

# GAZETTEER

OF THE

## BELLARY DISTRICT.

### CHAPTER I.

#### PHYSICAL DESCRIPTION.

**GENERAL DESCRIPTION**—Shape and boundaries—Taluks and chief towns—Etymology of name—Natural divisions. **HILLS**—Sandur hills—Copper Mountain hills—Mallappangudda range—Kallahalligudda hills—Kádligi hills—Gudékóta hills—Alúr hills—Ádóni hills—Detached groups and peaks—Scenery. **RIVERS**—The Tungabbhadra—Its name—Its mythological origin—Its rate of fall—Its banks and bed—Its islands—Tributaries of the Tungabbhadra—The Hagari—The Chikka Hagari—Minor streams—Level of the district. **SOILS**—Black cotton-soil—Red and mixed soils. **CLIMATE**—Rainfall—Temperature—Humidity—Winds. **GEOLOGY**—Archean rocks—The four Dharwar bands—Chief hills of the Archean system—The Kallahalligudda Dharwar band—Hematite quartzite—Quartz veins—The Mallappangudda Dharwar band—More hematites—Gold-washing—Signs of diamonds—Sandur-Copper Mountain twin band—Hematites plentiful and rich—Native iron-smelting—Manganese ore—Gold—Pennér-Hagari Dharwar band—Quartz runs and trap-dykes—Copper—Building stones—Jasper rocks—Potstone or steatite—Limestones—Mineral pigments. **FLORA**. **FAUNA**—Domestic animals, Cattle—Buffaloes—Sheep—Goats—Game.

BELLARY is the westernmost of the four Ceded<sup>1</sup> or Deccan<sup>2</sup> districts of the Madras Presidency. It is only on its eastern flank that it is connected with the rest of the province, the other three sides being bounded by the Nizam's Dominions (on the north), the Mysore State (on the south), and (on the west) by the Dharwar

CHAP. I.  
GENERAL  
DESCRIPTION.  
Shape and  
boundaries.

<sup>1</sup> The "Ceded districts" are Bellary, Anantapur, Cuddapah and Kurnool. They are so called because (except four taluks of Kurnool) they were ceded to the Company by the Nizam in 1800. See Chapter II.

<sup>2</sup> "Deccan" or "Dakkhan" represents the vernacular pronunciation of the Sanskrit word Dakshina, meaning "southern," which was used to designate that portion of the Indian peninsula which lies south of the Nerbádí river.

CHAP. I. district of the Bombay Presidency. In shape it is roughly triangular. Along the whole of its longest—the north-western—side the great Tungabhadra river forms its frontier, but the boundary on the other two sides of the triangle, south and east, has been formed by the accidents of history and does not follow any marked natural features. On the east, where Bellary touches the rest of the Presidency, it is flanked by the two districts of Kurnool and Anantapur. The latter of these formed part of it until the beginning of 1882 when it was detached and constituted a separate Collectorate.

Taluks and chief towns.

Bellary is made up of the eight taluks of Ádóni, Alúr, Bellary, Hadagalli, Harpanahalli, Hospet, Kúdligi and Rayadrug and includes within its limits the little Native State of Sandur. Statistical particulars of the population, etc., of these areas will be found in the separate appendix to this volume. The capital of the district is the Cantonment and Municipality of Bellary, and the headquarters of the various taluks are at the towns and villages from which they are respectively named. Besides these, the only noteworthy towns are (going from north to south) Kosgi and Yemmiganúru in Ádóni taluk, Siruguppa in Bellary, Kampli in Hospet and Kottúru in Kúdligi taluk.

Etymology of the name.

The district gets its name from its head-quarter town, but the etymology of the word is not a matter upon which it is safe to dogmatise. Several derivations have been suggested, but none of them are convincing. Local tradition, which is supported by an account in one of the Mackenzie MSS., says that the name is corrupted from Bala-hári, meaning "the defeat of Bala," and that this Bala was an *ásura* (demon) who lived here and was slain by Indra, because he harassed the *dévakanyas*, or damsels of the divine world.

Natural divisions.

As will be seen in more detail below, Bellary consists of two widely differing natural divisions, an eastern and a western, separated by the Sandur hills which occupy the Native State of that name and run right across the middle of the district from north-west to south-east. The eastern division, which is half as large again as the western and is made up of the four taluks of Ádóni, Alúr, Bellary and Rayadrug, is a flat, almost treeless expanse covered mainly with black cotton-soil diversified here and there by the rocky hills so characteristic of the Deccan which rise out of it "like islands out of the sea". The western division, though it contains scattered patches of cotton-soil, is for the most part covered with mixed and red ferruginous soils, is broken up (except in Hadagalli taluk) by constant successions of wild and rugged hills,

lies at a greater elevation than the eastern and has a slightly larger rainfall. Both divisions have this in common that they slope gradually northwards towards the Tungabhadra. CHAP. I.  
HILLS.

The Sandur hills already mentioned are, after the Tungabhadra, the most noticeable physical feature of the district. They begin at Málápuram on the bank of the Tungabhadra and run south-east for over 30 miles with only one break, the two beautiful gorges by which the Narihalla river crosses their main axis at right angles. Their highest point is the hill above the famous Kumárasvámi pagoda near their southern boundary, which is 3,400 feet above the sea. Rámanmalai, in the centre, overlooking the little hill-station of Bamandrug, is 3,256 feet, and the bold peak of Jambunath on the extreme northern limit is 2,980 feet in elevation. The Sandur hills.

The lesser hills of the district, where they form rangos, usually all strike in a direction roughly parallel to the Sandur hills—from north-west to south-east. The best known of them is the ridge called, after its highest point, the Copper Mountain<sup>1</sup> hills, which stands six miles east of the Sandur range and about the same distance south-east of Bellary town. This runs from the Daróji tank south-east for 26 miles to within about four miles of the Hagari river. The Copper Mountain is 3,285 feet above the sea. The Copper Mountain hills.

Some 30 miles south-west of the Sandur hills, in the Hada-galli and Harpanahalli taluks, rises the Mallappangudda range, the chief peak of which, Mallappan Betta, is 3,177 feet. Like the Sandur range, it starts close to the Tungabhadra (at the gorge at Honnúru) and runs south-east. After some 25 miles it is broken by the valley of the Chikka Hagari, but it begins again about seven miles further on and extends into Mysore territory. The Mallappangudda range.

South-west of this again and about eight to ten miles from it, are the Kallahalligudda hills, the largest of which, Kallahalli Peak, is some 2,800 feet high. They are about nine miles long and though, as before, their general direction is from north-west to south-east, a considerable offshoot from them strikes nearly south-west. Thereafter, though not without a break in their continuity, they run on to form the group of hills south of Harpanahalli town, chief of which is Narasimhadévaragudda, 2,544 feet, and they end in the south of the taluk in Uchchangidurgam (2,674 feet), the precipitous sides of which are crowned by the oldest drug, or hill-fortress, in the district. The Kallahalligudda hills.

