

LONGHEAD

THE STORY OF THE FIRST FIRE



C.H. ROBINSON

L O N G H E A D:
THE STORY OF THE FIRST FIRE

Works of
C. H. ROBINSON

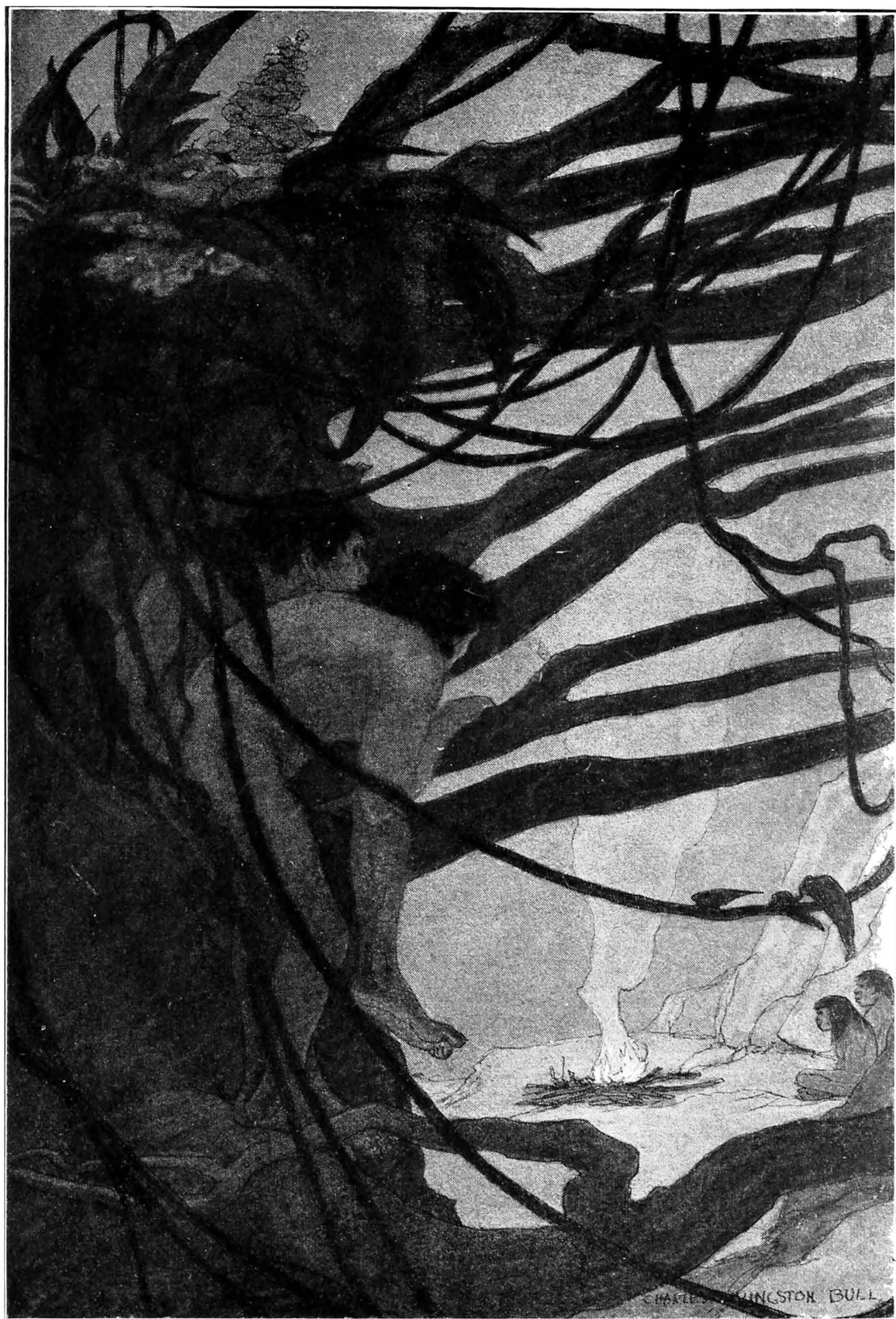


LONGHEAD: The Story of
the First Fire Net \$1.00

HAWK: The Young Osage
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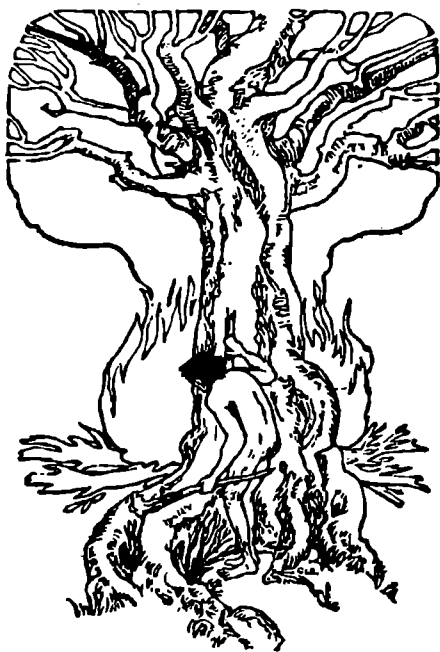
“ THEY CAUGHT SIGHT OF THE LIGHT MADE BY THE FIRE.”
(See page 63.)

Longhead:

The Story of the first fire

BY
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CHAPTER I

INTRODUCTION OF FIRE

“ A fire-mist and a planet,
A crystal and a cell,
A jelly-fish and a saurian,
And a cave where the cave-men dwell;
Then a sense of law and beauty
And a face turned from the clod,—
Some call it Evolution,
And others call it God.”

A STRANGE - LOOKING animal was running across the open glade toward the forest. It looked something like a human being, but was entirely naked. Its body, except on the palms of the hands and soles of the feet, was covered with

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reddish-brown hair, but on the head it was nearly black and long and matted; while on the rest of the body it was short and curled — nearly fur, in fact. Its arms were long, reaching below the knees, and the great toes, as it ran, stood nearly at right angles to the others.

The animal carried no weapon of any kind, if we except a club or staff broken from a dry branch, which it seemed to use in maintaining an upright position as it hurried toward a large tree with pendent branches which stood at the edge of the forest.

Just as the creature reached the outer branches, which extended nearly to the ground, a storm, which had been rapidly approaching, burst with great violence. There was a loud clap of thunder, a bolt

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of lightning tore the tree to splinters, and the animal fell to the ground, stunned by the shock. It lay unconscious for some time, and the thunder shower had passed, leaving the sun shining brightly, when it raised its head and sat up. At first it slowly rubbed its body and head, and then, reaching full consciousness, its attention was attracted by a roaring and crackling sound a short distance away.

The lightning had prostrated the tree and had set fire to a mass of brush and logs lying at its roots. The beast sprang to its feet in astonishment and alarm.

The animal was one of our primitive ancestors, and he now saw fire for the first time.

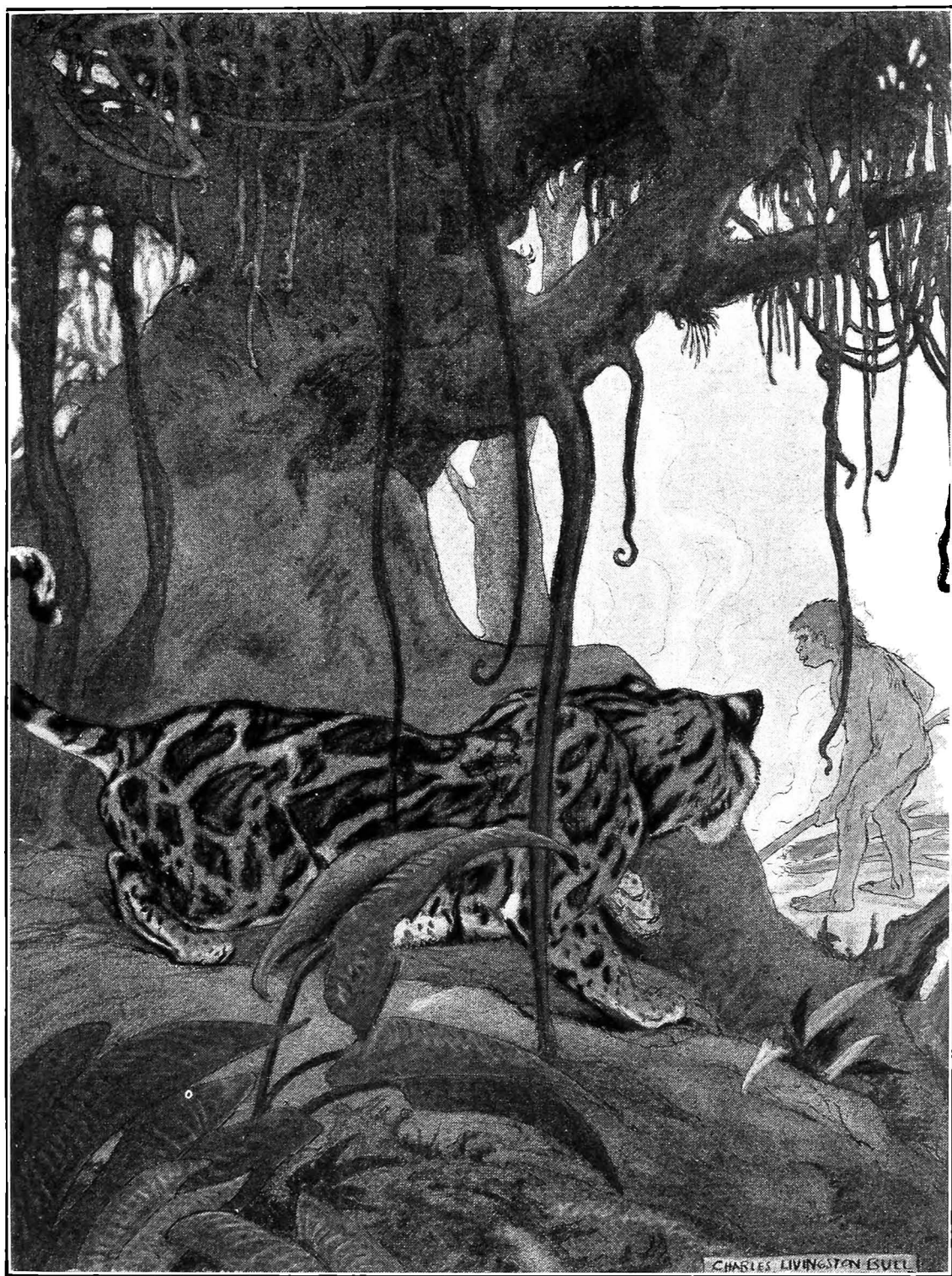
As his body, chilled by the recent rain, began to feel the warmth, he first drew

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near, but as the heat increased, he was compelled to withdraw to a greater distance. He gazed as if fascinated, however, at the curious sight for a long time.

