

CHAPTER I.
PHYSICAL ASPECTS.

Area and boundaries—General appearance—Mountain system—River system—Marshes—Geology—Climate—Fauna.

The district of Nowgong is situated on the south bank of the Brahmaputra in the Assam Valley and derives its name from its principal town (Noa-gao the new village). It covers an area of 3,843 square miles, and lies between 25° 36' and 26° 42' N. and 91° 57' and 93° 45' E. On the north it is bounded by the Brahmaputra; on the east by Sibsagar; on the south by the Naga, North Cachar, and Jaintia Hills; and on the west by the Khasi and Jaintia Hills and Kamrup.

The greater part of the district is a level plain, intersected with numerous rivers and water courses, and dotted over with *bils* and marshes. In places this plain is fairly densely peopled, and the banks of the Kalang are lined with villages; but near the Brahmaputra the country is liable to inundation in the rainy season, and there are wide stretches of waste land covered with reeds and grass. On the north-east, the Mikir Hills impinge upon the plain, and a considerable tract of hilly country is included in the boundaries of the district. On the south-east, there is the broad but sparsely peopled valley of the Kapili, the valley of it's

tributary the Langpher which makes its way between the Mikir Hills and the hills of North Cachar, and the upper valley of the Dhansiri, which is bounded on either side by hills. On the west, the outlying spurs of the Khasi and Jaintia Hills project into the plain. Nowgong might thus be roughly described as a tract of level country bounded on the north by the Brahmaputra, and surrounded on the three remaining sides by hills.

Across the centre of this plain stretches a belt of cultivated land from Silghat on the north-east to Jagi in the south-west; but on either side of this belt cultivation falls off, and there are wide expanses of grass land on the north and west, and of forest and hill on the south and east. The general appearance of the district is extremely picturesque. On a clear day in winter the view to the north is bounded by the blue ranges of the outer Himalayas, behind which snowy peaks glisten brightly in the sun; while to the south and east lie range upon range of lower hills whose sides are clothed with the luxuriant vegetation of a tropical forest. The level rice fields, after the crop has been carried and stubble alone remains, might perhaps seem tame and uninteresting, were it not for the groves of slender palms and feathery bamboos with which they are broken up. During the rains this portion of the district is covered with a rich green carpet which gradually turns to gold, and on every side are swamps and rivers, hills and woods, to lend variety to the scene.

The máuzas fringing the Brahmaputra are deeply **The Chapari** flooded in the rains and are for the most part covered with reeds, such as khagari (*saccharum spontaneum*), ikra (*saccharum arundinaceum*), and nal (*phragmites roxburghii*) which are from ten to twenty feet in height. The greater part of this tract lies too low for the growth of any trees except the simul (*bombax malabaricum*) which is dotted here and there over the surface of the plain. Nepali graziers keep large herds of buffaloes on the *churs* or sandbanks which are continually being formed by the Brahmaputra, and in the cold weather the villagers cut and burn the jungle, and sow mustard or summer rice in fields surrounded with a wall of reeds. These fields are described by the people as their *pams*. Their regular homes are often situated many miles away, near the land on which they grow transplanted rice; but at the commencement of the cold weather they move down to the *chapari* and live in little huts of grass during the time that ploughing and sowing is going on. Sometimes they return home while the crop is growing, and only revisit the *pam* to cut and thresh the harvest; sometimes they remain on during the whole cold weather. The mustard fields are dotted about, bright patches of vivid yellow in the dense green jungle, and come as a pleasant change to the inspecting officer who has generally reached them through footpaths, which are almost tunnels, shut in on either side by an impenetrable wall of grass and reeds. There is a pleasant feeling of freshness on these riparian flats on a foggy winter's morning. The soil is light and

springy, the partridges are to be heard calling in the jungle, the mustard when in flower has a strong but pleasant smell, and there is a general sense of freedom and an absence of restraint.

The southern maurus.

