the right season no harm may be done but not infrequently the Indian may not get a chance to cut his new one. More than once I have known the wet season commence some months before the customary time in which every new field would have to be abandoned and the Indians would lose a complete season for planting. With little more than just sufficient at any time, the loss of their new fields throws them back on old fields for supplies, and these soon become exhausted. Those whose stocks run out first draw on those who still have and so it goes on until no one has a thing to eat and they have to depend on the scanty produce of the forests to live on - somehow. Nine chances out of ten that is just the year an expedition turns up. I once dropped in on a tribe away down in Brazil in such a plight, where

neither love, money, nor barter could buy anything except a few sticks of sugar cane, probably the most hardy of all the tropical domesticated plants. My party had had no food for days and I can still remember the pain in my jaws from squeezing that cane between the teeth in trying to extract the last drop of juice in a vain endeavour to satisfy the pangs of hunger.

Once a field is burned, planting may commence at once, and cleaning up and planting often go hand in hand, the man junking up and burning, and the wife making hillocks and planting. The man invariably does the cleaning up and makes most of the hills also. This last is done by hoe, or with chisel pointed pieces of wood and means digging up the surface soil over a small diameter and piling it in a heap in which they bury their short sticks of cassava or various tubers, and other hardy plants. Certain seeds, as their Indian corn, must not be planted until the first shower of rain and then planted at once to ensure good strong plants against the time - a few weeks later - when myriads of caterpillars appear and devour,every vestige of new succulent greenery. Even a short delay may mean that the young corn is not strong enough to withstand these caterpillars which eat it down right into the ground and the whole crop is completely lost. A second planting is rarely a success, as in all probability the torrential rains will beat down in the soil all the tender sprouts as they appear. All Indians are very fond of corn and many cut a special field for it alone, although most of them are content to plant it extensively between the hills of their other crops.

It grows tall and straggly, matures quickly and does the crop no harm unless planted too thickly. Corn can be eaten roasted or boiled, can be made into bread or meal, or fermented to make beer, so all Indians plant it in considerable quantities, but of all their crops it is the most uncertain in yield unless planted on just the right day of each particular year.

Few Indians in their own environment are idle or lazy. As in all communities some are above the average in dynamic energy and some are below it, and it becomes more of a matter of comparison with their own standards than that of any alien race. There are some of outstanding personality, intellect and accomplishments in every tribe, men who always have good fields and whose barbecue always carries at least a little dried meat; there are a great majority of an average type of mental and physical properties, and a small minority of those below average, yet very few who can be classed as mentally unfit. Naturally there are some who do as little work as possible, but the daily needs of his family and the censure of his fellows - especially the women - forces such to make every endeavour to conform to the customary customs and rules.

Indians generally marry young and babies come along pretty regularly for some years. Naturally the expectant mother is incapacitated to some extent during pregnancy and for some months after birth as the baby can only be reared from natural sources. During such periods, except during couvade, on the husband devolves many grades of duty occas-

ionally even that of preparing food, and the man who for years keeps a growing family supplied with food and every necessity of life has to keep busy. With so many calls on his time, the man can rarely devote long spells of time to any one particular type of work. Variety is the spice of life and the Indian knows that pretty well and acts on it. The Indian adopts a moderate tempo in work so as never to become too exhausted by any particularly strenuous work, and shears off to lighter tasks as he becomes tired. By comparison with ourselves the Indian is tireless and every muscle is in full training. I had occasion to take a series of tests of comparative strength amongst the different tribes, one of which was a small machine for registering the strength of the grip by the hand. I had to demonstrate its use and my first squeeze invariably registered a high degree of grip, but each subsequent grip registered less and less each time. The Indian would register a considerable degree of strength at his first attempt, but he could go on practically indefinitely registering more or less the exact same degree of strength, in fact, after getting the hang of the gadget, many of them would raise the indicator instead of lowering it as in my case. I could always beat them on my first attempt; I rarely ever could better that, and at my fifth try I was invariably a long way behind them. I could almost always beat an Indian over a hundred years sprint, but over a three mile race I was always thoroughly beaten.