<sup>1</sup> So named because of the legend that Haidar Ali mined copper there. See below. The natives call the hill Sugalamnakonda or Sngadévibetta.

CHAP. I.  
HILLS.

The Kúdligi  
hills.

In the adjoining Kúdligi taluk two lines of hills occur which follow, though in a less obvious manner, this same general direction. The first is the Kúdligi line. It begins three miles north of Ánkallugudda (2,378 feet) at the trijunction of the Kúdligi, Hospet and Hadagalli taluks, passes to the north and east of Kúdligi town and terminates some five miles south-east of Jaramali Drug (2,743 feet), its chief peak.

The Gudé-  
kóta hills.

The second of these lines is the Gudékóta group of hills. This begins at Chóranúru, four miles from the southern boundary of Sandur State, trends south-east, passing to the north of the fort of Gudékóta, crosses the valley of the Chinna Hagari and the strip of Mysore territory which is here wedged in between Kúdligi and Rayadrug taluks and ends in the hill-fort of Rayadrug (2,727 feet). The striking mass of Kailása Konda, just south of this, is 3,011 feet high; in Kúdligi taluk the line includes one hill of over 2,800 feet and at least another of over 2,600 feet; and the group contains perhaps the wildest and most rugged country in the district.

The Alúr  
hills.

In the north of the district are two other lines of hills which, though they are too detached to be called ranges, yet follow generally a direction parallel to those above referred to. The first of these begins with the Kenchanagnddam hill on the bank of the Tungabhadra in the north of Bellary taluk and runs south-east, forming successively the striking cluster of hills round Halékóta, the Kanchagára-Bellagallu<sup>1</sup> ridge, the hills near Holalagondi (chief peak 2,151 feet), the confused group north-east of Alúr town, the highest point of which, Arikera hill, is 2,127 feet, and the isolated peaks of Hattibellagallu, Rámadurgam (2,029 feet), and Chippigiri (1,690 feet).

The Ádóni  
hills.

The second line, which takes a rather more southerly direction than its fellows, begins at Kosgi in Ádóni taluk, and includes Kamanghát (2,101 feet), the Ádóni cluster (highest point 2,000 feet) and the lesser hills to the south-east of this. It is some 36 miles in length and separated from the other by a plain of black cotton-soil about twelve miles across.

Detached  
groups and  
peaks.

Besides all these ranges and lines of hills Bellary contains several isolated clusters and eminences.

The best known of these are the two rugged and picturesque groups lying north of the Sandur range and between it and the Tungabhadra. The first of them, the Daróji hills, is separated

<sup>1</sup> Bellagallu means "white rock" and the ridge is so named from the great scipitous white quartz run which crests it for fully four miles.

from the Sandur hills by the valley along which the Southern Mahratta Railway runs from Bellary to Hospet, and extends from the Daróji tank nearly to Hospet. The second group, the Kampli hills, lies north again of these and is divided from them by the valley through which passes the road from Daróji to Hampi, the old capital of the Vijayanagar empire. The highest point in this latter group is Timmapuram hill, 2,133 feet. Another cluster worth mention is that at Kurugódu, 14 miles north-north-east of Bellary town (highest point 1,966 feet); and finally there is the Bellary rock itself, the top of which is 1,976 feet above the sea.

CHAP. I.  
HILLS.  
—  
Detached  
groups and  
peaks.

As will be seen immediately, the Sandur hills and the Copper Mountain, Mallappangudda and Kallahalligudda ranges are of Dharwar rock, while the rest of the hills and clusters are of the older granitic formation. The difference in the outward appearance of the hills of these two classes is most striking. Those belonging to the former have rounded outlines and summits, are cut into ravines, are covered with long grass and are often surrounded by slopes of detritus washed down from their sides. The granite hills, on the other hand, are composed of masses of almost totally bare rock, relieved only by the babul trees and low thorny scrub which grow in their crevices, and this rock has usually weathered and split into enormous boulders which have either grouped themselves in lines and castellations, sometimes so regular as to have a most artificial appearance, or have remained poised on end as single tors, or crashed down the sides of the hills and formed huge impassable sorcees around their feet. The Sandur valley may justly be called beautiful, the western taluks are usually diversified by picturesque valleys and the tree-growth in them is grateful and refreshing, but the great level, treeless, expanses of cotton-soil in Adóni, Alúr and Bellary taluks have found few admirers. Even there, however, it is only when there is no crop upon the ground and the sad colour of the untilled soil is able to assert itself that the outlook is repellent. At other times the country has at least the saving grace of colour. Hills are always in sight, and in sunlight the nearer of them glow with dark purples and deep golden-browns in wonderful contrast to the pale blues and delicate yellows of their fellows in the distance, the vivid greens of the patches of trees in the hollows, and the varied tints of the soil, which range from the dead black of the newly-turned land, through every gradation of brown, down to the pale greys of the uncultivated patches. Mirages are a characteristic feature of this part of the country. They usually take the form of lakes with trees growing along their margins.

Scenery.

CHAP. I.  
RIVERS.

The river system of Bellary is simple. Except a few square miles in the extreme east of Alúr and Ádóni taluks which drain into the Hindri in Kurnool and an even smaller portion of Rayadrag which slopes towards the Pennér, the whole of the district drains into the Tungabhadra or one of its tributaries.

The Tunga-  
bhadra: Its  
name.

After forming the boundary of Bellary along the whole of its western and northern sides, the Tungabhadra falls into the Kistna a few miles below Kurnool town. The ancient and puránic name of the river was the Pampá, by which it is mentioned in the Rámáyana and which still survives<sup>1</sup> in the name of the village of Hampi, which was originally known as Pampátirtha. It gets its present appellation from the fact that it is formed by the junction, in Mysore, of two rivers called respectively the Tunga and the Bhadra. These both rise in the same hill, Varáha Parvata, high up in the Western Gháts on the frontier between South Canara and Mysore State, and after running widely different courses unite at the sacred village of Kúdali ("confluence"), eight miles from Shimoga, to form the Tungabhadra.

Its mytholo-  
gical origin.

The mythological origin of the river is as follows<sup>1</sup>: Hiranyáksha, son of Kasyapa Rishi by Diti Dévi, seized the earth and bore it down to the lower world. The Bráhmans, having no ground to stand upon, discontinued their usual rites and sacrifices. The demi-gods, being thus deprived of their usual offerings, complained to Vishnu, who, assuming the form of a *Varáha* or boar, plunged into the ocean, entered the lower world, destroyed the demon and brought up the earth again. The perspiration arising from this exertion of the boar trickled down its tusks as it rested on the Varáha Parvata, that from the long (*tunga*) left tusk which he had used as his weapon forming one stream and that from the firm and strong (*bhadra*) right tusk with which he had borne up the earth making another. The waters of the Tungabhadra are reputed to have a peculiar sweetness, which has given rise to the saying "Bathe in the Ganges but drink of the 'Tunga'" (గంకా స్నానము తుంకా పానము).