When it began to grow dark, he was surprised to see that the forest for some distance around, remained nearly as light as day.

His feeble intellect, however, soon wearied of the new sensation, and he withdrew to an overhanging rock near-by. He knew of a small cave at its base with a narrow entrance, and of this he at once took possession, rolling against the opening some masses of stone lying near and piling in others after he had entered, until he had secured the opening against any dangerous animal. He gave little further thought to the phenomena of the



“ A HUGE TIGER WHICH WAS SLOWLY CREEPING UP BEHIND HIM.”

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fire, for man had not yet reached a development in intellect which permitted a consecutive train of thought for any considerable length of time. He slept soundly, but when he crawled from his refuge in the morning, the smoke still rising from the pile of logs and brush attracted his attention and recalled to his mind what had occurred the evening before. He approached the fire, which had nearly consumed its supply of fuel, but was smouldering still in a large decayed log and the ends of several poles which lay partly in a bed of glowing coals.

So much was the man now interested in this new phenomenon that he forgot for a moment his usual caution when in the forest, and failed to observe a huge tiger which was slowly creeping up behind

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him, and, but for the sharp sound of a dry stick breaking under the animal's weight, this story would have ended then and there.

The man had just drawn from the fire a burning pole and was examining with much curiosity its glowing end, when the sound caused him to turn, only to meet the tiger, which had made its leap. The man bounded to one side, and at the same time, more by accident than design, he thrust the burning stick against the animal's breast. The fierce beast came against it with such impact that it penetrated through the skin and into the flesh. With a scream of terror and pain and many snarls and spits, the tiger began biting the injured spot and then turned and fled into the forest. Our man, who had given

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himself up for lost, stared in bewilderment at the retreating animal and then at the pole which had saved his life. He thought longer and more deeply than he had ever done before, as he stood beside the smouldering embers. Without any particular reason for his action, he gathered up some of the unconsumed ends of the branches, cast them into the coals, and was much amused to see them ignited and the flame renewed. It was a new plaything, and for a long time he continued to pile sticks upon the coals and to delight in the bright flame, the ascending smoke and the crackling sparks; but that he could make any practical use of his new discovery had not yet been suggested to his feeble intellect.

Tiring at length of the sport, he real-

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ized that he was hungry, and, turning into the forest, he sought for food. For some hours he roamed the hills and valleys, striking down with his stick a small animal which he devoured raw; finding a few grubs under fallen logs which he turned over; and he found also a few berries, prematurely ripened, and finally satisfied his ravenous appetite by filling his stomach with buds of shrubs and some succulent roots, which experience had taught him were not injurious and were at least satisfying.

By this time he had reached a part of the forest in which he had been making his home for a few weeks and, seeking out a tree, in which he had constructed a sort of nest with interlaced sticks and leaves, he lay down for a nap. He

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wakened late in the afternoon, climbed to the ground and started on an aimless walk through the forest, carrying his stick, but no other weapon, for other weapons than stones for throwing and sticks for striking were then unknown.

Most of the people in the group to which he belonged had short round heads, such as scientists call brachiocephalic, but this man was dolichocephalous, or long-headed, and this peculiarity had given him the name of Longhead among this group at the few gatherings of these people, which happened occasionally, more by accident than design, for they had no social organization whatever. They had no laws; no leaders; no permanent habitations and wore no clothing. They slept in nests built in the branches

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of trees at night, or sought shelter in any chance caves of the region through which they roved. This had no defined boundaries and they remained in the locality only because they found food fairly plentiful.

As yet, there was not even family organization, for it was many ages after this time before it dawned upon man anywhere that the male animal played any part in the propagation of species. To the ordinary and usual phenomena of nature our primitive forefathers never gave a thought or question, but accepted them without speculation as to their cause or fear as to their continuance, so long as regularity obtained. The rising and setting of the sun were to him perfectly natural events of daily occurrence from

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his childhood, and had so continued during the recollection of the oldest members of the group, and it was only when eclipses occurred, breaking this orderly continuity, that he felt at all alarmed. It was natural for the moon to shed her soft light when not obscured by clouds, and even its waxing and waning occasioned no alarm, for this, likewise, had continued "since the fathers fell asleep." There was nothing strange about the gentle dew descending by night or rain falling from the clouds; these he had observed from his earliest youth; but when the loud thunders reverberated through the hills, and the forked lightnings flashed athwart the sky, frequently rending the giant trees of the forest or bringing sudden death to a comrade, this

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mysterious and dangerous display of an unknown power, was, to him, alarming, and he early attributed these and all other infrequent or unaccountable phenomena to supernatural beings with whom his fancy peopled the hills and forests, the rivers and the sky.

It was entirely natural to primitive man that in the spring the trees and plants should bud and send forth leaves and blossoms, to be followed later by fruit, "each after its kind." This, also, had always occurred from his earliest recollection and that of his elders, and it occasioned no thought upon his part. It was only when floods, drouths and other calamities interfered with this orderly sequence of events that any mystery was presented or any thought required. It is

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clear that among these common and natural occurrences, which were simply accepted without question because they had always happened, must be classed the bringing forth of young by all mammals. Man had always observed that the females of all the animals about him brought forth young, "each after its kind." This was to be expected and gave him no surprise, nor, in the then condition of his intellect, did it give rise to a thought as to its cause. Likewise, his own womankind gave birth to young, from time to time, just as did the other animals, and there was no cause for speculation or thought in regard to this; the occurrence was too common to be a mystery.

There being then no knowledge of

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fatherhood, there were no fathers, and for many generations no relatives were known except in the female line. Consequently, there was no family hearthstone; no paternal love; no marriage. The relations of the sexes was purely physical and were generally indiscriminate, as opportunity might afford; but doubtless, with some, this companionship was continued for a longer or shorter period, as circumstances or congeniality might induce.

In these ages, and they were long ones among some peoples, it is obvious that there could have been no such emotion as paternal love, for no man even suspected that he was a father. No man experienced the exquisite pleasure of hearing the first cry of his first-born child; no

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man heard "Dada," from infant lips. No man assisted in the support of his children or took part in their care, except unconsciously as he aided in the maintenance of the children of the group or tribe; no man cared more for the mother of his children than he did for any other woman who might attract his fancy or passion. Above all, the men and women of that long epoch were strangers to the sacred companionship, the life-long attachment and communion of souls with mutual interests which attach to the true marriage of to-day. The children were the common care of the group or tribe; the boys that they might grow up to be hunters and warriors, and the girls that they might contribute to the sensual enjoyment of the men, or, if it pleased the

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spirits, or stars, or some other supernatural agency, might become mothers for the perpetuation of the tribe. In times of extreme danger, famine or privation, or when too feeble to follow the migrations of the group, the babies, especially the female ones, were ruthlessly abandoned to wild beasts or slaughtered outright. There existed, doubtless, the mother instinct which prompts females, even among the lower animals, to care for and defend their offspring, but it certainly fell far short of the mother love among civilized peoples.

After wandering aimlessly a number of miles, Longhead encountered a female of his own species who was not altogether unknown to him. They had met occasionally at the infrequent gatherings of

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the people who inhabited that part of the forest, and on one or two occasions had remained together for a few days in that anomalous companionship which took the place of marriage in those far-off days. There was no kiss, caress or other sign of affection or pleasure; the pair merely gave each other a friendly grin and grunted in a satisfactory tone. Words were scarce in the vocabulary of the people of that epoch, and they communicated with each other largely by means of signs, gesticulation and pantomime. The woman could not have been called handsome, according to our ideas of beauty. She, too, was naked and hairy, but the hair on her head was longer and less matted than on that of the man, and was held back from her face by being

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drawn behind the ears with a strip of bark twisted about her head to keep it somewhat in that condition. Her body was smaller than that of Longhead; but her limbs were slender and ungainly and her stomach also protruded, in consequence of the quantities of coarse vegetable food required to sustain life. By an accident in childhood, she had lost one of her front teeth, and on this account, she was known as Broken Tooth.

The woman soon gave Longhead to understand that she was hungry. The protective, or probably, the sexual instinct, prompted him to act as a provider, and he offered to assist her in a search for food. Together they roamed, finding here a few grubs and there a juicy root, and finally the man killed a small animal

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with his club, which they shared, Long-head tearing it in pieces with his hands and teeth and throwing small pieces to Broken Tooth, which he admiringly watched her devour. Her appetite finally satisfied, she lay back in the sunshine against the roots of a tree, closed her eyes in great contentment, and began a conversation with her companion in the few words then constituting the human vocabulary. She recalled their last meeting and asked why she had not seen him at any of the gatherings of the group since. He told her that in consequence of the jealousy of one of the giants of the group to which they both belonged, who had resented his attentions to one of the females of his harem, he had become involved in a fight with the giant in

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which he had been beaten nearly to death, and that, fearing to remain with his fellows, as well as on account of his serious injuries, he had retired to a distant part of the forest where he had found sufficient food and had recovered his strength. He told her that he had rather enjoyed his isolation and, had present company been with him in his forced retirement, he would have been entirely content. At this statement, the woman merely gave an incredulous sniff.

