

II. Topography

Pondicherry Region:

The region is a flat country of average elevation of about 15 metres above sea-level, intersected by the deltaic channels of River Gingee and the Ponnaiyar and other streams forming the two main drainage basins, interspersed with lagoons, lakes and tanks. To the north-west of Pondicherry town, a girdle of low hills (or an elevated ground of about 30 metres high) is noticed to extend in a E.N.E.-W.S.W. direction. This high ground suddenly emerges from the low lying alluvial plain country. Known as "**Les Montagnes Rouges**" or the "Red Hills of Pondicherry", or Gorimedu, probably so named after the memorials put up during the first siege of Pondicherry (1760) this forms the most prominent feature in the landscape. River Gingee crosses the region diagonally from north-west to south-east. Ponnaiyar forms the southern border. Actually the alluvial delta of Ponnaiyar is almost on dead level ground, only a few metres above the sea. To the north-west of these hills is a section of fossiliferous limestone formations of the Cretaceous age. To the south of this area is situated the alluvial tract of Varahanadi (Gingee) and to the north is the recent alluvium.

The Pondicherry area is said to mark the northern limit of the sediments laid down during the great Cenomanian marine transgression along the east coast of South India. ¹⁰ According to geologists this high ground might have been formed due to faulting and upliftment along a plane extending in a general E.N.E.-W.S.W. direction. The Muttirapalaiyam water wells which yield plentiful water may be lying along the plane of the postulated fault. According to them the lateritised scrap of the Cuddalore rocks west of Kalapet may also be representing a fault which, when extended, joins the Red Hills.

Black clays simulating marine clays have been observed in well cuttings to the west and south-west of Pondicherry with local intercalation of peaty materials and sands. The persistence of this horizon over a considerable area is said to be suggestive that the area at one time must have been a lagoon. There are evidences to show a gentle submergence along the east coast perhaps during the pleistocene times. During the periods several changes seem to have taken place including the change of course of certain rivers. According to geomorphologists the straight shore line is also suggestive of some structural dislocation. Shallow bays were formed during the submergence the limits of which may be traced from the presence of black sticky clays recorded in the area.

The unusual thickness of alluvium near Pondicherry (which is stated to exceed 167 metres) is said to be indicative that it was part of an extensive lagoon which has since been silted up and uplifted. Near Pondicherry, beds of peat at various levels below the surface of the ground have been recorded which also proves that there has been subsidence. 11 The presence of a shallow lagoon along the east coast which has since been filled up to give rise to the present continuity of land, has been recorded. The coastal border has a length of 22 km. with a breadth ranging from four to six hundred metres. Superficially the coast is flat and sandy.

From the above description it will be evident that Pondicherry region consists of four geographical zones. The coastal zone comprising newer and older dunes including saline areas of clayey texture. The second zone is made up of the two plateaux called the Pondicherry plateau and the Tiruvakkarai plateau composed of a geological formation called the 'Cuddalore sandstones'. The upper layers are made up of red transported ferralitic soil. The Valudavur plain lies between these two plateaux. Marshy depressions are also frequently encountered in the plains of Valudavur. The flat alluvial zone occupies the rest of the Pondicherry region.

Karaikal Region:

Forming part of the fertile Kaveri delta, the region is completely covered by the distributaries of Kaveri. Covered completely by a thick mantle of alluvium of variable thickness, the lie of the region is flat having a gentle slope towards the Bay of Bengal in the east. It is limited on the north by the Nandalar and on the south-east by the Vettar. The group of rocks known as Cuddalore formations is met with in the area contiguous to Karaikal region in Thanjavur District.

Mahe Region:

Mahe is a small area bounded on the south-west by the Arabian sea, on the north by the River Ponniyam (Moolakadavu) and on the other sides by a stretch of calcareous hills of medium height which are linked to the ghats by a series of wooded hillocks. The River Mahe which flows towards the west, divides the region into two parts.

Yanam Region:

The region is bounded on the east and south by River Godavari which discharges itself into the Bay of Bengal after flowing about 14 km. towards south-east. The town of Yanam is located at a spot where the River Coringa and the Godavari separate to divide the region in two parts, one on the east and the other on the west. The entire region is composed of a flat, monotonous terrain without any distinct topographical feature.