Its rate of  
fall.

Including all its many windings, the river forms the western and northern boundary of the district for just over 200 miles. It enters it at a point eight miles below the railway bridge at Harihar, where it flows at a height of 1,730 feet above the sea. About thirteen miles after it has left the district, at the Sunkésula anicut in Kurnool which supplies the Kurnool-Cuddapah Canal, it is 948 feet above sea level, and the fall above the anicut is rapid.

<sup>1</sup> See Rice's *Mysore*, ii, 487.

The height of the river above the sea at the point where it leaves the district is thus probably about 1,000 feet. This gives a fall within the district of 730 feet in some 200 miles, or something under  $3\frac{1}{2}$  feet a mile on the average. But the fall in different sections of the river's course is very unequal. Up to the Vallabhápuram anicut in the north of Hadagalli taluk it drops scarcely as much as two feet a mile, but between that point and Kampli it falls 381 feet, or nearly 14 feet a mile. Several rapids occur in this part of its course, the most notable being those at Málápuram, close by the proposed site of the dam for the Tungabhadra Project, where the stream cuts through the northward extension of the Sandur hills. Another set has formed just above Kenchanaguddam, in the north of Bellary taluk, where the river passes through the continuation of the Alúr line of hills above referred to.

CHAP. I.  
RIVERS.  
Its rate of fall.

Where it enters the district the river flows between high banks of red loam, and lower down much of its bed is deep. This characteristic and the fact that the land usually falls sharply down to the river are two of the reasons why, though the flow of water in it is perennial and never entirely dries up, it has been so little used for irrigation. Its margins in many places, especially on the right bank and in the reaches above Málápuram, are frequently covered with extensive deposits of shingle, which show that its bed must have originally been much wider than it now is. These at Makarabbi are several hundred acres in extent and some 100 feet above the present level of the stream. No navigation is possible along the river, as its bed is for the most part rocky, but in former times much timber used to be floated down it from Mysore, landed at the Vallabhápuram anicut, and thence taken to Bellary and elsewhere. Striking gorges occur at Hampi and Honnúru. Except in the rains the river is usually fordable and where it is not the people cross it in circular basket boats from eight to twelve feet in diameter made of split bamboo wicker-work and covered outside with hides.<sup>1</sup>

Its banks and bed.

There are no road bridges over it, though numerous basket-boat ferries are maintained along its course, but it is crossed by the Southern Mahratta Railway near Hospet and by the North-west line of the Madras Railway near Rámpuram in the north of Ádóni taluk.

Islands occur here and there in its bed. There is one just below Angúru in the Hadagalli taluk which, though submerged

Its islands.

<sup>1</sup> See Chapter VII.

CHAP. I.  
RIVERS.  
Its islands.

at high flood, is partly cultivated ; another stands just above the Málápúram rapid already mentioned ; a third lies in the middle of this rapid and runs down as far as the Southern Mahratta Railway bridge ; and there are three more at Kenchanaguddam, namely, one above the rapids there, one in the middle of them and one just below them. This last, Désanúru island, is the largest of the series, being six miles long, containing the village of Désanúru and one or two hamlets, and being much of it richly cultivated.

Tributaries  
of the  
Tunga-  
bhadra : the  
Hagari.

The only two tributaries of the Tungabhadra within Bellary which are worthy of the name of rivers are the Hagari, which drains most of the western half of the district, and the Chikka Hagari,<sup>1</sup> or "little Hagari," which lies sixty miles away on the other side of the Sandur hills and traverses the three western taluks.

Like the Tungabhadra, the Hagari<sup>2</sup> is formed by the junction of two streams which rise and unite in Mysore. These are the Veda and the Avati, and in that State it goes by the *alias* of the Vedávati, a word derived, like Tungabhadra, from the names of the rivers which give it birth. In Chitaldrug district it passes through a striking gorge known as the Mári Kanive, across which the Mysore Government have thrown a gigantic embankment to render its waters available for irrigation. Within Bellary it flows nearly due north in a wide, shallow, sandy bed which is dry for a great part of the year but after heavy rains is filled with violent torrential floods which occasionally do much damage to the wet cultivation along its banks. In 1851 the waters rose and washed away the town of Gúliam, once the head-quarters of a taluk, on the right bank. The river is crossed by the Southern Mahratta Railway near Paramádévanahalli and at this point it flows at an elevation of about 1,330 feet above the sea. Where it enters the district, some 57 miles higher up, its bed is 1,640 feet above sea level. Its fall in this portion of its course is thus about  $5\frac{1}{2}$  feet a mile.

When the bed is dry the strong westerly winds carry much sand out of it and pile this up in dunes on the right bank. These are seldom as much as 20 feet high but they continually advance

<sup>1</sup> This river is called indiscriminately the Chikka Hagari and the Chinna Hagari. There is, see below, another Chinna Hagari in the district, a tributary of the Hagari. This latter is known in Mysore as the Janaga-halla, but the name is not recognized in Bellary. For the sake of distinction, therefore, the present stream may be called the Chikka Hagari throughout and the other the Chinna Hagari.

<sup>2</sup> The name is said to be derived from *hagga-ari*, "freeing from the bonds (of sin)." Rice's *Mysore*, ii, 538.

eastwards and have overwhelmed two villages—Jiriganúru (hamlet of Sidiganamola), three miles below the railway bridge, the ruined temple of which still appears above the sand, and “Bodurti,” eight miles from Honnúru, which is said by Lieutenant Newbold<sup>1</sup> the geologist to have been buried thirteen or fourteen years before his visit in 1839 and to have then been covered with sand up to the tops of its walls. The blown sands are widest between this Honnúru and Márlamadiki in Alúr taluk, a length of forty miles. At the Mókka ford, on the road from Bellary to Alúr, they are, from first to last, including the sandy stretch on the left bank of the river, some three miles wide. The contrast between their bright yellow slopes and the black cotton-soil on which they have been deposited is very striking. Of late years the encroachment of the sand has been checked in several places by plantations of casuarina trees.

The only noteworthy tributaries of the Hagari are the Chinna Hagari, which rises in Mysore State, drains the western parts of Kúdligi taluk and joins the Hagari in the north of Rayadrug taluk, and the Pedda Vanka (“big nullah,” one of several streams so named) which rises in the Copper Mountain range and drains the greater part of the black cotton-soil plain of which Bellary taluk mainly consists.