Of course in their work there is a great lack of coordination and much misplaced energy in many cases. An instance

is the distance, generally a mile or two, between their homes and their fields, which means a double journey of half an hour each way for everything that is required. It would seem that the house actually in the field would be an advantage and occasionally one does find a home so built, but they find it becomes a playground for all the children to the detriment of the plants which often get broken. It also offers an excellent chance for the greedy and less responsible members of the village to plunder such fruits as are arriving at maturity and it places their whole wealth in food under the envious eyes of every visitor who would think it quite in order to beg for everything in sight. According to tribal etiquette they cannot refuse any such request, so the field is much safer, and more productive a good distance away.

Many Indians rest or even sleep for an hour or so during the instense heat of early afternoon, but in very rare cases only can the siesta be considered a habit. They take such a rest only when they are tired but on most days they are steadily busy with some little job dependent on the need of the moment. Many of these light tasks seem futile when judged by outside standards, but there is some need for his task as no Indian works for work's sake only. Sunset closes his labour for the day except such mechanical work as preparing various fibres and straws or weaving some of their basketry which can be carried on by the light of a fire in the hut. There is a good deal of chatter in the early evening - the experiences of the day, the gossip of outside, and general discussion. Then there is the Good Night Litany, a little music on the flute and if the occasion warrants some of the myths and oral teachings of the tribe. Most Indians

are asleep by 8 p.m. They are very light sleepers as a rule except when thoroughly tired, and practically everyone wakes up several times each night if only to push the fire together to prevent its going out, or they may, if asleep earlier, spend an hour chatting. As a rule they sleep about eight hours in all. The more responsible members are awake shortly before the first streaks of dawn; the men to note the changing position of the stars by which they fix their various seasons, and probably to instruct the children and youth in the science; the women to prepare the first meal, generally some variety of porridge, which must be ready while the dawn is still growing. By the time the sun peeps over the horizon almost everybody is ready to start the duties of a new day.

The women are just as busy as the men all the year round. Their most important duty is the preparation of food and they must cook at least three meals per day. As all the supplies are direct from the field or forest in a raw state, except in the case of certain fruits, a considerable amount of labour is entailed in its preparation as, for instance, the reduction of cassava roots to bread, which, including digging and carrying home from the field means about ten different processes. The woman has to see to it that there is a steady supply of beer on hand for thirsty workers. She has to help plant the fields, and on her almost alone devolves the duty of all the weeding. She has to carry from the creek or water hole every drop of water that is needed in the house. She has to go out daily in the forest, split up, and carry all the firewood that is required.

She has to keep the house clean and sanitary outside and inside, and be at the beck and call of her lord and master, (as also all the children) the whole time. She has to spin miles of cotton yarn,weave hammocks for the entire family, make her own laps and her numerous seed and animal teeth necklaces and decorations. I have never known either sex completely up to date with or ahead of their chores, and there is always something left to be done if they care to, but the woman's work is more of a daily routine than that of the man. She must cook breakfast every morning whether she likes to or not, unless actually unwell. Above all she has to bear children and rear them to the best of her ability with no assistance in the nursery. At night she listens silently to the talk of the men or whispers the myths and secrets peculiar to her sex to her daughters. Should she wake at night, she gets out some work and many and many a yard of cotton thread I have seen spun by the flickering flame of the burning logs by her hammock, yet the women are cheery, full of spontaneous smiles and rippling laughter and ever ready to enter the lists of their customary badinage. As is the case with the men the high spots of enjoyment in life are purely physical; satiety from food, the exhilaration of the drinking festival and dance, and sexual contact.

When a baby is born, some help as a midwife is generally called in from the more experienced women in the neighbourhood, but I have often known a young mother give birth with only her husband to assist. The husband should and does go into couvade for the period general in the tribe when he must observe various

established customs, abstain from all violent exercise, and partake of a rigid diet.

For some months after birth the Indian child of either sex is attended to with love, care, pride and even jealousy, especially it if is a first child. As soon as a child begins to show it has a will of its own, a difference in treatment sets in. The boy, within reason, must have his own way; the girl is gently but firmly repressed. A boy slaps his mother as any child does, and it evokes laughter or smiles as being indicative of his virility and how he will some day enforce his will on those around him. A girl does the same thing and is promptly slapped back although quite gently, the mother slapping slightly firmer at each succeeding blow from the little hand, until the girl gives up amd generally cries. The boy can lord it over the whole hut for the first few years, but the girl must from earliest infancy learn that she must not possess a will of her own. The first word the Indian child understands is "Don't". This is generally some euphonious sound and in several languages this word is the same:- "Ka", or more generally "Ka-ka". A slap, in the case of a girl at least, is often given with the word at first and the child soon learns that the sound means pain or danger to itself. It is amusing to watch some tiny crawler halt on the order with outstretched hand, in wonder as to the meaning, until it dawns on the little mind, and with a smile, the child crawls off after something else.