The man then related numerous encounters with wild animals, in which, of course, he had come off successfully — and just here he recollected his strange experience with the fire and his encounter with the tiger. With great truthfulness, and as much detail as his

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vocabulary permitted, he told her what had occurred to him the evening before and that very morning. How, seeking for refuge from a storm, he had been suddenly stricken unconscious, by what means he did not know; and the strange sight he had witnessed on recovery. He told her, also, of his adventure with the tiger that morning and its discomfiture. Broken Tooth laughed long and loudly at this and was wholly incredulous. Such a thing had never happened before, and consequently could not have happened now. She asked him what kind of a weed he had been eating, and said she was not born yesterday to believe such nonsense. This led to quite a discussion, the man insisting upon the reality of his experiences and the woman

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ridiculing the whole narrative as impossible. The colloquy finally ended by her asking him to conduct her to the place where he claimed such wonderful things had happened, that she might see if anything remained there to confirm his absurd story. Longhead assented and, as it was not far distant, they arrived at the locality a little before dark. The fire still smouldered in the decayed log and numerous sticks still smoked at their ends. Mindful of his morning's amusement, Longhead gathered a number of the burning poles, placed their glowing ends together and threw on them some dry leaves and twigs. In a moment a column of smoke began to ascend, followed soon by a tongue of bright flame and many rising and glowing sparks.

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One of these Broken Tooth caught in her hand, but dropped it with an exclamation of pain. "If a small one hurts so much, I don't wonder your tiger fled when you thrust a large one against his breast," she said.

Long they played with the fire, throwing upon it sticks and dry branches, and the woman clapped her hands and screamed with delight at each succeeding shower of sparks.

When at length night came on and the darkness made the firelight more brilliant, the man piled a large number of sticks on the fire to show how the forest was lighted up; but finally both became weary of the sport, and then he told her of the cave near-by — just large enough for two — and invited her to share it

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with him for the night. She consented, and as they were about to start, the man, without any thought of the effect, gathered up four or five of the sticks with live coals at the end and placed them together. These he waved in the air to amuse the woman with the flying sparks, as they passed along, she still screaming at each successive sparkle, until suddenly a bright flame shot up and, by accident, like many other valuable discoveries, a torch was invented. By its light they easily made their way to the rocky platform in front of the cave sheltered by the overhanging rock, and when Longhead cast down the torch Broken 'Tooth placed the ends of the burning sticks together as she had seen him do, and again the flame shot up. The new experience was too

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delightful to be given up, and, at the woman's suggestion, they gathered large armfuls of dry branches and some heavy logs which lay scattered about near the platform, which they piled up and from time to time added to the fire.

The night was cool, but as they sat back against the wall of rock under the sloping cliff to watch the blaze and flying sparks, a pleasant warmth, new to their experience, pervaded their bodies, and they gave themselves up to the luxury of the sensation.

The fire roared and blazed merrily, Broken Tooth shouted in glee, and Long-head began to think, in a slow ponderous way, that this new agent in his life might do much for his comfort if it could be perpetuated, but his mental power was

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too limited to suggest any method for this.

Their shouts and laughter had attracted the attention of the wild animals, and all at once Broken Tooth saw two glowing eyes and the crouching form of a great tiger almost at the edge of the platform. Longhead caught sight of it at the same moment, and with a yell of fear each scrambled for the narrow entrance of the cave. Broken Tooth, lighter of form and quicker of movement, reached it a moment the soonest, but no promptings of sex, gallantry or politeness prevented Longhead from throwing her roughly to one side while he attained the coveted shelter. Once within, he began to fill the entrance with stones, leaving his companion to the fate

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which he supposed had already befallen her, when, greatly to his surprise, she tumbled in unhurt. Filling the entrance so that it would not admit the body of the tiger, they peered together through the openings and saw the disappointed animal pacing back and forth just at the edge of the semi-circle of brilliant light made by the fire. Long they watched the baffled beast, and at first they were unable to understand why the animal did not approach the entrance and attempt to remove the stones and secure his prey. At length Broken Tooth said: "I believe he is afraid of the fire." She did not, of course, use the word "fire;" she probably said "brightness," or some equivalent word, if they had one. Longhead agreed that this might be the case, and together

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they watched the animal with great interest. Finally Longhead, emboldened by the tiger's hesitation, removed one of the stones, and, protruding his head, shouted in derision at his ancient enemy. The animal, whose rage or hunger made him momentarily forget his fear, made a dash toward the cave, but, when he came within the bright light and felt the heat of the fire, he retreated precipitately. Longhead finally crawled outside and Broken Tooth soon followed him. They taunted the great cat with the vilest words they knew; threw stones at it, and simply revelled in their new sensation of safety. Here was Old Saber-Tooth, the one animal of all others whose vicinage carried terror wherever he went, at bay at last. For a while the animal would

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make dashes toward them, when Broken Tooth would tumble into the cave and Longhead draw near the entrance, ready for instant retreat to safety; but each time the fear of the fire sent the tiger back beyond the charmed circle of its light, where it gave vent to its disappointment in savage growls and spittings. At length, wearied by the unprofitable labor, and awed by the strange light and heat, the beast disappeared; its snarls and growls grew fainter in the distance and ceased to be heard. Saber-Tooth had at last found something he feared, and man a protector.

Delighted with this new feeling of security from danger in the night, the man and woman sat long before the cheerful blaze and enjoyed its grateful warmth.

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They agreed that wild animals were afraid of this new agent, and if they could always have its protection they would have nothing to fear from them; but to their weak intellects no thought of an attempt to perpetuate the fire was suggested.

When their fuel was exhausted and nothing but a bed of glowing coals remained, they retired to the cave, carefully closing the entrance against the possible return of the tiger or the attack of some other animal, for they realized that the fire, being now nearly out, they could no longer depend upon it for protection.

Late in the morning Longhead and Broken Tooth emerged from the cave. The fire was out and the ashes cold. When they thought of the pleasurable

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warmth it had produced and the protection it had afforded they indulged in some expressions of regret that it was gone, and then thought no more about it. They soon made their way to the place of the smouldering log, but it was now nearly consumed. Directly the woman noticed two or three tiny threads of smoke, and on investigation they found that some dry excrescences, which we call "punk," had fallen away from the burning log and that on one side of each was a small spark. Broken Tooth took up one of these and, noting the white ash so like the down on certain plants which she had often blown away in sport, she blew upon it as she held it in her hand, and was delighted to see the spark spread and glow afresh. Longhead, too, picked up a piece of the

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lighted punk and, after blowing upon it for a few minutes, dropped it carelessly at his feet, where it fell upon some dry rotten wood and leaves. Without noticing this, he watched the amusement of his companion as she made the sparks fly from the piece she held, and then, suddenly, with a yell of pain, he jumped aside and hopped about on one foot, holding the other in his hand. The rotten wood and leaves upon which he had dropped the punk had ignited and the fire had reached his foot. He now understood the defeat of the tiger the morning before, and had ocular and painful demonstration of the fact that punk will retain fire, at least for a few hours.

Longhead now seemed to wake up; at last he had an idea, and he talked it over



“ AFTER SOME VIGOROUS BLOWING, PRODUCED FLAME.”

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with the woman as they slowly returned to the cave platform, each carrying a piece of the lighted punk. Once there, the man sought for dry, rotten wood and small twigs, which they piled upon the punk and, after some vigorous blowing, produced flame.

An idea was born; a discovery was made; the greatest in all time. Broken Tooth remained to maintain the fire by putting on fresh fuel, while Longhead carried armfuls of sticks and logs from the forest, together with pieces of punk for future use. The punk he piled at the cave entrance to keep it dry, and man was now master of fire, the most beneficent of nature's gifts. Thenceforth it only remained that a plentiful supply of dry fuel and punk should be maintained at

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the cave, and their comfort and safety were assured.

Their delight at their mutual discovery — for Longhead insisted that if Broken Tooth had not blown upon the punk for amusement, he would not have discovered a method for the preservation of the fire — drew the two closer together as having a great secret in common. The necessity that the fire be supplied with fuel that it might be kept alive, and that fresh fire might occasionally be applied to the pieces of punk, suggested that one should remain for that purpose; and when Longhead proposed that the two should remain permanently together, the woman to keep the fire alive while the man sought for food for both, Broken Tooth agreed at once; and thus

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came about the first union resembling marriage in which the man became the provider and the woman the home-keeper.



CHAPTER II

WEAPONS — COOKED FOOD — COM- PANIONSHIP

FOR some months the man and woman maintained their residence in the cave, uninterrupted by any visits from other human inhabitants of the forest. Daily Longhead went forth in search of food, which he brought to the cave and they shared it together. Sometimes there was plenty, but often their meals were scanty, as the only weapons then known were stones and clubs. Broken Tooth aided to some extent, by searching a piece of low moist ground not far from the cave

Weapons — Cooked Food

for such roots and tubers as were palatable, and altogether, they managed to sustain life as well as before their union, but the woman never ventured far from the platform for fear that by some accident their precious fire should go out.

Every night the fire blazed merrily upon the platform, fed with dry branches and large sticks, which it was the task of the woman to procure during the day. Frequently they saw wild animals in the forest at night or heard their growls as they prowled in the surrounding thickets, but never after their experience with the tiger the first night of their fire, did one venture within the charmed circle of the light made by the flames.

Sometimes when it rained or the weather was cold, and sufficient food re-

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mained over from the night before, Longhead lingered about the cave and platform all day, enjoying the warmth and comfort of the fire, and on these occasions the couple talked much of the benefits of their new acquisition.

One day Broken Tooth said: "What shall we say if some of the people wander this way and find us? What shall we tell them about how we came in possession of this new comfort?" Then they talked about this long and earnestly. They had no desire to benefit their fellows by sharing with them their accidental discovery, for man was yet a purely selfish animal, and there was no organized society of any kind; but they both recognized the fact that when others became acquainted with its benefits, they would

Weapons — Cooked Food

soon acquire the fire, by force if necessary, and that their own lives would stand for nothing, should they resist. They felt sure that the matter could not long be concealed from other members of their group, for the first hunter who should wander to that part of the forest would smell the smoke and would investigate. It was finally concluded that, as they did not themselves know how the fire had originated in the heap of logs and brush, they would say Longhead himself had produced it in a mysterious manner, which they dare not reveal for fear it might be taken from them.

That they might not be observed in the mornings kindling the fire with punk and tinder, and their secret be thus exposed, it was agreed that all the punk should be

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kept in the cave, the fires lighted there, and only brought out on the platform after the sticks were ablaze.