The Chikka Hagari, like all the other chief streams of the district, rises in Mysore State. Its course is nearly due north and after draining parts of Harpanahalli, Kúdligi and Hadagalli taluks it falls into the Tungabhadra near Kittanúru.

The minor streams which flow into the Tungabhadra are none of them much more than nullahs. Going from south to north, the chief of them are the Haggaranúru nullah, rising near Harpanahalli and draining the country west of the Mallappangudda hills; the Hampáságaram nullah, which joins the Tungabhadra at the village of that name; the Hampápatnam or Belláhunishi nullah which drains the hilly country north of Kúdligi; the Gauripuram nullah which runs along the western base of the Sandur hills; the Narihalla river, which flows across the Sandur State through the beautiful Óbalagandi and Bhímagandi gorges, is dammed up to form the Daróji tank and thence flows northwards to the Tungabhadra; and the Harivánam nullah or Kariji vanka, which drains the country lying between the Alúr and Ádóni hills above referred to.

Such little irrigation as all these rivers and streams afford is referred to in Chapter IV below.

It will be evident that since the district drains from the south northwards into the Tungabhadra it must have a general slope in

CHAP. I.  
RIVERS.

Tributaries  
of the  
Tunga-  
bhadra: the  
Hagari.

The Chikka  
Hagari.

Minor  
streams.

<sup>1</sup> *Madras Jour. Lit. and Sci.*, ix, 310.

CHAP. I.  
RIVERS.  
Level of the  
district.

that direction. It has been seen that the lowest point of the bed of the Tungabhadra, at the north-east corner of the district, is about 1,000 feet above the sea. The levels of the highest part of the district, along its southern frontier where it runs up into the Mysore plateau, have been ascertained by the officers of the Mysore Topographical Survey. They found<sup>1</sup> that the southern boundary of the Harpanahalli taluk was approximately 2,000 feet high, falling to 1,730 feet in the valley of the Tungabhadra and to 1,900 feet in that of the Chikka Hagari. East of this latter river the ground rises again and on the Kúdligi boundary south of Ujjani (the great Lingáyat centre) reaches 2,108 feet and south of Nimbalogiri, east of this, 2,216 feet. This is the highest level in the district, for eastwards again the country falls away to the valley of the Chinna Hagari and is only 1,534 feet at the point where this river enters the Rayadrug taluk, and 1,540 feet where the Hagari enters it further south.

## SOILS.

As has already been stated, the eastern taluks of the district consist for the most part of black cotton-soil (*régada*), while mixed (*masab*) and red ferruginous (*lál*) soils predominate in the western country. The percentages borne by each of these to the total area of each taluk are given in the margin.

	Black.	Mixed.	Red.
Ádóni ... ..	65	...	35
Alúr ... ..	77	15	8
Bellary ... ..	82	...	18
Rayadrug ... ..	27	54	19
Hospet ... ..	8	90	2
Kúdligi ... ..	7	24	69
Hadagalli ... ..	32	47	21
Harpanahalli ... ..	12	87	1

Black  
cotton-soil.

The best *régada* in the district is that in the Ádóni and Alúr taluks. This soil hardly ever occurs in hilly tracts, the rock in these being covered with red earth produced by its own disintegration, and where a large hill rises in the middle of a plain of black soil it is nearly always surrounded by a fringe of this red land. Thus it is in the west of Bellary and Rayadrug taluks and in the centre and south of Ádóni, near the hills, that most of the mixed and red soils in them are found. The *régada* in Hadagalli mostly lies in the south and the north-east of the taluk.

The origin and properties of black cotton-soil have been much discussed but have yet to be finally determined. In some quarters it is believed to be derived from basalt by surface decomposition, in others to be argillaceous earth impregnated with organic matter, or an ancient forest humus, and in yet others to

<sup>1</sup> The figures given are quoted from p. 7 of Mr. Bruce Foote's account of the geology of Bellary in Mem. Geol. Surv. India, xxv, 7.

have been deposited at the bottom of lakes or lagoons. It contains a larger proportion of organic matter than most other soils, though the percentage is not really high, and a considerable admixture of carbonate of lime, and its properties of retaining moisture, of cracking deeply in every direction in the dry weather and becoming impassably sticky in the wet are well known. Several theories have been propounded to account for its colour. Dr. Leather<sup>1</sup> has recently disproved the idea that this is due to organic matter, as boiling with concentrated sulphuric acid has little effect upon it, but leaves a dark brown residuo which is apparently due to some mineral peculiar to this soil.

CHAP. I.  
SOILS.  
Black  
cotton-soil.

In Bellary the cotton-soil is generally some four feet thick, though in places the depth is much greater. It is usually supposed by the ryots to require no manure and to be incapable of exhaustion but in other parts of India cultivators are now beginning to manure it. It is seldom irrigated. Its great enemy is a deep-rooted grass called *nath* grass (*cyperus rotundus*) which the ordinary methods of cultivation fail to remove and which has to be exterminated by deep ploughing with iron ploughs. Trees do not grow well on it. This has been attributed to the layer of limestone which often underlies it, but another theory<sup>2</sup> is that the periodical cracking of the soil exposes and ruptures the smaller roots of the trees and thus checks their growth, and ploughing round their roots has been suggested as a remedy. It is also probably largely true that on this soil trees are not in any way encouraged to survive, lest they should overshadow and harm the crops. In the oases in the cotton-soil taluks which are afforded by such spots as forest reserves, railway station compounds and so forth, trees may be often found growing with vigour.

The red and mixed soils vary widely in composition and quality, ranging from deep ferruginous loams down to poor varieties which appear at first sight to consist wholly and entirely of pebbles as big as hens' eggs, but which nevertheless succeed in producing a crop if only the rainfall is sufficient.

Red and  
mixed soils.

Detailed statistics of rainfall are given in Chapter VIII below. The average for the district is under 23 inches, which is less than is received in any other in the province.

CLIMATE.  
Rainfall.

The only station in the district at which systematic meteorological observations (other than the registration of rainfall) are made is Bellary itself. There, a daily record of the temperature,

Temperature.

<sup>1</sup> Final report, dated 1st November 1897.

<sup>2</sup> Mollison's *Text-book of Indian Agriculture*, p. 22.

CHAP. I. the humidity of the atmosphere and the wind velocity is kept at  
 CLIMATE. the hospital and the results are telegraphed daily to the Meteorological Reporter at Madras. The marginal statement gives  
 Temperature.