Child labour is general amongst all Indians. They possess

few or no toys and "Satan finds etc", so it is only natural that the parents encourage the child to do some task at the earliest possible age. As soon as it can toddle the child of either sex is encouraged to pick up some light article and hand it to the mother. The child just manages to pick it up probably flopping on all fours in the act, but eventually staggers forward to be met more than half way by mother, face beaming with pride, when the child is almost certainly picked up in a close embrace, about the only demonstration of love known to the Indian, and the child's feat is described to everybody for days. As the child grows older it is taught to do various little jobs and is proud of its responsibility under the stimulas common to the children of every race of imitating their elders. About the first practical lesson for the girl is carrying water from the creek. It is a very small quantity and a slow job at the first attempt and mother probably holds a little hand most of the way, but it is a useful lesson and soon the girl can go alone. The boy is rarely asked to do such menial work, but has to walk behind father to the work or the field as companion, as very few Indians will go out of sight of the home alone. The little lad is given something to carry home, and soon he is walking proudly in with a few sticks of sugar cane or some fruit. This carrying capacity is increased with age and strength, until the girl comes to full strength, and the loads that can be carried by many adult women are little short of marvellous. The boy as he grows abler has to accompany the father on hunting expeditions, and as custom ordains

that no hunter carries what he shoots, the child has to carry home whatever is killed. Many a time I have seen a father himself carry game that was too heavy for his little son, but at the last turn of the trail before sighting home it would be transferred and the little fellow would stagger proudly across the clearing with it.

Children are seldom corrected physically and the sarcastic stinging tongue of the parents is generally sufficient to enforce obedience to both personal orders and tribal customs, nor do the parents ever ask a child to do anything beyond its strength and power. One stands aghast at the sight of a father jabbing the most painful sting of a scorpion into the flesh of his barely five year old son, but it is to enure him to pain and discomfort, especially if that particular tribe hold stiff initiation ceremonies as the test of manhood, yet it is very rarely one comes across a case of deliberate cruelty. The following was however a case of real cruelty:-

A little girl was born to a Wapichanna family and the mother died soon after. The baby was taken over by the grandmother, a widow with a reputation for a vile temper and cruel ways, but it was some years before stories of the grandmother's cruelty became known. The child must have been about five years old when the grandmother brought her in for medicine as she was almost continually crying. I was living then with the only other white man in the district and he suggested taking over the full responsibility of the child, an offer very promptly accepted. The bairn was thin and lanky, suffering from continual headache.

A few days later the old lady, who was cook to our establishment, reported a peculiar formation on the child's head. Examination showed that a width of some three inches extending across the dome of the skull from above one ear to the other had been depressed by almost 1/8th of an inch. This we learned had been done by the strap of a basket through continuously carrying much too heavy loads for the tender child at the orders of the old grannie, the alternative being a severe thrashing.

Complete rest and good food soon made a great difference in the child's condition and appearance and the headaches gradually disappeared completely. She grew up husky and strong, began to take an interest in work and anxious for her full share of it. The depression never disappeared entirely although it became less pronounced. When I last examined her head, by which time she had herself become a mother, a distinct double edge, roughly 1/16th of an inch could be plainly felt right across the top of her head. It did her no harm however and Sylvia, as we called her, used to glory in her strength. I have often seen her voluntarily staggering home with a load of firewood carried in the same old manner over the head by a strap; a load that would turn three hundred pounds on the scale - more than double her own weight.