South of the Kapili, between Dharamtul and the hills, much of the country is again below flood level, and is covered with high grass jungle interspersed with *dolonis*, or marshes covered with the most luxuriant fodder grass, in which the cattle graze knee deep in the cold weather. The valley of the Kapili beyond Jamunamukh is very sparsely peopled. Part of this tract is marshy, part is rolling savannah, which supports a stunted growth of thatching grass and is almost destitute of trees. Further east, the valley of the Langpher is covered with dense tree forest. This forest covers the whole of the upper valley of the Dhansiri between the Mikir and the Naga Hills, and, prior to the construction of the Assam Bengal Railway, acted as a most complete and effectual barrier to all intercourse between the southern corners of Sibsagar and Nowgong. For fully ninety miles the railway runs through a pathless wilderness of trees, a desolate and malarious tract shut in by hills on either side; but east of Dimapur this dismal forest is included in the district of Sibsagar, and thus only a portion, though perhaps the larger portion, falls within the boundaries of Nowgong.

Mountain system.

The two main mountain systems of the district are the Mikir Hills on the north and east; and, on the south and west, the outlying spurs which project from the Assam Range into the Brahmaputra Valley. The

Mikir Hills cover an area about 60 miles in length and 35 in breadth, but the greater portion of this tract lies in the neighbouring district of Sibsagar. Their western spurs from Kuthari to Dabaka are situated in Nowgong, and the hills that lie south of the Mohandiju and Jamuna rivers also fall within the boundaries of the district. They rise steeply from the narrow valleys with which they are intersected, and hill and valley alike are covered with dense tree forest, except in places where they have been cleared for the shifting cultivation of the Mikir tribe. The tops of the ranges in Nowgong average from one to two thousand feet in height, but Bar Kandali, the highest peak in the district, is nearly 3,000 feet above the level of the sea. These hills support a scanty population who grow dry rice, vegetables, and cotton on their slopes, and are seldom visited by the natives of the plains. The outlying spurs of the Assam Range are somewhat lower, and the highest peak is Lusuri in Duar Amla mauza (2,400 feet). In appearance and general characteristics they do not differ materially from the Mikir Hills.

Apart from the two main systems there are numerous isolated hills dotted over the surface of the plain. Near Silghat there are two, one called Kamakhya and the other Hathimur, which overhang the Brahmaputra. On Kamakhya, whose summit is 800 feet above the sea, there is a temple sacred to Durga, where sacrifices are still offered to the goddess. A similar shrine on Hathimur is now neglected and has fallen into disrepair. Jamunamukh and Garubat are two mauzas

lying near the junction of the Kapili and the Jamuna, between the Mikir and the Khasi Hills, and here, as is only natural, a few outlying hills are found. One of these, named Madhpur, is a site for local worship, while on another, called Modartali, are the remains of a temple erected in honour of the goddess Kamala. Further west the level of the Kapili valley is unbroken, but in the Raha tahsil there are a few low hills, on one of which, Bashundori, there is an image of the goddess of that name and two of Gonesh. The south of Gobha is entirely hilly country, and on one of the peaks, called Deosal, there is a temple sacred to Mahadeo. Even in Tetelia mauza, north of the Kalang, there is a hill nearly 1,000 feet in height, and in Mayang, which is bounded on one side by the Brahmaputra, are two hills, Boha and Mayang, sacred to Gonesh. East of Ghugua, the country is a broad alluvial plain whose even surface is unbroken by the smallest elevation till the hills at Silghat rise above the horizon.

**River
system :
the Brahma-
putra.**

The principal river of Nowgong is the Brahmaputra, which flows along the whole of the northern boundary, and it is into the Brahmaputra that all the drainage of the district ultimately finds its way.

In this portion of its course the Brahmaputra displays in a pronounced degree the special characteristics by which it is distinguished in Assam. It oscillates from side to side of the sandy strath or valley through which it makes its way, and seldom follows the same course for many years. Its waters are surcharged with matter in suspension, and a snag or other slight obstruction in

the channel is liable to give rise to an almond shaped sandbank. The next flood may wash this bank away, or it may only serve to increase its size, and in a surprisingly short space of time a considerable island is formed covered with reeds and grass. Numerous backwaters and minor channels take off from the main stream, only to rejoin it a few miles lower down, and it is not merely one great drainage channel, but a regular system of streams surrounding and depending on the parent river. These streams enclose great *churs* and islands covered with elephant grass and reeds, and in the cold weather there is generally a foreshore of hot and glaring sand. In the rains these channels are full of water, and in places the river is several miles across. Even this great expanse is not enough to contain its waters, and in times of flood the river spreads over the low land at the side. At Silghat and Tezpur there are rocks and hills to give permanence to the channel, and west of Tezpur and near Bishnath the high bank comes right down to the water's edge, but, as a rule, the Brahmaputra is fringed with swamps and marshes, covered with high grass and reeds.