	Average maximum.	Average minimum.	Mean.	
January ...	87·6	67·5	74·0	the average maxima
February ...	94·2	65·4	79·8	and minima and the
March ...	100·3	72·1	86·2	mean temperatures
April ...	103·4	77·1	90·2	in degrees Fahrenheit
May ...	102·4	77·5	89·9	deduced from the
June ...	94·5	75·7	85·1	figures of a series of
July ...	90·9	74·6	82·7	years. It will be seen
August ...	90·8	73·6	82·2	that from March to
September ...	90·6	72·7	81·6	May the thermometer
October ...	89·7	71·1	80·4	keeps unpleasantly
November ...	86·7	65·6	76·1	high. April, the
December ...	85·6	60·9	73·2	hottest month, has a
The year ...	93·1	70·6	81·8	

mean of 90° and an average maximum of 103°. The dryness of the air, however, makes the temperature far more bearable than in the damp coastal districts. From November to February the district enjoys a genuine cold weather, the days being delightful and the temperature at night often falling below 55°. The mean temperature in April is higher than that at any of the 20 recording stations on the plains in Madras except Cuddapah and Kurnool, but the mean in December is lower than in any of them except Kurnool and the three stations—Gopalpur, Waltair and Cocanada—in the three northernmost districts of the Presidency, while in the months following April the mean in Bellary is, in comparison with that of other stations, relatively noticeably cool. For nine months in the year, in short, the climate of the district is, as Madras climates go, exceptionally pleasant. The south-western taluks, from their higher altitude, are the coolest quarter. The highest temperature recorded since 1889 was 111°·2 on May 15th, 1897, and the lowest 47°·2 on January 5th, 1890.

Temperature is not now officially recorded at Ramandrug, but the first edition of the present Gazetteer states that the thermometer has never been observed to rise above 87° there, and gives figures for December to June showing that the place is on an average 13° cooler than Bellary at 2 P.M.

The considerable diurnal range of the temperature at Bellary is noticeable. It also occurs throughout the district and it is this contrast between the cold nights and the burning middays which has done so much to fracture the rocks of the country into the extraordinary shapes they often assume.

In the humidity of its atmosphere Bellary occupies a very exceptional position. It is considerably the driest of all the places in the Presidency at which a record is kept. Of the five-day periods for which the Meteorological Department works out averages the driest in the year is usually that from March 12th to March 16th and the dampest that from September 28th to October 2nd.

CHAP. I.  
CLIMATE.  
Humidity.

Month.	Direction of wind.	Daily velocity in miles.
January	S. 68° E.	81
February	S. 57° E.	92
March	S. 35° E.	109
April	S. 63° W.	127
May	N. 73° W.	201
June	S. 86° W.	251
July	S. 87° W.	282
August	N. 87° W.	263
September	N. 78° W.	223
October	N. 42° E.	104
November	N. 81° E.	77
December	S. 86° E.	76

The normal direction and velocity of the wind in each of the twelve months are given in the marginal table, which shows that it is during the south-west monsoon that the strongest breezes blow. Trees in exposed situations will be seen to be generally leaning over to the east, and the blown sands of the Hagari river lie mainly on its right, or eastern, bank.

Winds.

Five-sixths of Bellary is covered with the Archæan rocks which form the fundamental series of the peninsula.<sup>1</sup> Whether they are simply very ancient sedimentary deposits or old Plutonic rocks arranged in bands and flows is not as yet very certain, but appearances point to the latter hypothesis being the more probable. They may be divided primarily into two classes—granitoid and gneissic. The granitoid are the older, and upon them the gneisses, and afterwards the rocks of what is known as the Dharwar system, were deposited by quiet, long-continued sedimentary action. Subsequently a period of great disturbance supervened and the Dharwar rocks were crumpled by immense lateral pressure into great folds with a strike usually running from north-west to south-east. The granitoids underlying them were necessarily crumpled with them. Later there followed a period of vast erosive action, thousands of feet of the upper rocks were denuded and removed, and the underlying gneissic and granitoid foundation was again exposed over great areas, and now, as has been stated, covers five-sixths of the area of the district.

GEOLOGY.  
Archæan rocks.

The Dharwar rocks, however, remain in four well-marked bands which all of them run right across the district from north-west

The four Dharwar bands.

<sup>1</sup> The geology of the district has been exhaustively dealt with by Mr. Bruce Foote, F.G.S., in his account of it in Vol. XXV of the *Memoirs of the Geological Survey of India*. The following description is condensed from that account and I am also indebted to it for many other details of interest connected with the district.

CHAP. I.  
GEOLOGY.  
The four  
Dharwar  
bands.

to south-east following the strike of the folds already mentioned. The most important of these is the twin band which comprises the two parallel ranges of the Sandur hills and the Copper Mountain ridge already above referred to. They are coupled together by a connecting strip of rocks of the same system running east and west across the valley of the Narihalla river north of Sandur State.

South of these two the Mallappangudda range, also described above, similarly belongs to the Dharwar system, and south of this again the Kallahalligudda range and the whole of the country south-west of it is also Dharwar rock.

The last of the four Dharwar bands referred to is less marked than those other three, there being no hills of importance along its course. It is called the Pennér-Hagari band, lies north of the Sandur State, and runs from Nadivi (on the bank of the Tungabhadra, in Bellary taluk), south-eastwards to the valley of the Hagari at the point where the Southern Mahratta Railway crosses it, and thence on into Anantapur district. An irregularly shaped off-shoot of this travels south-west as far as Kampli town.

The great interest of these Dharwar bands lies in the fact that, as will be seen in more detail later, they are the only rocks in the district which contain any notable mineral wealth, the older formations being almost entirely destitute of metals. Another noteworthy point about them is that they form the material of which the highest peaks in the district are constituted, the summits of the gneissic and granitoid areas being of smaller elevation.

It used to be held that they were eruptive bands which had forced their way upwards through an older, overlying stratum of granite, but this theory has had to give way to the view just stated, namely, that they are in reality younger than the granites, and so far from having burst through these latter are the last remaining traces of a mass of rock which was deposited upon them and afterwards for the most part eroded and removed.

Chief hills of  
the Archæan  
system.

Most of the Archæan rocks are granites more or less porphyritic in character, and generally pale grey or pinkish white in colour. They form many of the best known hills in the district. Going through it from north to south, the Ádóni group consists of granite which in places is richly coloured and capable of a high polish, and so would make admirable building material. The Alúr hills are mainly composed of a hornblendic granitoid, generally banded in structure. The rocks at Hampi are a moderately fine-grained pale grey granite. At Bellary the north hill ("Face Hill") is composed of porphyritic granite, greyish when freshly broken, with pink blotches formed by included orthoclase crystals, and weathering to a dull pale brownish pink, while the rock on which

the fort stands is much less porphyritic, of a lighter grey, of a finer texture and so less weathered than the north hill, and, owing to the differences in the jointing of the rocks of which it is formed, less castellated in appearance. Rayadrug is of grey granite, weathering into large blocks which are rather more rounded than usual. Near Gudékóta the granite changes to a bluish tint and the size of the blocks to which it weathers greatly increases, those round the Gudékóta fort itself being perhaps some of the largest in South India. Uchehangidurgam in the southern extremity of the district consists of very massive granitoid showing little or no lamination.