Every night two pieces of punk were ignited and laid carefully up on a small natural projecting shelf in the cave. They used two pieces, fearing that by some accident one might become extinguished. The fact is, this very thing did happen once. The lighted punk had been laid back against the rear wall of the platform when they went to bed, but a violent storm had come on in the night and the rain had been driven in so that the punk was wet and the spark gone in the morning. Their precious fire was only saved by Broken Tooth finding a tiny spark on the under side of a log which the water had not happened to reach. They had

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been greatly alarmed, and so two pieces had been thereafter lighted and both taken into the cave to avoid such another mishap.

This peaceful enjoyment of their new-found happiness and companionship had continued for some months, when one evening a small animal which they were about to tear to pieces for their evening meal, fell into a large bed of burning coals on the platform. Longhead was about to recover it when Broken Tooth, whose sense of smell may have been more acute, said: "Wait a minute; what is that delicious smell?"

Up to this time they had still continued to eat their food raw, and there had been nothing to suggest to the mind of either that it would be better if exposed to heat.

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Now they continued for some minutes to inhale the new and agreeable odor, but it had the effect to make Longhead ravenously hungry, and he soon drew the animal from the coals with a long stick. When he began to tear it the hot carcass burned his fingers, which alarmed him at first, but the demands of his appetite must be satisfied, and, tearing it in pieces, he divided with the woman. At first they both tasted gingerly and were a little afraid of the unaccustomed heat, but before either had finished the first morsel their pleasure was evident. They devoured the whole of the animal, and declared it the finest eating they had ever experienced. Two or three other small animals lay beside the fire and they decided to repeat the course. Both had ob-

Weapons — Cooked Food

served that the portions of the first animal which had been most exposed to the heat had been made tender and more appetizing, and, on the suggestion of Broken Tooth, a long slender stick was thrust through an animal, which was by this means held over the hottest part of the bed of coals by Longhead, who turned it from time to time, that all parts might be thoroughly cooked. This was so much better than the first that their appetites returned with renewed vigor, and when the second animal had been eaten, they again repeated the courses until all the food on hand had been devoured. They both declared that roasted meat was far superior to raw, and agreed that this should be the method of preparing meat for the future.

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One day when Broken Tooth returned from the swamp with some wild carrots and other roots, she thrust one into a pile of hot ashes and burning coals, merely as an experiment. She left it there while she collected some fuel and replenished the fire, and when she drew it out and tasted it she was pleased to find that roots also were much improved by cooking. When Longhead returned in the evening he was treated to a surprise — supper of two courses, broiled wood-rat and roasted carrot.

Everything to be used for food was thereafter submitted to the cooking test, and, whenever broiling or roasting in the ashes seemed to improve the taste of any article of food, this was adopted.

Longhead and Broken Tooth now

Weapons — Cooked Food

found themselves really caring for each other and each sought to do things to please the other. As far as they were concerned, the old selfishness was now gone. Their close companionship around the fire alone during the evenings; its cheerful light and gay sparkle, its warmth and comfort tended to promote conversation and they found themselves talking more than they had ever before in their lives. They even coined a few words to express their new experiences and feelings. Longhead would relate in detail the hunting adventures of the day and Broken Tooth would recount her own experiences in search of roots and eggs.

Both thoroughly enjoyed their new life at the fire-cave; indeed, it seemed to them they had never really lived before.

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Nearly every day Longhead would go into the forest in search of small animals for food. In his absence Broken Tooth first collected sufficient fuel to keep the fire alive for another twenty-four hours, then she would visit the low ground for roots and tubers, eggs and nuts, for since they had been experimenting with roasting, they had discovered that a number of roots which had been rejected as bitter and unpalatable, when raw, were much improved by roasting, and these had been added to the bill of fare. Broken Tooth had found nesting places of the waterfowl which frequented the swamp. Her first experiment in roasting eggs had been a partial failure. She placed a couple of eggs in the hot ashes, noticing at the time that the shell of one was cracked; soon

Weapons — Cooked Food

there was an explosion and the egg with the sound shell was destroyed. Thereafter she made a small hole in each for the escape of the steam and all went well. Her worst trouble with eggs was the want of a receptacle for transporting them to the fire-cave, for she wore not even an apron.

When evening began to draw near, Broken Tooth found herself looking often into the forest and wishing for Longhead's return. She sometimes feared a savage beast might have killed him. This was a new feeling for her. In the former life she had never cared for any one or cared particularly to see others. One evening when the man finally appeared, she ran into the forest to meet him and put her arms around his

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neck. Longhead looked at her in some surprise and then returned the caress, and they walked arm in arm to the platform. That evening they both talked a great deal, and finally Broken Tooth said: "I wonder what has come over both of us. Even when together for a short time in the old days, we spoke but seldom. I wonder if it is the fire."

It was indeed the fire, with its warmth and cheer, so different from the old days when each had shivered in the fork of a tree or had spent the night in a dark and noisome cavern. Neither understood the nature of the change which was being wrought in them, but if it was not yet real marriage, it was at least the germ which in the long succeeding ages has developed into real marriage.

Weapons — Cooked Food

One morning a cold rain was falling and Longhead sat long before the blazing fire, loth to leave the comfort he found there for the chilly and dripping forest. He drew a long slender stick from the fire and began to observe its glowing end. As the ashes accumulated and hid the red coal, he blew them away. After a few minutes, the fire on the stick went out and the man, picking up a piece of stone, began idly and without purpose to scrape away the black or charred portion of the end. When he reached the unburned wood, he found it very hard and as he continued to scrape, he finally brought the stick to a very sharp point. He felt this and thought it might be very good for killing small animals, so when he finally started out for his day's search for food,

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he took it with him. It was fortunate he did so, for late in the afternoon as he was turning toward home, after an unsuccessful hunt, a pack of wild dogs attacked him. So close were they upon him before he was aware, that the leader sprang at him to pull him down just before he reached a tree in which he was about to take refuge. In defense, he thrust the sharpened stick at the beast with all his might. It passed clear through the body of the dog, which fell dead and was quickly devoured by its fellows, while the man scrambled to safety. When Longhead climbed down, after the dogs had dispersed, he secured the sharpened stick, and it was with a new feeling of safety he moved through the forest, spear in hand; for a spear had been invented.

Weapons — Cooked Food

A few days later he even ventured to attack a wild dog he found separated from the pack; a thing he never would have done when armed with only a club or stone. He killed the animal and carried it in triumph to the fire-cave, for it was the first time, to his knowledge, a man, ever, single-handed, had killed so large an animal of a ferocious kind. Its roasted flesh supplied the man and woman food for several days.

One day, when kindling a fire on the platform, the woman was too indolent to remove some small boulders from the spot where she desired to make the fire, so she piled the fuel over them and was surprised to find that the fire kindled more readily and burned better on account of the fuel being raised from the

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ground, and thereafter, three or four stones were used to support the sticks. One morning, after the fire had burned for some time and the stones were red hot, a smart shower came up. The fire was too far under the slope of the shelving rock to be directly affected, but as it continued to rain for some time, a small pool accumulated on top of the rock, which finally worked its way through the bed of leaves that had dammed its progress and, all at once, it poured over the face of the rock in a small column and fell directly upon one of the red-hot stones in the fire-place. The stone was a large nodule of flint; there was an immediate explosion, a dense cloud of steam and ashes arose, and the alarmed owners of the cave rushed for safety to its depths.

Weapons — Cooked Food

When all was quiet they emerged to find that one of the stones which supported the sticks had disappeared. Instead of the stone, however, there were numerous sharp flakes of flint scattered about, which Longhead first discovered when he cut his foot by stepping on one.

With much curiosity, the man examined the flake which had injured him, then picking up the carcass of a small animal lying near, he found that he could cut it with the flake. He now carefully gathered up all the flakes he could find and carried them into the cave. When he returned from his day's hunt in the evening, he brought with him a long, slender, dry stick which he rubbed and polished with a flake until perfectly

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smooth; then, with some fibrous roots, he bound the longest and sharpest of his flakes at the end of the pole, and the next day carried this with him to the forest instead of the fire-hardened wooden spear. Later, he discovered that narrow strips of rawhide were better than roots for tying on a flake, and, after many years of progress, the long tendons of large animals were substituted as still better for the purpose.

Longhead and his new deadly weapon had numerous encounters with small animals, in each of which he found his new spear superior to anything he had yet tried, and this gave him still greater confidence in himself. He no longer sneaked through the forest half bent to the ground and fearing nearly every animal he might

Weapons — Cooked Food

meet, but went with head erect and a more fearless step.

A few days later, while pursuing some half-grown wild pigs, and when they were about to plunge into a den in the rocks, he threw his spear at the last one, in disappointment. To his surprise, it passed clear through the animal, killing it at once. He carried the pig to the cave and that night sat long before the fire in deep thought. Finally, he selected a long and thin fragment of flint, rather broader than those he had used for the spear, wrapped some small roots about it at one end to protect his hand, and he had a knife — the first one in the world. The next morning he tied a strip of bark around his waist to support the knife, and when he returned in the evening he

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brought with him several dry and slender sticks shorter than his spear and proceeded to bind a sharp splinter of flint to each. Thereafter, he always carried one of these short ones in addition to his long spear, and thus a javelin was invented. He practiced throwing this at every animal he saw, and, indeed, at other objects, and soon became quite expert in its use. He found, too, that it was now much easier to keep the larder well supplied.

In his wanderings, Longhead one day approached quite near the locality in which he had formerly resided with the group, and where he had received the terrible beating which had made him an exile. He gnashed his teeth when he thought of the man who had vented his

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of the women so terrified that they did not dare to associate with the other men; these he kept near himself and compelled them to supply him with food. Longhead had once persuaded one of these women to accompany him on a trip in search of food. They were absent several days, and on his return, Bear had given him the beating. Bear knew him at once, and with a howl of rage and uplifted club, rushed upon him. Longhead was terribly frightened, and for a moment forgot all about his spear, but in a second he recalled the fate of the pig and other animals and, with all his strength, he threw his javelin at the hairy breast of the advancing enemy, now but a pace or two distant. It went nearly through his body and, with a yell of pain, the giant

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threw up his hands and fell to the ground. He tried to pull the weapon from his body, and failing in this, writhed in agony for a few moments and then lay perfectly still. He was dead, and Longhead looked with wonder and awe at his victim.