Duar Bagari and the eastern portion of Duar Salana, in the north-east corner of the district, are drained by the Diphlu, the Gatonga, and its tributary the Deopani. About eight miles north-east of Silghat the Kalang takes off from the Brahmaputra, and after flowing a tortuous course through the centre of the district past Nowgong, Raha, and Jagi, rejoins that river at Kajalimukh about 15 miles above Gauhati. The Kalang receives the drainage of the north western slopes of the Mikir Hills

**Other rivers
The Kalang.**

in the Misa and Diju which join it in the upper portion of its course. Further south, the drainage of these hills is collected in the Nanai or Hari, which flows for some distance parallel to the Kalang and finally falls into it at Raha. Here, too, it is connected by a channel with the Kapili, which brings to it the drainage of North Cachar and the eastern slopes of the Jaintia Hills; but the main stream of that river turns to the west, and, after receiving the Barpani and the Umiam or Kiling from the Jaintia and Khasi Hills, falls into the Kalang at Jagi. A little to the west of Jagi, the Kalang forms the boundary between the districts of Kamrup and Nowgong, and not far from its junction with the parent stream receives the Digru on its left bank. The total length of the Kalang is 73 miles, and, by acting as a receiver for the Brahmaputra, it fills a most important place in the drainage system of the district. The current is somewhat sluggish, the bed of the river soft and muddy, and the banks are steep and high. Between Samagurihat and Raha they are covered with a continuous line of villages, and between Raha and Jagi the river flows as a rule between villages or rice fields, but from Jagi to its' mouth it passes through waste and jungle land. During the rains it is navigable throughout its length by a boat of four tons burthen, and small steamers go down it from Silghat as far as Nowgong station. In the dry season the flow of water from the Brahmaputra is stopped by a sand-bank which has formed near Silghat, and above Jagi the river can be crossed on foot, and is thus little used for navigation. During the rains ferries are maintained

at Jagi, Raha, Nowgong and Kuwarital, but at the last three places temporary bridges are erected when the water falls. The country between the Kalang and the Brahmaputra is drained by a large number of *jans* or water courses flowing a tortuous and sluggish course between high banks parallel to the main river. They form a network of intricate channels which here and there widen out into *bils* or swamps, the largest of which are known as the Leteri and Sonai.

The Kapili rises in the Jaintia Hills and enters the **The Kapili.** Nowgong district at Panimur. From here it flows a north north-westerly course till a little below its confluence with the Jamuna, where it takes a turn to the west and flows past Raha. Here it is connected by a branch channel with the Kalang, but it is not till Jagi is reached that it finally falls into that stream after a course of 163 miles. The principal tributaries of the Kapili on the right bank are the Doiang which joins it at Panimur, the Lankajan, and the Jamuna which is swelled by the following streams, the Dimoru, the Dighalpani, the Horgati and the Buriganga. On the left bank the Kapili receives the Kolanga, the Barpani, and the Umiam or Kiling, the two latter being themselves considerable rivers. Just below its junction with the Umiam it is crossed by the railway on a brick bridge no less than 500 yards in length, but this bridge is much in excess of the width of the river, when flowing between its permanent banks. During the rains it is navigable by a boat of four tons burden as far as Panimur, but a vessel of this size could not get much above Kampur in the dry

season. The river is largely used as a trade route, and affords an outlet to mustard grown in the plains, and to cotton, lac, cocoons, and timber from the hills.

Marshes.