Sylvia's subsequent return to the tribe may be interesting. For years we never so much as saw the grandmother, until Sylvia, well fed and cared for arrived at puberty at about eleven years of age. A month or two later we were wakened just before dawn by piercing screams and we sprang from our hammocks and rushed to investigate when we found Sylvia yelling for help and rolling over

and over on the ground in a fight with the grandmother. The servants and Sylvia slept in a house some yards away and it transpired the grandmother had arrived from nowhere quietly to call out Sylvia to speak to her. The girl, ignorant of who was calling, had complied, but indignantly refused to obey the old grannie when she ordered her to pack up and leave our station at once. Then the old lady seized Sylvia hoping to drag her away and the fight was on. Needless to say the old vagabond left with a flea in her ear and Sylvia remained, but the grandmother would turn up twice or thrice a year with some gift of food or fruit for Sylvia and try persuasion. Sylvia hated the grandmother most cordially and generally left the house to hide as soon as she appeared, to keep out of the way of trouble. This went on until Sylvia was about thirteen or fourteen years of age.

To our utter amazement Sylvia walked up one fine day to tell us she was leaving to return to her native home and of all things to live with the grandmother. She was quite definite on the point and as some relatives were now passing through to her village it was a good opportunity as she need not make the journey alone. No ! the grandmother was not there but go she must and would, otherwise Sylvia stood tongue-tied and silent. My friend knew it was easier to hold an irate muscular pig by the tail with a greasy hand than to keep Sylvia in that frame of mind so he consented. We gave her a fair amount of trade goods as wages for the various services

she had rendered while with us and she departed.

A week or two later, the grandmother arrived alone demanding payment for all the years she had been deprived of Sylvia's companionship and help. My friend brought all his powers of invective into play and the old lady left with an empty basket. We learned however that Sylvia, according to tribal custom, had been affianced as a child to a small boy in the same village and that this youth, now a full grown man, had come in a week or so previously to have a look at his prospective bride. Both were satisfied and Sylvia had fallen in love right away. After getting our consent to leave, she had gone along with the supposed relatives to a nearby creek where she found her fiance waiting, and the marriage was consummated the night she left.

To take Indians, male or female, away from their forest and tribal surroundings and try to introduce them to work on a civilized scale is simply asking for trouble. It is a great temptation to many, as the Indian's complete ignorance of values can be exploited, and they are frequently made to work for periods of varying length for extremely low wages. Periodically I would go out to the coast and pay off my men in cash and in some cases they regarded bank notes as of no valye. Once I paid off a gang with a certain number of notes but also with some twenty shillings in change. They placed the silver in the notes, carefully wrapping up the notes. Later on, when they went into a shop, they undid the package and flung the notes on the floor. They had served their use as a temporary wrapping to the coins, but why carry a piece of paper around? In the associations with

white people, paper is of little apparent value being thrown away almost daily in some way. The very first paper seen is treasured, as when I gave a photo of our reigning Monarch to the Waiwai Chief on my first visit. When he died some years later, the photo was returned to me intact and perfect. They may treasure up a few of the more gaudy papers used as wrappers round certain goods, but familiarity soon breeds contempt and the raw untrained youth on his first visit to shopland has to be carefully warned as to the value of bank notes.

The Indians can be and often are robbed right and left when paid in cash until they acquire some knowledge of the various forms of money and their different values. I remember one Indian, who proudly showed me a penny for which he had given a shilling in exchange. He had got a bigger coin so it must be a good bargain and he was quite happy. Such ignorance is soon corrected however. Each man in a party finds out some fact about values and each individual discovery becomes general knowledge when they have a chat at night, yet even after several excursions to the outside world they can make some remarkably silly mistakes.

I had a man working with me who had spent considerable time as a huntsman on various timber grants and gold mines; he spoke English fairly well and had a fair knowledge of money. I paid him personally the sum of one hundred and twenty dollars as being due to him, and later in the day I met him in the street with a long pole over one shoulder at the end of which dangling by a piece of string was a cheap American clock. "Look! Boss !! I've got a bigger tick-tick (watch) than you", he shouted in glee.

I duly admired it and casually inquired what it had cost. Imagine my consternation when he informed me he had given his entire cash for it.

Indians when not sure of just what values in money are have a habit of holding out their entire wealth in the cup of both outstretched palms placed side by side, trustingly allowing the shop assistant to select the necessary coins to pay for the article in question. My man had no knowledge of the value of a watch and the shopman's pert demand, "One seventeen, please", meant nothing, so he held out all his money in his open hands. The shopman cupped his hand beneath: my man opened his and away went all his money. I went to the shop to investigate only to find the rascally Portuguese assistant had immediately cleared out and there was no remedy.