Fighting was not uncommon among the men of that period, but being without dangerous weapons, the fights had generally resulted in one or both the combatants being more or less seriously but not dangerously injured, and this was the first time Longhead had ever seen one human being killed by another. Deaths he had, of course, known, but they had been from disease, accident or wild animals.

He now heard some of the people approaching, and drawing his javelin from

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the corpse, he concealed himself near-by to observe the effect when they should discover the body. There were three of the party, and at first they thought Bear asleep and shouted to arouse him, but when they discovered the blood and the hole in his breast, they perceived that he was dead.

Longhead in hiding heard no expressions of sorrow or regret, for, to tell the truth, Bear was no favorite with the group. His immense size and irascible disposition had made him a bully, and there were few who had not been beaten by him at some time; therefore, the remarks overheard by the man in hiding were rather to the effect that the finders were well enough pleased, but they expressed great wonder at the wound and

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could not conceive what animal had caused it, especially as there were no marks of teeth or claws or any other wounds on the body. They picked up the corpse, however, and started with it toward the late habitation of the giant.

Longhead left his retreat and proceeded thoughtfully toward the fire-cave. His revenge was gratified and he felt happy on that account, but the wonderful character of his weapon was beginning to dawn upon his dull intelligence, and he no longer feared man or beast. He dimly recognized that with such a weapon a small man was the equal of a giant.



CHAPTER III

GERMS OF SOCIAL ORGANIZATION

AFTER several months' residence at the fire-cave, during which none of their former neighbors had appeared in the vicinity, Longhead and Broken Tooth were seated at their fire one evening enjoying a hearty meal of cooked flesh and roasted tubers and eggs. The man had, thanks to his javelin, brought home all the meat he could carry, the fire blazed merrily and they were enjoying themselves to the utmost when they were greeted by human voices from some trees near the cave. It appeared that a couple

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of their old neighbors had been hunting in that part of the forest and, night coming on, they had sought safety from dangerous animals by climbing a tree. This happened to be so near the cave that they caught sight of the light made by the fire, and the strange sight excited their curiosity. At first, they were greatly alarmed, never having seen fire before, but curiosity soon overcame fear, and, passing from tree to tree, they cautiously approached the platform. When quite near they recognized Longhead and Broken Tooth as old acquaintances and called out to them. They were at once invited to come down, but declined at first, being afraid of the strange light, but, being assured by the man and woman that there was no danger, they soon de-

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scended, and very gingerly and with many pauses, after much encouragement, approached the platform.

The genial warmth of the fire pleased them greatly and they asked Longhead what it was and where it came from. He made vague and mysterious answers and gave them little satisfaction. He told them, however, that the savage animals were afraid of the light and would not come near it, relating their adventure with Saber-Tooth their first night at the cave, and he assured them that if the fire was kept alive by a supply of fuel, one could sleep in the open forest at night without danger, and showed them the effect of putting on fresh fuel. He invited them to remain upon the platform for the night, informing them that but

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one must sleep at a time, the other remaining awake to supply the fire with wood, of which he showed them the pile and instructed them to put but little on at a time, that it might not be exhausted before daylight.

There was a goodly supply of meat at the cave, for the man had been successful in the day's hunt, and he and Broken Tooth now proceeded to cook some of it over the coals. When it was well done, they offered some to their guests. At first they were afraid of it and declined to taste until their hosts had eaten some, but, after the first taste they devoured it ravenously and expressed great surprise and satisfaction at the improvement over raw meat.

At a late hour Longhead and Broken

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Tooth retired to their cave, leaving their guests seated at the fire. They both remained awake all night, replenishing the fire from time to time, as they had been instructed. They thoroughly enjoyed the new sensation of light and warmth as compared with the dark and chilly refuge of a tree-top, and they talked much of this new element and its mysterious character.

When Longhead and Broken Tooth emerged from the cave in the morning, their visitors were gone, and so was the last scrap of meat, for their guests had enjoyed the unusual hospitality to the fullest extent, by spending the night in roasting and eating until gorged, and had taken their departure as soon as it was fully daylight.

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It chanced that they returned to their group of people on the day of a general gathering, and over and over again they told the marvels they had witnessed the night before. Most of their auditors set them down as first-class liars, and not a few told them plainly what they thought of the story. On the second day, however, three of the group agreed to accompany them to the fire-man's cave and verify the matter. The five arrived near the platform about dusk, and brought with them several small animals they had killed on the way. As dark was coming on, the fire burned brightly on the rocky bench in front of the cave. The two who had been visitors before advanced boldly, but when they neared the light, the others promptly climbed trees to view the

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strange sight from a position of safety. They saw Longhead and Broken Tooth seated by the fire, and, when their companions reached the platform, they saw them welcomed and seated. These called to them to come on as there was nothing to fear, and finally, they climbed down and cautiously approached. Their surprise was great and their satisfaction unbounded when they felt the warmth; and now the first comers suggested a trial of the new method of preparing food. Here a new surprise awaited them, for Longhead and Broken Tooth each produced a flint knife and proceeded to cut the animals in small pieces instead of tearing them, — a proceeding which the newcomers watched with great interest, for they had never before seen a knife.

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Longhead gave each a piece and showed how to hold it over the hottest part of the burning coals, and to turn it that all parts might be cooked and not scorched.

They took the delight of children in a new game, and besides, they were hungry from their long tramp, and the feast lasted until all the meat and roasted roots had been disposed of, many questions being asked, however, during the progress of the meal about the origin of the fire. These the man and woman answered mysteriously, and finally retired to the cave, leaving their guests more mystified than ever.

The visitors remained awake most of the night, one or two sleeping while the others kept the fire supplied with fuel. It happened, also, that a couple of tigers

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approached the light near enough to be seen by them, but sneaked off, afraid of the strange sight.

This time they all remained until the man and woman arose in the morning, and then insisted that Longhead should tell them where the fire came from and how they could procure it for the benefit of the group. He answered as mysteriously as before, and pointed to the sky as the place from whence it came; but he gave them to understand that he controlled the mysterious agent; that there were plenty of caves in the ravine near-by, and if the group would take these for their habitations, he would not object to supplying them with the fire; and he showed them how it might be conveyed to a considerable distance by means of

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torches. He was careful, however, not to say anything about its preservation by means of the punk, and he declined to give any explanation in regard to the flint knives with which the meat had been cut.

Since he had become acquainted with the use of fire, Longhead's intellect had expanded rapidly, and he now began to have a vague idea that he could make use of these secrets to his own personal advantage.

On their return to the group, the party reported that all the first two had said about the fire was true and the half had not been told. They enlarged upon the appetizing method of preparing food by roasting, and the warmth and comfort of the heat, to say nothing of the terror in

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which the fire was held by the ferocious animals.

They told of the caves in the vicinity of the fire-man's habitation and his offer to supply them all with fire, and proposed an immigration to the locality, that all might enjoy this new agent for man's comfort.

Most of the group agreed to the proposition, and the next day removed with their few belongings and located themselves in the caves of the ravine; but a few conservative old fellows said they would have nothing to do with such unnatural and mysterious business; and as to roasting meat, it was surely intended that it should be eaten raw, else why were they furnished with hands to tear and teeth to chew, and besides, had not their

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fathers always eaten their meat raw? For their part, they would remain at the old locality and follow the old and tried methods, at least, until they should see if any harm befell the immigrants on account of the innovation.

By the time the procession of emigrants had arrived at the fire-cave, Longhead and Broken Tooth had determined upon their own course of action, and when the new-comers had selected their respective caves and came to be instructed in the use of fire, Longhead told each that as this mysterious agent was his property and he alone could produce or destroy it, he would require of each that he should bring an armful of fuel or a present of food when he came for fire; and further, that if the fire on any hearth

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should go out, it should not be rekindled with that of a neighbor, but by a torch lighted at his own central fire; and he threatened that if these rules should be violated, he would at once extinguish all the fires and retire to a distant part of the forest, leaving them in their former condition.

So beneficial did the people by this time believe the fire to be, that they all readily agreed to his terms, and scattered through the forest to secure armfuls of fuel with which to purchase the blessing, except a few who happened to have food to exchange. As each threw down his contribution he received a lighted torch and was given instruction how to kindle his fire, and, by the time it became dark, the whole ravine was brilliantly illumi-

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nated and merry with the shouts of old and young as they gathered for the first time around hearthstones and enjoyed light and heat.

Those who had visited the fire-cave before the immigration, proceeded at once to roast their meat and tubers, and the others imitated them, though a few concluded to eat theirs raw until they might see if the new method was injurious to those who tried it. The first touch of the hot meat with lips or fingers brought exclamations of surprise or fear from some, but, on the whole, cooking was voted a success and was thereafter universally practiced.



CHAPTER IV

CO - OPERATION

A FEW days after the arrival of the colony of settlers at the fire-cave, the conservatives of the group who had remained at the old home could no longer control their curiosity, and so, one afternoon they approached the vicinity of the new settlement, after cautiously reconnoitering from the tree-tops. When discovered, they were cordially invited to approach, for the old selfishness and exclusiveness seemed to melt away under the influence of fire and the companionship it inculcated, and they were soon

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enjoying for the first time roasted carrots and broiled meat. They soon lost their shyness and fear under the new conditions, and remained permanent denizens of the settlement.

The men of the group soon observed the flint knives and spear-heads used by Longhead; they at once appreciated their superior effectiveness as weapons, and importuned him to supply them with similar ones, or teach them how to make them for themselves. He was now too shrewd, however, to risk the loss of any of his prestige by revealing the secret of their manufacture, but agreed to make them similar weapons for a consideration, payment of which should be made in the shape of food and fuel, the only commodities at that time of any value.

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Each man now brought him suitable sticks for javelins and spears, and for each he made a long spear, two javelins and a knife.

When the first supply of flakes was exhausted, Longhead heated another nodule of flint and poured water on it from a piece of bark, but he was careful to do this when none of the others were about; and thus maintained both secrecy and a supply of materials.