Nowgong is dotted all over with *bils* and marshes, many of which have formed in the beds of rivers which have changed their courses. Altogether there are some 57 *bils* or marshes which are sold as public fisheries, and more than one hundred which are used by the villagers for this purpose but are allowed to remain untaxed. These marshes are especially numerous in the *chapari* or low land near the Brahmaputra, but none are of conspicuous size or importance. The largest are, perhaps, the Mora Kalang and the Kachudhara, which have formed in the old bed of the Kalang, the Lalung *bil* in the Namati mauza, the Goukhajua *bil* in Mikirbheta mauza, the Garanga and Pakaria in Mayang mauza, the Udari Khanagaria in Ghugua mauza, and the Haribhanga *bil* near Laokhoa opposite Tezpur. During the cold weather these *bils* are very pleasant places. The water lies in the centre of the depression and is surrounded by a belt of the most luxurious fodder grass, which is again enclosed by a wall of reeds, some ten or twelve feet high. These marshes generally teem with fish, and are the haunt of birds of every kind ranging in size from the crane, pelican, or fish eagle to the snippet and the small blue kingfisher. In the wilder parts of the district the sportsman on breaking through the encircling wall of jungle, may come upon a wild pig rooting for his food, or a herd of buffalo standing knee deep in the rich pasture or wallowing in

the shallow water near the edge ; while sometimes, if the fates are unusually kind, he may find, as the sun is setting, a large rhinoceros taking his evening drink.

Bils that have formed in the beds of rivers that have changed their courses are of a different character. The banks are high, and are often overgrown with trees, and the *bil* is long and narrow and often fairly deep.

The soil of the plain is of alluvial origin and consists Geology. of a mixture of clay and sand in varying proportions, ranging from pure sand on the banks of the Brahmaputra to a stiff clay which is quite unfit for cultivation. Little is known about the southern slopes of the Khasi and Jaintia Hills, but they are said to be of gneissic origin. The Mikir Hills were examined by an officer of the Geological Survey Department in the winter of 1896-97. Nearly the whole of the north Mikir Hills are composed of massive gneiss or foliated granite, but to the south there are only two exposures of this rock.* The hills west of Lumding, and between Dimapur and Mohandiju consist of finely bedded grey clay shales, which, north of Lumding, have been covered with sandstone beds. A mottled earthy trap is often found at the junction of the gneiss and the sedimentary rocks, but there is a remarkable absence of trap dykes in the gneissic area. Deposits of limestone are found at Panimur and near the Jamuna river, but are unfortunately somewhat inaccessible and have not yet been worked. Salt is found in the Mikir Hills at Jangthang and there

* The hills lying north of the Daigrung do not seem to have been included in this officer's enquiries.

are traces of petroleum in the neighbourhood of Lumding. Iron ore is also of wide spread occurrence in the southern Mikir Hills. There are great quantities of ferruginous sandstone passing locally into sandy haematite and haematitic conglomerate, but there seem to be few places where it is sufficiently concentrated to make a workable ore. Coal is found, amongst other places, on the Langlei hill and near the mouth of the Diphu river. The latter deposit gives an analysis of 40 per cent. of carbon and is the best coal found, in the Mikir Hills, but the thinness of the seam, coupled with the fact that it is under water during half the year, deprives it of any value. The Langlei seam consists of twelve feet of visible coal, but it is of very poor quality with a low percentage of fixed carbon and a high percentage of ash. It is only twelve miles as the crow flies from Lumding, but is much more inaccessible than this figure would suggest, as the intervening country is covered with dense jungle and broken up with deep watercourses and ravines. For further particulars with regard to the geology of the Mikir Hills reference should be made to *Memoirs of the Geological Survey of India*, vol. xxviii, part 1, pages 71-95.

Climate.

The climate of Nowgong does not differ materially from that of the rest of Assam Proper. From the middle of November till the end of February the weather is all that could be desired. The total rainfall during this period is only about two inches, the sky is clear, the sun though bright has little power, and the air is cool and pleasant. Fogs sometimes hung over

the *chapari* near the Brahmaputra, but even fogs are not an unmitigated evil, as by diminishing the period during which the earth is exposed to the influence of the sun's rays, they help to keep the country cool. In March the temperature begins to rise, but the copious showers of April, when from five to six inches of rain fall, effectually prevent the development of anything in any way resembling the hot weather of Upper India. Between May and September the rainfall is fairly heavy, the air becomes surcharged with moisture, and the damp heat is trying alike to Europeans and to natives. It is seldom that the thermometer rises above 90° Fahrenheit, but, in an excessively humid atmosphere like that of Nowgong, even such a moderate degree of heat has a relaxing effect upon the constitution. In October, the temperature begins to fall and the nights are fairly cool, but the winter does not actually set in till the middle of November. Table I shows the average monthly rainfall at certain selected stations. Over the greater portion of the plains the average fall is about 75 inches in the year, but in the Kapili valley it is considerably less, and at Lanka it is only 42 inches—a rainfall which is phenomenally low for the Province of Assam.