CHAP. I.  
GEOLOGY.  
Chief hills of  
the Archæan  
system.

The four bands belonging to the Dharwar system deserve, from their economic interest, a more detailed description. Returning northwards again, the first of them which is reached is that which contains the Kallahalligudda hills.

The Kallahalligudda  
Dharwar  
band.

This range owes its elevation mainly to a large number of important beds of hematite quartzite which from their hardness have weathered less rapidly than the surrounding rocks. These travel all along the range from its northern extremity down to Kallahalli Peak and then follow the south-western outliers from the main range up to and across the Tungabhadra. Thence they sweep north-east again and so make a rough horse-shoe of which Kunchúru village is the apex. South of these, the ridge which runs north and south three miles east of Teligi contains more hematite in a triple bed, and yet other deposits occur west of this along the bank of the Tungabhadra. On the north-west side of the Teligi ridge is an old iron mine of small extent. Many of these hematites would be worth smelting if only fuel were cheaper and more abundant.

Hematite  
quartzite.

Quartz veins which appear to be worth prospecting for gold occur to the south of Kallahalli Peak, at the north-eastern end of the small group of hills two miles west of Nilagunda, and to the east and north-east of the Teligi ridge.

Quartz veins.

Travelling northwards to the Mallappangudda band of the Dharwar system, more hematite is met with, the beds rising rapidly into the great western shoulder terrace of Mallappangudda hill and continuing for six miles more to form the conspicuous western scarp of the high Mallappangudda ridge. They then sink again and are lost at the Kanavihalli pass, but re-appear in the extension of the hills which run down towards Chigatéri.

The Mallappangudda  
Dharwar  
band.  
More hematites.

In the group of hills north-west of Chigatéri are fairly numerous quartz reefs and a resident of the village obtains a fair show of gold by washing the streams which flow from the hill marked

Gold-  
washing.

CHAP. I. "Janjceculgooda Platform" on the taluk map. The best yield  
 GEOLOGY. is obtained from the nullah which runs north past Konganahosúru  
 village. Further particulars will be found in the notice of Chigatéri  
 village in Chapter XV below.

Signs of  
 diamonds.

In the northern part of the Mallappangudda band, on a low hill just south of Dévagondanaballi (three miles south of Huvinahadagalli, see p. 239 below) Mr. Bruce Foote found signs of an old diamond-working in an outcrop of pebbly conglomerate not unlike the diamond-bearing conglomerate at Banganapalle.

Sandur-  
 Copper  
 Mountain  
 twin band.

Going still northwards, the twin band of the Sandur hills and the Copper Mountain range is reached. These are both of them synclinals, that is, huge troughs formed by the lateral pressure to which the Dharwar rocks have been subjected. In the Sandur range the outer sides of the trough form the two ridges which enclose the valley in which Sandur village lies, but in the Copper Mountain ridge the denudation has been more complete and the trough shape is not noticeable unless the rocks are examined in section.

Hematites  
 plentiful and  
 rich.

Both synclinals contain very numerous beds of hematite. The supply is, in fact, practically unlimited and it is often exceedingly rich in iron. Mr. Bruce Foote has pronounced it to be probably the richest country in iron ore in all India and one of the richest in the world, and to exceed in wealth even the famous magnetic iron region in Salem district. The beds of hematite all run lengthwise along the two ranges, following their general direction from north-west to south-east. They are too numerous for separate description. The richest outcrop in the Sandur hills occurs half a mile south of Kummataruvu village, near the southern limit of the State, where the hematite forms the broad crest of a ridge some 150 feet in height which apparently consists entirely of pure steel-grey crystalline hematite (specular iron) of intense hardness.

Native iron-  
 smelting.

Until recently, the softer ores used to be mined and smelted on a small scale in a primitive fashion by the natives. One of the chief mines they used is called Adar Gani, and is situate  $1\frac{1}{2}$  miles west by north of the well-known Kumárasvámi pagoda near the southern boundary of the State. The ore was carried on pack-bullocks to smelting centres at Kanivehalli in the valley of the Narihalla and to Shidégallu in Kúdligi taluk, fifteen miles to the southward. At the northern end of the range the ore found on Jambunath Konda, the conspicuous peak which there terminates the range, used also to be smelted at Kámalápuram in Hospet

taluk and worked up into the big boilers used for making jaggery from the juice of the sugar-cane which is so extensively grown round about Hospet. The iron industry is now dead, the cheaper English material having ousted that smelted by the natives.

CHAP. I.  
GEOLOGY.

In addition to iron, manganese ore also occurs in three places on the Sandur range, namely, on the western slope of the Ramandrug plateau, half way down the ghát road leading to Náráyanadévarakeri; at the southern end of the range, the deposit being crossed by the path from Kummataruvu to Tonshigiri in Kúdligi taluk; and, thirdly, two miles south of Kanivehalli on the western flank of a small spur extending northward from the south-western apex of the curve of the hills by Kumárusvámi pagoda. Ore from the first of these deposits has been analysed and found to contain 43 per cent. of manganese dioxide, and the last of them, which is so situated as to be capable of being mined by ordinary quarrying and easily removed, appears to be even richer.

Manganese  
ore.

Two miles east of the travellers' bungalow at Ettinahatti and within the limits of the Sandur State, at a place called in Canarese *Surung Maradi*, or "mine-hill," are three old "drives" into the side of the hill which are not visible from the lower ground. They have been cut into the quartz, which is here of a likely-looking blue colour, and are clearly old gold-workings. They are greatly choked with mud and débris and it is not possible to say with exactitude how far they extend into the hill-side. No one has yet prospected the place systematically and it is not known whether the mines were abandoned because of the failure of the vein or in consequence of one of the many political convulsions which passed over this country. A detailed account of the three drives, written by Mr. Sewell when Collector of the district, will be found in the *Madras Mail* of August 1893.

Gold.

Continuing to travel northwards we reach the last of the Dharwar bands, the Pennér-Hagari band. This contains but little of the hard hematite quartzite and consequently has been so completely denuded that it includes few hills of any size. It is also so covered by superficial deposits, especially continuous spreads of cotton-soil, that its nature cannot be examined in detail.

Pennér-  
Hagari  
Dharwar  
band.

Both the Arohæan and the Dharwar systems contain a number of intrusive rocks. The most interesting of these are the quartz runs, varying in colour from white to chocolate, which stand out conspicuously upon the crests of several peaks in the district— notably Kanchagára Bellagallu in the Alúr line of hills—and the

Quartz runs  
and trap-  
dykes.