The Indian's natural talent is hunting, and to any passing expeditions, or where mines or other work are in progress in the forests, their services as huntsmen are invaluable for procuring successfully a fairly steady supply of meat in place of the monotonous tinned and barrelled stuff in general use. About the only other work the Indian is capable of is rough unskilled work with pick and shovel, or the axe and hoe, but the steady application and the long hours demanded by the outside world are so monotonous and different from what he has ever been accustomed to, that most Indians soon become fed up, if not actually dissatisfied and restless. Either the ingrained love and desire for change, or intense nostalgia set in and overrule all other considerations, and he will probably disappear during the night

leaving his wages or payments unclaimed.

Apart from the monotony and strangeness of work, the difference between the food of civilization and that of the tribe are the principal causes of this nostalgia. It is generally on far distant fringes of civilization, that the Indian finds employment and there the food is often a monotonous diet of rice and cassava in some form, with salted beef, pork or fish from a box or barrel. In his own home, cassava is the staple food, but his ability as a planter provides him with numerous side dishes and changes while the adjacent forests and streams furnish an unending variety of game, fish, fruit, or things he considers as delicacies. I have often heard an Indian say he had not eaten a certain form of game for some time and he must go hunting specially for it. This may mean a long trek into the forests, as for instance, to secure a few loads of Brazil Nuts. I have known village after village close up their homes to go some 40-50 miles into the forests to gather a supply. Such a trek takes on the aspect of a general holiday free from the cares of house or field. They move leisurely along over a few miles only per day, taking every advantage of game en route or any fruits in season. The women also have an enjoyable time, as they are relieved of many home chores, the attention to their cultivation and the carrying of supplies from the fields. They carry as much concentrated food as may be required in the form of cassava bread or meal, and their main work is cooking, the everlasting preparation of food, but it is much simpler than at home. Both sexes,

however, find much along the route which when collected can be carried home for use in their domestic economy for months to come. When they eventually return home they are invariably heavily laden, not only with nuts, but barbecued game and a weird assortment of leaves, lianos, barks, woods and even stones that some day will be of considerable use.

I was working once in the high forests with some 60 Indians at a distance of fully 200 miles from their tribe, on a contract of considerable importance, that called for some four months of hard steady intensive labour in order to finish on a given date. For some two months the men worked splendidly, then they seemed to wilt. Progress became slower and slower each day, and I realised I would have to do something or I would probably find a deserted camp some morning. There were no complaints, question them as I liked, but I got an inkling from a conversation I heard round the camp fires one evening, so under the pretext of a necessary survey ahead with four men, I declared a general holiday for two days in which all hands were to scour the surrounding forest to any possible radius, in quest of fruit and game. I met a drove of wild hogs on our survey, and shot sufficient to load up my men so heavily that we had to cache a good amount some miles from camp. When we returned, we found each party had been equally successful each in its own line, and a third day's holiday was indicated to bring in the surplus, to gorge to capacity and to digest. On the fourth morning every one turned out to work with his old snap and laughter, perfectly happy again and satisfied. At the end of another month I had to

repeat the holiday hunt experiment, which proved just as successful and the result was that the work was completed well ahead of contract time to the astonishment of the entire district where the betting had been 100 to 1 against my getting the work completed with my Indians. I have never driven my men as I did on that work, yet they even expressed regret that the work was over, when I handed them their wages.

I have explained at length some of the underlying needs and currents of life that tend to give rise to some of the peculiar customs and habits of the Indians. From sheer ignorance of cause and effect in their lonely untouched lives most people class these people as a lazy, thriftless, treacherous, nomadic lot of vagabonds. No one can say they are idle or lazy, although they may produce only the necessary supplies according to the needs of each. Actually they are hardworking, missing nothing as a rule, and possessed of very acute powers of observation and a high technical knowledge of their environment, and the majority of such economic factors as affect the art of living with little help from outside.

They may appear thriftless, but that is largely because they are socialists in practice rather than in theory. No Indian can refuse a request from another unless he really has not the article asked for. If such be a manufactured article it enters the realm of trade and becomes subject to the tribal custom and habit of barter, but if it is something in the way of food whether the product of the field or chase it must be given free with no condition attached, except the communal understanding that, through change

of circumstances, the giver of to-day may be the beggar of to-morrow, when he will receive on similar terms. The Indian has no system of transport from his hidden fastnesses and no trade with the outside world beyond such as will secure a minimum of necessary iron in some form. His major product is food of some kind and this is perishable and as visitors are few and often many years between, naturally he produces to the best calculation only sufficient on the average for the annual needs of his own family. Climatic conditions and various other factors may affect his calculations very largely, both on the plus or minus side, for which outsiders should make due allowance in pronouncing sentence.