The control of fire and the manufacture of these valuable and mysterious weapons, gave Longhead a standing in the group which none had ever before attained. Human society had not yet been organized in any form; there were no laws, no rules and no chiefs. Each did exactly as he pleased, and if there was

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any restraint at all upon a man's actions, it came not from a sense of justice, morals or ethics, but simply the fear of a beating by the injured party, if any of his supposed rights were infringed upon.

Soon, however, individuals began to consult Longhead in regard to ordinary affairs. One would ask him if there would be rain during the day; another, the direction he should take for a prosperous hunt, and, as he was always careful to make replies which were somewhat vague and mysterious, except where he had certain knowledge, he soon acquired a reputation for superior wisdom.

Longhead, now relieved, to some extent, from the daily exertion necessary to procure food for himself and Broken Tooth, by the contributions of many who,

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through indolence or ignorance, permitted their fires to become extinguished, had much time for thought, and, as he sat making weapons, the manufacture of which brought him additional supplies, it one day occurred to him that if a number of the men armed with the new weapons could be employed at the same time against larger animals theretofore always avoided, the people might combat with them successfully and thus the food supply might be largely increased. This was the first suggestion of coöperation, and the idea but slowly took form in his mind, though it recurred to him almost daily. Up to this time each man had hunted alone, and if two or more happened to be in company, it was by the merest accident; but, as Long-

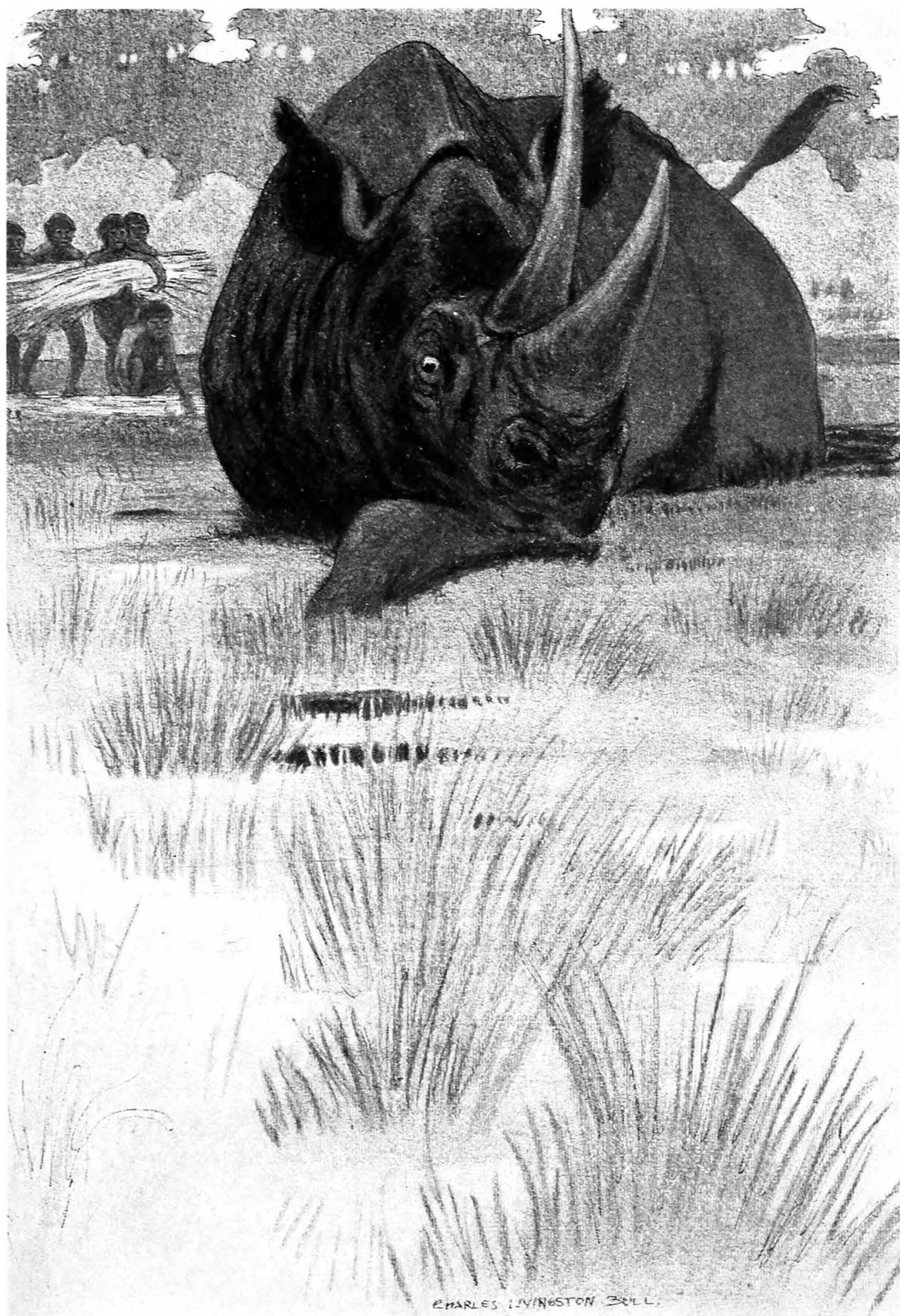
Co-operation

head worked out the problem, he concluded that if a number could be directed by an intelligent leader, their efforts might be successful, and he determined to make the experiment at the earliest opportunity.

About this time a hunter returned one afternoon in great excitement, and reported that a large rhinoceros had partly mired in a swamp near the settlement. He said the huge animal was able to make but little progress and might be approached quite near without grave danger. This was Longhead's opportunity to try his experiment of coöperation. Fortunately, there were quite a number of the men about that day, and he at once called them together, told them to bring their weapons and accompany him to the

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swamp. He assumed the leadership of the party, and when they approached the swamp, each was directed to gather a bundle of dry grass, reeds and brush. These he had thrown down as they progressed, to give them footing in the soft ooze, and soon they had a tolerably firm path from the solid ground to a place near the great beast. On their approach the rhinoceros made no further attempt at progress, but he turned his head with its long sharp horn toward his foes and, with loud snorts of rage, seemed to dare them to come nearer. Their ancient fear of this formidable animal made the men hesitate, but under the peremptory orders of Longhead, they ventured forward and threw their javelins into the body of the huge animal. It must be confessed that



“ SOON THEY HAD A TOLERABLY FIRM PATH FROM THE SOLID GROUND TO A PLACE NEAR THE GREAT BEAST.”

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for some time the attack seemed only to increase his rage, he made vigorous efforts to reach his tormentors and snorted loudly. But while, for the most part, the javelins did not penetrate beyond the thick layer of fat which surrounded the animal's body, a few had reached some of the larger blood-vessels, and when these were broken off or torn out in the desperate struggles of the beast, the blood poured forth in torrents and he soon began to weaken; his snorting was no longer so loud and he would lie down occasionally as if to rest, closing his eyes and breathing loudly but with evident difficulty. During one of these resting spells, Longhead came close to him and thrust his long spear with all his might into the animal's body just back of his

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shoulder. When it was withdrawn, the blood spouted from the wound and also from the mouth of the beast, and soon its eyes grew dim, its struggles grew less frequent and violent, and finally ceased entirely, for the great rhinoceros was dead.

Longhead now, for a while, lost control of the situation. The men went simply wild. Their shouts filled the air, and to these were joined the shrill cries of the women and children who had approached the swamp and had been interested witnesses of the battle and its result. The great animal — an abundance of food for several days — was theirs. They had occasionally before this happened upon the body of one of these animals, killed in one of the fights which frequently occurred between the males of

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the species, but, without knives, they had been unable to tear the thick hide, and even when it had been torn by wolves or bears, the meat was so tough they were able to obtain but a few small pieces. Their present hilarity might certainly be excused.

Soon Longhead began issuing orders and enforcing them by punches with the blunt end of his spear or sound blows with the pole, and some semblance of order was obtained. By his direction, men, women and children joined in bringing more brush and grass. This was piled close to the carcass and the men with their flint knives proceeded to cut up the huge body. The women and children carried loads of meat to the settlement, and soon most of the flesh was re-

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moved. The head was dragged by the men to Longhead's cave and set upon a stick on the platform as his trophy, while all stood around and roused the echoes of the ravine with their yells and acclamations,—the first time a public acknowledgement was ever given a leader.

Such feasting the group had never known. At each fire, large pieces of rhinoceros steak were roasted on coals or sticks, and for several days, every man, woman and child was literally too full for utterance.

After this experience, Longhead, as the organizer and leader of the coöperative attack on the rhinoceros and the final slayer of the animal, was, by common consent, regarded as the head of the group; his advice was sought on all occasions,

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and his word was law. He gradually assumed the direction of everything that was done.

Having demonstrated the strength of coöperative hunting, he organized easily a squad of the bravest and most active of the men as special hunters of large game. Each was armed with a long spear, two javelins and a knife, and he required them to practice javelin throwing until each became expert. On a hunt these men always kept within hearing or sight of each other, and they soon originated a code of rude signals by which the whole party might be informed of the appearance of any large animal.

This band of hunters, on their first expedition, led by Longhead in person, encountered a drove of wild hogs. When

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each man had hunted alone with stones and clubs as his only weapons, these savage creatures were almost as much dreaded as the cave lion or the saber-tooth tiger, and now when they appeared, nearly every hunter, mindful of his old fear, scrambled into a tree; but at Longhead's command they descended, and he organized them into a compact body, back to back. When the hogs charged in their usual manner, the slaughter wrought by the spears and javelins was so great that not an animal escaped, for, in accordance with their habit, the hogs knew nothing of retreat, and the last survivor charged as bravely as if at the head of the herd.

Again coöperation had triumphed, and the settlement feasted for many days.

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The genius for leadership shown by Longhead, together with the superiority of the weapons he had invented, and, above all, his mysterious control of the fire, had now firmly established him as leader or chief, and none thought of questioning his authority in anything. There had been no election to the office, nor, indeed, any consultation on the subject; he simply assumed the leadership and the group acquiesced by compliance with his commands.