Nowgong is seldom visited by violent and destructive storms, though an interval of dry weather in the rainy season is often closed by a thunder shower, which is extremely welcome as it at once relieves the oppressiveness of the atmosphere. Hailstorms occasionally do damage, especially to tea gardens, but are very local

Storm, floods
and
earthquakes.

in their sphere of action. The harvest is often injured by the floods of the Kapili and the Brahmaputra, and this subject will be discussed at greater length in the section on agriculture. The district, like the rest of Assam, has always been subject to earthquakes and suffered severely in the great visitation of June 12th 1897. The circuit house, court house, and Deputy Commissioner's bungalow were rendered unfit for habitation, parts of the jail wall collapsed, and the metalled road along the side of the Kalang was split up with yawning fissures. Some damage was also done to masonry buildings in the district, but fortunately the loss of life was very small, and only three deaths were actually attributed to the earthquake.

Fauna.

Wild animals are fairly common and include elephants, rhinoceros, bison (*bos gaurus*), buffalo, tigers, leopards, bears, wild pig, and different kinds of deer of which the principal varieties are sambar (*cervus unicolor*), barasingha (*cervus duvauceli*), hog-deer (*cervus porcinus*), and barking deer (*cervulus muntjac*). Elephants are fairly common, especially near the hills, and, when the crops are ripening do much damage unless the numbers of the herds are regularly kept down. For this purpose the district is divided into 6 *mahals* or tracts. The right to hunt in each *mahal* is sold by auction, and the lessee is required to pay a royalty of Rs. 100 on every animal captured. The method usually employed is that known as *mela shikar*. Mahouts mounted on staunch and well trained elephants pursue the herd which generally takes to flight. The chase is of a most

arduous and exciting character. The great animals go crashing through the thickest jungle and over rough and treacherous ground at a surprising pace, and the hunter is liable to be torn by the beautiful but thorny cane brake, or, were he not very agile, to be swept from his seat by the boughs of an overhanging tree. After a time the younger animals begin to flag and lag behind, and it is then that the opportunity of the pursuer comes. Two hunters single out a likely beast, drive their elephants on either side, and deftly throw a noose over its neck. The two ends of the noose are firmly fastened to the *kunkis*, as the hunting elephants are called, and as they close in on either side the captured animal is unable to escape, or to do much injury to his captors, who are generally considerably larger than their victim. The wild elephant is then brought back to camp where it is tied up for a time and gradually tamed. From 80 to 100 *kunkis* are generally employed, only a small proportion of which are the property of the actual *mahaldar*. The arrangement generally made is that the *mahaldar* pays the price of the *mahal*, and that he receives from his partners one fourth of the elephants they capture. The royalty on each elephant is paid by the person who will receive the price when the animal is sold. 38 elephants were caught in 1897-98 the last year in which the *mahals* were sold by the Deputy Commissioner.

Rhinoceros live in the swamps that fringe the Brahmaputra and are now becoming very scarce. They breed slowly, and as the horn is worth more than its

weight in silver, and the flesh is prized as food, they present a tempting mark to the native hunter. Recently 40 square miles of uninhabited jungle land near Laokhoa have been reserved and constituted a sanctuary for game, and a proposal to form a similar reserve of 37 square miles near Dimaru is under consideration. Herds of wild buffalo are also found near the Brahmaputra, and wild bulls often serve the tame cows that are kept by the Nepalese on the river *churs*. Bison are generally found near the hills and in the neighbourhood of tree forest; tigers, leopards, and bears are met with in almost every part of the district. Wild animals cause little loss of human life, but, in 1903, are said to have accounted for over one thousand head of cattle. The number of human beings killed in that year by different animals was as follows—elephant 1, tigers 6, bears 2, wild buffaloes 4, wild pigs 2, snakes 9, total 24. Rewards were at the same time paid for the destruction of 27 tigers, 23 leopards, and 18 bears.

Small game include wild geese and duck, snipe, florican (*sypheotis bengalensis*), black and marsh partridge, pheasants, jungle fowl, and hares.