The Indians are nomadic to some extent, generally through circumstances beyond their control, which though stupid to us, are very real to them. 'Treacherous' is a poor word in the light of centuries now of persecution. The Indians of South America were in the main non-agressive, if not actually hospitable as far as their limits went to the first pioneers of civilization, an attitude soon taken advantage of. For centuries, they have been so harried by newcomers in search of wealth and cheap labour, that their every form of tribal government or co-operation has been disrupted and broken until to-day the tribe must hide in some deep, almost inaccessible part of the forests or face absorption or extermination. It is small wonder that there have been sporadic retaliations, generally ambushes as the wooden arrow is of little use against the steel or bullet of the oncoming hordes.

All Indians on first contact suffer from a dreadful inferi-

ority complex. Little wonder ! There steps into the clearing an apparition with the semblance of a human being, hob-nailed boots, puttees, long trousers, shirt, hat with a long knife pendant from belt, and across the shoulder is thrown a gleaming weapon (a gun) completely unknown. The colour of its eyes and skin are strange and it emits a weird, unknown, nauseating aroma. (To himself the Indian is odourless, the white man smells, and the negro stinks). The person is something completely beyond his knowledge, to be met with suspicion, awe, fear and almost reverence, but it is very rare, if ever, that the tribes who view the white man for the first time, put up immediate and active opposition. I have personally made the acquaintance of the following tribes in the most distant recesses of the forests in the North of Brazil:- the Waiwai, Parikuta, Mapidien, Waiwe, Chikena, Kumayona, Tonayena, and Diau, not a single individual of whom had ever seen a white man with one exception. The exception was an old man who as a child saw Sir R. Schomburg descend the Trombetas River. The tribe had notice of Schomburg's approach and the women and children of the village were sent away into the forests to hide while the men and old women remained to receive the party amicably. One woman and her young son were put in the branches of a very high tree from which a full view could be obtained so as to be able to signal to the other women and children as to what was transpiring in the village. This young son was now the old man I met, and he certainly was the most frightened Indian I have ever seen, on our unexpected appearance.

our unexpected appearance.

Not a single member of these various tribes gave me the least worry or annoyance, beyond standing around in a group, fully armed with bow, arrows, and such knives as they possessed, for some hours. I had been warned of certain danger and probable extinction from all these tribes, and I was on the outlook for trouble. In most cases it was difficult to get a lingual contact at first, but a display of a few articles of barter, the presence of other Indians with me and a courteous demeanour according to tribal ideas, soon gained the confidence of even the most stubborn, after which it was plain sailing. My party had some six to eight languages at its command, and in a day or two collectively we picked up enough language of each tribe to be able to understand them. Amongst the Diau tribe, in or immediately South of Dutch Guiana, I was able in a few days to pick up their "talkey-talkey", the go-between language of the Bush Negroes who intercept them from reaching the sea front and civilization of Cayenne. To me, the idea of such Indians holding for ransom any people such as Col Fawcett, or Aviator Redfern (who actually crashed in Diau territory) is completely untenable. For one thing, they have no more idea than Adam what ransom is, or means.

Subsequent relations between any visitors and the different tribes depend wholly on how the tribes are treated. In all cases, fear or shyness disappears and it is up to the visitor to deal fairly and squarely with them, backed by a little firmness and tact and so guide the relations and impressions, now being made for the first

time in history, into the proper channels of respect and confidence. Familiarity breeds contempt, and the clay of the feet of the almost godlike visitor soon emerges. Very, very few white men can ever hope to equal the Indian entirely in his own environment. His powers of observation and local knowledge are constantly at fault, hence every Indian soon appreciates his own superiority in many practical lines. It is the tribes that make most contact with civilization and begin to ape its vices (usually inevitable) who from an inferiority complex, swing to an obnoxious extreme and become cheeky, impudent, immoral and rowdy, but if the wild unsophisticated tribes when met are treated fairly and honestly with some degree of respect for established law and custom, it has been my experience that the visitor could wish for no more faithful helper or agreeable companion during his wanderings in the forests.