This first social organization for co-operation in hunting — the germ from which all governments and laws have grown — was not the only one resulting from the use of fire. The manifest blessings or comforts due to its use, and the mysterious manner of its production in

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the fire-cave hidden from the sight of all, began to give rise to the idea that Longhead and Broken Tooth must be in communication with some superior being.

It cannot be said that man at that time had any religion, any conception of a god, or indeed, any definite idea of supernatural beings, but there were many mysteries of nature which he could in no wise comprehend. Incapable of speculative thought, or, indeed, of much continuous thought of any kind, he was unable to distinguish clearly between the animate and inanimate; he attributed active life to all surrounding objects and believed even the trees and plants to put on foliage, blossom and produce fruit because they desired to do so. When a rock, loosened by the action of frost and storm, became de-

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tached from a cliff and rolled into the valley below, it did so of its own accord and was regarded with fear. A man would make a wide circuit to avoid it in passing and none would voluntarily approach it. They lived in a region of cliffs and mountains and when one gave a shout, under proper conditions, his words were repeated, sometimes more than once; and none could find the mysterious beings who did the mocking; indeed, after vain searches, they became convinced that the tantalizing mockings came from beings invisible to man, consequently his superiors and, therefore, dangerous. They began to avoid the glens and valleys wherein echoes abounded, or, if compelled to pass through them, did so in silence that their

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dangerous neighbors might not be provoked to do them an injury. The curling mist rolling silently down the mountain side, was to them another mysterious being of whom they stood in awe, and thunder, lightning and storm each became to them personified and living supernatural beings who terrified them. They had yet no belief that man had a soul or spirit which existed after his death. This thought was to come ages thereafter.

It was not long until it was suggested that Longhead must have subjected to his control one or more powerful but invisible beings whom he kept shut up in his cave under the guardianship of the woman, and who, at his command, produced the fire and wonderful weapons.

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That Broken Tooth was the guardian of these beings, made mystery attach to her as well, and they began to look upon her with fear and reverence also. The man and woman encouraged this by becoming more mysterious than ever. When further questioned in regard to the fire, they boldly asserted that the whispered stories were true; that their control of fire and the ability on the part of the man to make superior weapons was due to supernatural beings who frequented the cave and were subject to them. They asserted that these beings were so powerful they could strike them all with instant death, and would have done so but for the intercession of the fire-man and the woman to whose control they were subject; but the people were assured that so

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long as Longhead and Broken Tooth should be treated with proper respect, their wants satisfied and their commands obeyed, they would not permit these malevolent beings to molest any of the group, and the fire should not be taken away.

Soon the people of the group at the fire-cave were informed that the fire-spirits desired the man to remain most of the time at or near the cave that they might converse with him at all times and instruct him in additional methods for promoting the happiness and welfare of the people, and it would, therefore, be impossible for him to take part in the daily hunt for game, though he would still lead them in important expeditions. On this account he directed that each

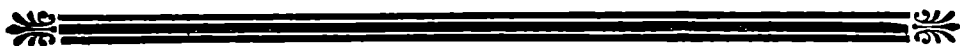
Co-operation

member of the group should daily bring to the fire-cave contributions of food, sufficient not only for the wants of the man, but of the woman and spirits also. The people readily believed this, for they were incapable of conceiving that such beings as spirits had not need of material food, and, consequently, each brought his or her offering daily, either of food or fuel. If by reason of failure in the chase, an unfortunate hunter had no offering to bring, he was required to come to the cave and, through the medium of Longhead, ask pardon of the spirits, and bring a double portion the next time.

To all this the people of the group readily submitted; Longhead and Broken Tooth lived in comfort, if not in luxury, without any effort upon their

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part; the people were educated to ask the forgiveness of superior and supernatural beings whose existence was shrouded in mystery, through the medium of a priest whose natural wants they were required to supply; and thus a religious worship with a dedicated and supported priesthood, if not a religion itself, was established among men.



CHAPTER V

DAWN OF INVENTION, ART, MARRIAGE, RELIGION AND GOVERNMENT

AFFAIRS at the settlement near the fire-cave now moved along smoothly. Their new weapons enabled the hunters to secure abundance of food in a country teeming with animal life, now that they dared attack the larger animals. Cooking made both the flesh and vegetables more nourishing as well as more appetizing, and soon the enormous stomachs, no longer continually distended with raw and indigestible food, became reduced in size and their bodies less unwieldy.

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Made confident by the use of fire and superior weapons, the men now walked fully erect and wandered through the forest with little fear. As their supply of nourishing food increased, more children were born than before, and the mortality among infants was greatly reduced. All this tended toward a rapid increase of population in the settlement. This increase in the population necessitated more habitations, and this, at the time meant more caves, for this was the epoch of cave-men. After all the available caves in the ravine and vicinity had been appropriated, an enterprising young man of the group who, by reason of mutual attachment and because of the example, perhaps, of Longhead and Broken Tooth, had induced a young woman to establish

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similar relations with him, being unable to find an unoccupied cave, concluded to establish housekeeping upon a horizontal ledge overhung by a projecting rocky cliff. This location, protected only in the rear, soon proved to be too exposed for comfort, and the couple concluded to improve it. They took several good sized sticks of different lengths which had been burned off by the fires and after leaning them up against the sloping rock, piled on brush and grass. This was much better than the open front, but a coal from their fire having blown into the grass after it had dried, caused a conflagration which reduced them to their former condition. The man proved to be quite intelligent, and he began to select logs of the same length, burning them off at the

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proper place when necessary; and these they sloped up side by side at the front as before, but, mindful of the fire, they filled the interstices with sticks, stones and moss, finally plastering the whole front, except for a small opening for entrance, with mud. This was a great improvement over all former conditions; the rain and wind were excluded, to a considerable extent; indeed, it was preferable to a cave. It was lighter and better ventilated, and, when they had learned to construct movable frames which could be securely fastened in the doorways, to prevent incursions by wild animals, these lean-tos or rock-shelters, the remains of which have been found in many parts of Europe, became the favorite habitations of the people of the group.

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The inhabitants of the caves and rock-shelters did not clean house every spring and fall, or, indeed, at any other time; the refuse and debris of the household were allowed to accumulate upon the floors of the caves and rock-shelters, and to this we owe nearly all the knowledge possessed by civilized man of the domestic arts, weapons, food, etc., and the general conditions under which the cave-men lived, as well as of the animals which were their contemporaries. The floors of these ancient dwellings, when excavated by scientists, show several feet of debris or accumulations, which are called "brecchia," being a conglomeration of dirt, bones of animals, bones of human beings, weapons, implements and other artifacts, which are frequently cemented

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with limestone formations caused by the drippings of the rocks and caves, in the nature of stalactites and stalagmites.

Not only have we learned from this "brecchia" what progress the cave-men had made in domestic art, but our knowledge of the animals which lived in the locality and were their contemporaries is almost wholly derived from rude pictures made by these cave people, who seem to have suddenly developed an artistic sense and made such pictures by etching or scratching them with sharp flints upon pieces of bone, ivory and slate. These drawings are by no means so crude and wanting in artistic skill as we would be inclined to expect. The animals depicted are readily recognizable; such drawings show groups of reindeer, now

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found only in the arctic regions; the wild horse; the single horned rhinoceros; the giant elk; and on a smooth piece of his own tusk, we see the curved-tusked, hairy elephant of gigantic size — the mammoth, or *elephas primigenius*, whose bones have been found in many parts of Europe and Asia, and of which at least one specimen was found whole with the flesh intact, in the frozen tundra of Siberia. But for these drawings — the natural history of his time — left by cave-men, we would not know that immense animals, now long extinct in Europe, had contested with men of the cave period, the ownership of the forests, swamps, plains and mountains.

In the “brecchia” of these caves, are often found long bones of animals which

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have been split longitudinally to obtain the marrow, which was regarded as a great delicacy by primitive man; and as some long bones of the human body have been found split in the same manner, some scientists have concluded that cave men were cannibals, or at least occasionally made a feast upon the bodies of prisoners captured in war, or upon such sacrifices when offered to the gods.

At the time when rock-shelters became favorite habitations of the people at the fire-cave, marriage relations were still loose, and any idea of male parentage was yet to come, but in a few generations, instead of accepting the birth of children without thought, it was generally believed that the supernatural beings with whom their imaginations peopled the

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hills, valleys, groves and ravines, were responsible for their advent. However, the more frequent and intimate association of the sexes around the fires and in preparing food by roasting, had a great effect, and it was noticeable that men and women began to pair off in the caves and rock-shelters; that such cohabitation continued for longer periods of time, and there were a number who appeared to have formed permanent unions. There was something about the fire — the social hearthstone — which tended to prolong such associations. The cheerful light of the fires; the measure of comfort they furnished, and the talkativeness promoted by companionship as the hunters related around the evening fires the adventures and experiences of that and former days,

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all combined to make man more of a social being, and the same influences promoted more permanency of union between couples who found themselves at all congenial.

Perhaps the example of Longhead and Broken Tooth, who had remained true to each other, had something to do with this gradual change in the relations of the sexes, but it was not until many generations after when the fact of male parentage became known to mankind, that anything at all like marriage was known or any man regarded any child or children as his own. There being no settled custom in this matter, many couples continued to unite and separate as they might feel inclined. The most that can be said is, that the use of fire

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in some manner appeared to promote a longer union than was common before its discovery, and that, in the progress of ages, fire seems to have been one of the agencies which greatly assisted in bringing about the present sacredness of home and marriage.

The hunters of the group still continued their coöperative search for food, and the fact that it was often impossible to determine who had killed a particular animal, while it was frequently certain that the weapons and efforts of several had a part in it, brought about a system for making an equitable distribution of all the animals taken in each expedition. First the share required by Longhead and Broken Tooth would be set apart, then the remainder was apportioned to

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each member of the group or to each habitation in proportion to the number of persons to be supported.

The women, too, whose task it was to find the roots and vegetables, eggs, berries and nuts which entered into their diet, began to imitate the actions of the men in this respect. They soon arranged to leave the older and more feeble women at the settlement to maintain the fires and look after the younger children, and to these was allotted a share of the food secured by the others.