CHAP. I.  
GEOLOGY.

Quartz runs  
and trap-  
dykes.

trap-dykes consisting of the hard black hornblendic diorite<sup>1</sup> which is so often seen topping a succession of hills for several miles. The quartz runs are probably older than the trap-dykes, and some of the latter were intruded before the Dharwar rocks were deposited and some afterwards.

Both these intrusions are commonest among the Archæan rocks. The longest quartz run in the district is that at Harpanahalli, which extends for 14 miles on the north side of the town and rises in one place into a knot of hills 300 or 400 feet high, while the longest trap-dyke is that which crosses the Hospet-Kámalápuram road about three miles from Hospet and runs south-east for 27 miles to Ávinamadugu near the south-western base of the Copper Mountain ridge. Of the 260 dykes which have been found in the Archæan rocks 119 similarly run in a direction striking roughly from north-west to south-east.

Copper.

Besides the iron, manganese and gold above referred to, the only metallic mineral in the district which deserves mention is copper, which is found in very small quantities in two places. The first of these is in the above-mentioned great quartz run north of Harpanahalli, on the eastern slope of the saddle in it over which runs the main road to Hospet. The quartz is greatly stained by the green carbonate of copper for about 20 yards, but the amount of the ore is very small. There is an old mine there, but it was evidently abandoned almost as soon as it was begun. The second spot is in a quartz run at the highest point of the ridge  $2\frac{1}{2}$  miles east by north of Holalagondi in Alúr taluk, where the quartz is again stained green from traces of copper. The Copper Mountain is so called because of a tradition that Haidar Ali mined copper there and Lieutenant Newbold—a trustworthy observer and skilled geologist who travelled over much of the district between 1835 and 1840, when he was A.D.C. to the General Commanding at Bellary—saw signs of the occurrence of the metal on the range in the shape of traces of green carbonate in seams and incrustations in the refuse thrown out of the old mine. There was no continuous lode.<sup>2</sup> Even in his time the site of the mine was nearly obliterated and not discoverable without a guide, and Mr. Bruce Foote found his description of its situation<sup>3</sup> insufficiently exact to enable it to be identified and was unable to find either the mine or any indications of copper anywhere on the Copper

<sup>1</sup> Mr. Bruce Foote points out that this exceedingly hard rock would make much better road metal than the white quartz which it is the fashion to employ.

<sup>2</sup> J.A.S.B., xiv, 514.

<sup>3</sup> He says it is not far from "a columnar mass, 50 feet high," which "crowns the ridge."

Mountain ridge. His guides led him, indeed, to a shallow excavation on the south side of the steeply scarped north-east spur, which they said was the mine, but the substances they pointed out as traces of ore were "thin films of an impure sulphate of alumina, of a pale yellowish to pale dirty green colour, a recent product of decomposition due to infiltration, such as is often seen in damp excavations in similar rocks elsewhere, *e.g.*, in one of the two small caves nearer the summit of the mountain."

CILAP. I.  
GEOLOGY.  
Copper.

The supply of building stones of the best classes in the district is inexhaustible and many of the more handsome varieties deserve much more notice than has so far been vouchsafed them. Among the granites may be mentioned a rich deep red syenite forming a small hill about half way between Dammúru and Bailúru, eleven miles north of Bellary on the road to Siruguppa, and a dark blackish-grey porphyry full of large bright flesh-coloured felspar crystals which occurs on the north side of the Tóranagallu hill near the station of the same name on the line between Bellary and Hospet. Among the most attractive of the trap porphyries are a beautiful stone found about half a mile east of Huralihálu in the south-east corner of Kúdligi taluk, in which rich green crystals of felspar are embedded in large numbers in a blackish green matrix, and another somewhat similar variety occurring in a small dyke close to the right bank of the Hagari about  $1\frac{1}{2}$  mile south-south-west of the village of Mályam in Rayadrug taluk.

Building  
stones.

In the Sandur hills, especially in the eastern part of them, are found large quantities of splendid riband jasper which has similarly been up to the present entirely neglected. It occurs in every variety of tint from bright scarlet red to a delicate pinkish white, and from grey to deep purple and red, and would apparently make admirable mosaic and inlay work. Mr. Bruce Foote gives the following as the localities where the best specimens can be procured: (a) in the corner in the hills at the foot of the ruined hill fort of Timmappaghar, three miles north of Sandur, (b) on the top of the ridge north of this fort, (c) two miles north-west by north of the fort on the cliffs which form the northern side of the Ramgol ravine, (d) in the cliffs of Ubbalagaudi, a village in Hospet taluk just east of the Sandur range, and (e) on the ghát path leading from Ettinahatti bungalow to the Forest bungalow on the Dónimalai plateau south of the Bhímagandi gorge.

Jasper rocks.

These building stones and jasper rocks seem to be worth the attention of the Consulting Architect to Government when next the ornamentation of buildings in Madras is in question.

CHAP. I.  
GEOLOGY.

Potstone  
or steatite.

Another valuable building material is the potstone or steatite which occurs in several places in the district and which has been carved with such wonderful effect in the beautiful little Chálukyan temples in Hadagalli and Harpanahalli taluks which are referred to later.<sup>1</sup> This is soft when first quarried and hardens on exposure to the air, but at the same time it weathers remarkably well, some of the carvings in these temples, though deeply undercut and as finely chased as jewellery, remaining almost as sharp as the day they were executed, seven centuries ago.

The most important sources of this mineral are the hill at Nílágunda, near one of these temples, and a quarry four miles west-north-west of Hiréhadagalli, in which village there is another of them. On the low rise north of the Arasapuram hill in Kyáarakatti village of Harpanahalli taluk a greenish-grey steatite is mined and converted into bowls and platters for domestic use. A similar stone is used for the same purposes at Sómálápúram in Kúdligi taluk, four miles south-west of Sandur. This last clearly belongs to the Dharwar system, but the other cases seem to be of the same age as the Archæan rocks.

Limestones.

True crystalline limestones are rare in the district. They all occur in the Dharwar series, and the deposits are apparently all of them small and unimportant. Lime for building purposes is, however, procured in very many places from the formations of kankar or nodular limestone which are very commonly met with near to or on the surface of the hornblendic and other basic rocks which occur so largely in the Dharwar system as flows and dykes.

Mineral  
pigments.

The Dharwar system contains in places, especially on the western side of the Sandur hills, ochres of varied tints which are sometimes used for colour-washing houses and deserve more extensive employment. Under the ore bed in the Adar Gani mine already mentioned a rich red and a yellow variety are found; along the western base of the Ramandrug hill an intensely red earthy hematite occurs; at Ramandrug itself the deposits are purplish ranging to pink, whitish, and yellow; and in other places on these hills specimens of a delicate cream colour, of a pinkish lilac tint and of other shades are found. Probably these deposits might be successfully worked on commercial lines.

This concludes the list of minerals in Bellary. Except in iron and in building-stone the district is not minerally a rich one, but the quantity and the quality of its stores of these two substances are quite exceptional.

<sup>1</sup> Chapter XV.

The flora of the district has apparently never been systematically examined by the experts and a discussion of it by a layman would be a hazardous undertaking. In the drier eastern taluks the flora consists largely of such drought-resisting plants as the *euphorbias*, *asclepiads* and *acacias*. The characteristic tree there is the *acacia arabica*, or babul. Next in frequency comes the ním, or margosa. The western taluks have no lack of trees and in the damper hollows in them creepers and undergrowth flourish luxuriantly. In Kúdligi the characteristic trees are the date-palm, which lines the edges of every ravine and provides toddy for even such distant places as Alúr taluk, *cassia fistula*—"the Indian laburnum", sacred to Siva—and the tamarind, always a lover of granitic soil. Over all the waste land grow the golden-flowered *cassia auriculata* and the *dodonæa*. Perhaps their prominence is chiefly due to the fact that goats will touch neither of them. On the Sandur hills teak grows, though somewhat under protest, and a little sandal, and the forests contain a considerable quantity of a third valuable tree, namely, the yépi, or *Hardwickia binata*.

Though a hot and dry climate, such as that of Bellary, is usually supposed to be favourable to the production of large and strong cattle, the stock raised within the district are generally of a very mediocre stamp. Little or no care is taken in selecting bulls for breeding, any immature or poor specimen being used. Yet the ryots appreciate the advantages of getting a really good sire. Some years ago, for example, a sowcar presented a valuable bull to the temple of Nárappa at Chigatéri in Harpanahalli taluk and its services were freely availed of by the villagers. But good animals are seldom obtainable. Those dedicated to the village goddesses, except that they must be free from obvious deformity, are usually of no better stamp than their fellows, though the freedom with which they are allowed to graze where they choose among the crops keeps them in better condition.

The difficulty of getting satisfactory bullocks has always been one of the great hindrances to agriculture in the district. In Munro's time, 100 years ago, the cattle for the first yoke of the *pedda madaka*, or big plough, used in the cotton-soil country had always to be imported animals, none bred in the district being strong enough, and it is the same still. The only good animals obtainable are those imported from Mysore (and Dharwar) and from Nellore. The former (which bear a strong likeness to the well-known Amrat Mahál cattle, and are believed to be descendants of Amrat Mahál bulls distributed in the neighbourhood many years ago) are sold in large numbers at the annual fairs at Mailár

CHAP. I.  
FLORA.

FAUNA.  
Domestic  
animals.  
Cattle.

CHAP. I.  
FAUNA.

Domestic  
animals.  
Cattle.

and Kuruvatti in the south-western corner of the district. The Nellore cattle are brought over in large herds by drovers from that district and sold to the ryots, at very high prices, on the instalment system; a part payment down securing the purchaser the animal and the remainder of the price being paid in two subsequent instalments. If the purchaser does not pay these instalments promptly the drover often waits in his house, living at his expense, until the money is forthcoming. The cattle of Gudékóta in Kúdligi taluk have the reputation of being specially active and enduring on rough or stony ground, but they seem to have acquired this characteristic from the rocky nature of the country in which they are raised, and are apparently not a separate breed.

Buffaloes.

Many of the buffaloes of the district are peculiar in having a white patch between their horns and a white tuft at the end of their tails. In Kampli and Siruguppa and the villages round about them a very large breed which comes from near Raichur in the Nizam's Dominions is much used for pack work. These animals are brought across the river for sale once a year. The drovers bring only gelded animals—never cows or bulls—and so keep the breeding in their own hands. As much as Rs. 80 is paid for a good specimen of these buffaloes. They are used for taking manure to the fields and crops to the threshing-floors when the ground is too heavy for carts, and a good one, it is said, will carry a load of 15 maunds, or some 380 lbs.

Sheep.

The great majority of the sheep in the district are of the black or black-and-white wool-producing breed, but the long-legged red sheep, covered with hair instead of wool, is also met with. The woolly sheep are of what is known as the Mysore breed. For many years Sir Mark Cubbon had an experimental sheep farm in Mysore under the charge of a European Commissariat subordinate. Merino rams were imported yearly from Australia and the cross-breeds distributed all over the country. The breed of sheep was thus immensely improved in size, quality of mutton and wool.<sup>1</sup> The weaving of the wool into blankets is a thriving industry among the Kurubas, the shepherd-caste of Bellary, and is referred to again in Chapter VI below.

Goats.

The goat of Bellary is of the ordinary omnivorous variety.

Game.

The larger kinds of game are scarce in the district. Tigers are occasionally heard of in Sandur, but they probably come up from Mysore and are not permanent residents. Newbold says, however, that in 1838 they rendered the road from Hospet to Ramandrug dangerous to the solitary traveller, and Murray's *Guide*

<sup>1</sup> Shortt's *Indian Cattle and Sheep*, 2nd edn., 118.

to Madras mentions a tiger having killed a man and a woman at Daróji in 1879 and another man among the Hampi ruins. Leopards occur in the granite hills in Kúdligi taluk, especially round Jaramali and Gudékóta. Bears are found in these same hills, and the Bóyas are fond of hunting them, turning them out of their caves with spears and torches and then shooting them. They are also fairly numerous in the Kampli hills and sometimes do much damage to the sugar-cane. Hyænas and wolves are reported now and again in the western taluks. Pig are numerous in the Kampli hills, in parts of Kúdligi, and in the Sandur hills and commit havoc among the crops. The Bóyas often organise beats for them. A few saubhar survive in the Sandur hills and barking deer are said to be occasionally seen there also. The "chinkára" or "ravine-deer" (Bennett's gazelle) and the black buck are fairly common throughout the western taluks, and the latter are also often seen in the cotton-soil country.

CHAP. I.  
FAUNA.  
Game.

In the Tungabhadra crocodiles are numerous; so are otters, and the natives say that the latter are useful in keeping down the former, slaying their young in considerable numbers. There appears to be no record of mahseer having ever been caught in the Tungabhadra, though they have been occasionally taken in Mysore in the Tunga and the Bhadra.

Of the game-birds, peafowl are common throughout the western taluks, especially along the banks of the Tungabhadra. The Indian bustard is also met with in this same area and in Bellary and Rayadrug taluks. Partridges, quail, sandgrouse, pigeon and hares occur wherever the ground is suitable, but snipe and teal, as was only to be expected in so dry a climate, are rare, the former being plentiful only under the Kanékallu tank in Rayadrug taluk. Along the Tungabhadra, near Hampáságaram and Belláhunishi, the barred-headed goose is often met with.