These customs were established gradually and without definite enactments, or even agreements, but by common consent; they were, however, greatly promoted by Longhead, who seemed to make coöperation a sort of a hobby. They seemed to

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have just happened, but they were, in fact, the natural outgrowth of fire and the changed conditions due to its influence. In the course of years these customs crystallized into a communal organization in which all things, except perhaps, the weapons of a hunter and a very few personal belongings upon which the owner had expended thought and labor, were regarded as the property of the group or tribe. This communal organization of society continued for thousands of years and its vestiges still exist amid the highest enlightenment, as the foundation for business corporations, partnerships, and, indeed, all commercial and other coöperation, — communism — the greatest good to the greatest number, being the basis of all civilized laws.

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While the hunters of the settlement at the fire-cave scoured the forest for animal food, and the women sought vegetables, nuts, berries and eggs, Longhead was by no means idle. True, he was, by the contributions exacted from the group, relieved from the necessity of daily effort to secure sustenance for himself, Broken Tooth and a bright-eyed little cave-boy who had been sent to the woman by the spirits, and he seldom joined in a hunting excursion; but, weapons were often broken or lost, and, as he still retained the secret of their manufacture, he was kept tolerably busy in replacing them. Continual experience in this work gave him greater skill and a truer eye for symmetry of form coupled with effectiveness for use, and he also learned to distinguish

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the best materials of the vicinage. He invented no new weapons, for the bow and arrow and even the stone axe, were to be the products of a much later epoch; but he discovered that a javelin could be thrown with much greater accuracy if the two sides of the flint point were exactly alike and evenly balanced. Experience had also demonstrated to him that the weapon had greater penetrative force if the flake for the flint head was thin and the edges and point very sharp. He became more careful, therefore, in the selection of his flakes, and when he found one suitable for his use, except one side was larger than the other or the edges too thick, he found that he could batter off small pieces with light blows of a pebble, or flake them by pressure with a bone,

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and thus bring it into shape. He discovered also that when the base of a flake had some notches near it, the fastenings remained more firm and the point was less likely to become detached from the shaft. He therefore began, by pecking and flaking, to form such notches where he did not find them to suit him, and soon his spear and javelin heads assumed a conventional form. There was a slow but continuous improvement in the weapons of the period, but eventually these spear and knife heads became much like those still found upon the village sites of primitive man all over the world.

The worst trouble Longhead had to overcome in the manufacture of weapons was the method of fastening the points to the shafts or handles. The small fibrous

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roots he used at first would fray and break when they became dry, and the points would be lost or fail the hunter at a critical moment. The stringy bark he cut from trees with his knife was little better, but, one day when cutting up a large animal for cooking, he found its hide so tough he could hardly penetrate it with the knife, an idea occurred to him, and he cut off a long narrow strip of the skin for an experiment. This he hung up until he should have time to make the test he had in mind, and when he came to try it he found that he could not break it even by exerting all his strength. From the skin of the next animal that came into his larder, he secured a number of long strips, and, having dried these, he wet them to make them more pliable, and

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used some of them in lashing a point to a javelin. This weapon he tested by frequent use, and was pleased to note that the new lashing did not fray or break when it became dry, nor did it loosen, but, on the contrary, the strings of raw-hide shrank when drying and held the point the tighter. Thereafter the tough hides were removed, dried and prepared for strings for this and other purposes, and it was not long until he accidentally discovered that wet wood ashes placed on a skin for a few hours would loosen the hair and permit its removal, leaving the skin improved for making strings.

About this time Broken Tooth made a discovery and, like the others, it was also accidental. In her cooking operations, pieces of food were continually falling

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upon the ground or being laid upon it in course of preparation, and they became more or less covered with sand or fine particles of grit, which did not taste good, and, besides, they hurt her teeth. She had no idea of their uncleanness; it was simply a matter of discomfort. One day she observed a long strip of bark hanging to a tree which had recently blown over, and the idea occurred to her that if she had some pieces of this bright, clean bark on which to place the food, the disagreeable sand might be avoided. She tried to break the bark, but it was too tough and stringy, so she went to the cave and returned with a flake of flint. It happened to have a sharp but very ragged edge, and she found that by drawing the edge back and

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forth across the grain of the bark and at the same time putting on some pressure, she could cut it rapidly. That evening she surprised Longhead by presenting his supper on a set of clean bark dishes. The man examined them curiously and asked how she had cut them. She produced the flint and demonstrated on one of the plates how it would cut. She had invented, or at least, she had made the first application of the saw.

The man examined the flake thoughtfully, and, picking up a piece of stick, tried it on that. He soon sawed it off, and was greatly pleased. To get the staves of his spears and handles of javelins the right length, he had been burning them off in the fire, but now he would use a saw. He soon found that the more

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numerous and regular the notches the faster the implement would cut, and, as few, if any, of the flakes came off the nodules in this condition, he applied pecking and pressure, and soon had a saw with small and regular serrations or teeth, and found it very useful.

Up to this time, all his knives had been made of long flakes with a wrapping of roots at one end to protect the hand, but he had found it difficult to secure many flakes long enough for both blade and handle. One day he had the misfortune to break the shaft of his favorite spear. It had a thin blade which was very long and sharp, and the rawhide strings held it firmly. He attempted to untie the lashings, that he might use the blade for another shaft, but they had become so

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hard and dry that he could not succeed in untying them. He picked up his saw to cut them, but first began idly to draw it across the shaft. At once he noticed that if cut off at the point where he was sawing, the spear would become a knife with a wooden handle. The operation was quickly completed, and he found the new style of knife much superior to the old. Flakes of this size were much more frequently produced in breaking a nodule with fire and water, and all his knives were thereafter furnished with wooden handles.

The saw thus became one of the most useful of his few tools. Thus the flint saw, discovered by accident by a primitive woman, was the germ from which has been elaborated, with little change

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except for material, one of the most useful tools known to civilized man.

When the little cave-boy of their family was something over a year old, a small girl was brought by the spirits, and as the children grew and thrived, Broken Tooth began to suggest that their present home was becoming crowded. The cave was indeed a small one for two, three made it uncomfortable, and now four was certainly a crowd. Longhead first proposed searching for a cave of larger proportions, but to this Broken Tooth raised several objections. All the larger caves in the vicinity were already occupied, and, while they might no doubt use the authority of the spirits to compel the present occupants to vacate a cave for their use, this course was sure to create

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ill feeling which, sooner or later, might work to their disadvantage; and, besides, where could they find one with so large a platform in front and so well protected by overhanging rock. Could not some plan be devised to enlarge this one? and she called Longhead's attention to the fact that the rock inside was soft and friable, and that small pieces were continually falling down, which she carried out and threw over the edges of the platform.

The man undertook to make the cavity larger by pulling down and removing all the loose pieces, but, when this was done, little increase in the size of their home was apparent. On one side the man noticed that the rock was full of small cracks and seams, but these were so

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tightly fitted and irregular that he could remove but few of the stones with his hands. One piece that was quite loose he tried for a long time to pull out, but it pinched too tightly at one corner. In a rage, he picked up a large, sharp cornered piece of flint with both hands and struck it with all his might into the crack which held the tightest. The piece that bound it was broken and the stone fell out, followed by a number of others. Another discovery of the value of flint pieces had been made — a pick had been found, and daily both Longhead and Broken Tooth spent some hours digging at the loosened rocks until, in the course of time, they had a cave sufficiently large for their needs, and in succeeding years this was extended, as the growth of the

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family and their ideas of comfort demanded.

By the same means Longhead removed the irregularities of the floor and side walls, and finally he somewhat enlarged the doorway, gave it a more regular shape, and substituted strong wooden bars, held in place by notches cut in the stone, for the large stones they had formerly rolled into the opening at night to prevent the entrance of dangerous animals. The curious inhabitants of the settlement watched these operations, and it was not long until many other caves were thus enlarged and more comfort secured.

During the remainder of Longhead's life, little further progress was made in the manufacture of weapons and implements, other domestic arts or the condi-

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tions of the group; but the flint saw became a common implement and was applied to various uses; many of the families used bark dishes, and a sort of rude basket had been evolved from naturally curled cylinders of bark into which a bottom of bark or interlacing of rawhide strings had been inserted. These were used to transport nuts, berries, wild fruit, eggs, etc., to the caves and as receptacles in which to retain the same afterwards. No basketry or other weaving process had been thought of, nor had there been any attempt made to manufacture or use any kind of clothing, the skins of animals being used only for strings, or occasionally to carry food products.

Social conditions also remained practically the same, but food was more easily

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procured in consequence of slowly extending coöperation, and the method of its preparation by cooking made it more nourishing, consequently more of the children grew to manhood and womanhood, and the average of life was longer. The possession of effective weapons continued to render men less fearful, they became more and more erect and grew to a taller stature.

The inventions and improvement in conditions already described were the necessary and almost immediate results of the control and use of fire, and when this point was reached, further progress for many generations can scarcely have been considerable. Primitive man was not fertile in original ideas, nor inventive, except from accident aided by neces-

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sity, and the use of the bow and arrow, stone axe, baskets, weaving and pottery were to come many generations after the death of Longhead, Broken Tooth and their fellows of the fire-cave settlement. A method for producing fire by friction of wood upon wood, after the method of the fire-drill, which has been common to nearly all primitive peoples who have come under the observation of civilized men, probably came with the other later discoveries, but it was doubtless still longer before any clothing was used, and then, at first, it was most likely more for ornament than for comfort or any feeling of modesty.

However, the succeeding generations of the group described never lost the inventions of Longhead, and in after ages,

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when the idea of a Supreme Being or beings had been elaborated as a religion, he was deified and worshipped as a god and the founder of the tribe or people.

The descendants of Broken Tooth — for descent for many ages was still reckoned only in the female line — continued to be the weapon-makers and rulers of the tribe, and from them were the fire-priests always selected, when the worship of fire, with a consecrated priesthood and a more or less elaborate ritual, had been developed.

Many ages were to pass with a slow but continued upward progress before this group of fire-people entered even the lowest stages of barbarism, but certainly the discovery of the use and control of fire had much to do with the early

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progress of the rude people described, and whose individuals, we have assumed for the purposes of the story, were our own far away ancestors.

THE END