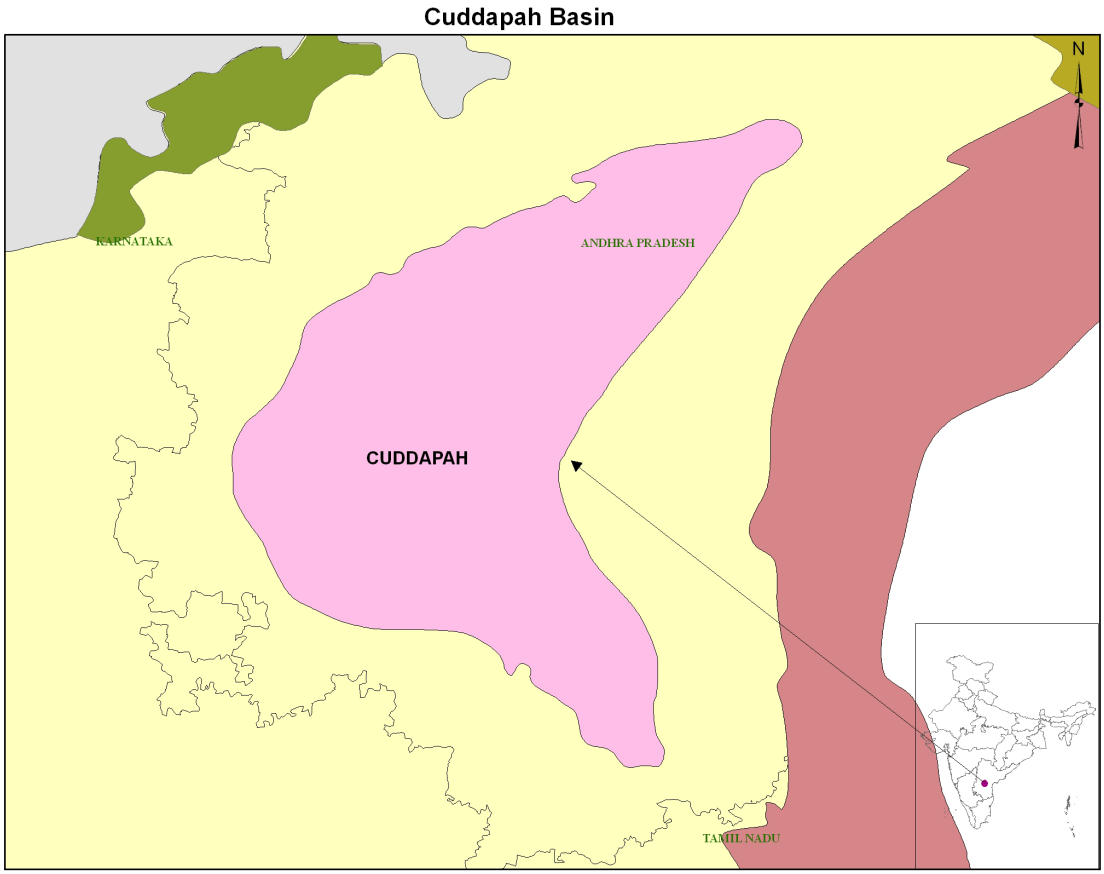
Basin Introduction :.



The Cuddapah basin is located between latitudes 13°30'N to 17°N and longitudes 78°E to 80°E. The crescent shaped, easterly concave and N-S trending Cuddapah basin (Fig.) covers an area of 44000 sq. km in the east central part of Dharwar craton. The basin extends for a length of about 450 km along the arcuate eastern margin with a mean width of 150 km, and is the second largest Purana basin of Penninsular India, after the great Vindhayan basin. The arcuate north, south and western boundary of the Cuddapah basin marks the profound uncomformity (called Eparchaean Unconformity in early literature) on basement granites enclosing the Eastern greenstone belts in Kadiri, Veligallu and Tsundupalle in the south, and Raichur, Gadwal and Peddavuru in the north. The arcuate eastern margin is marked by a prominent boundary thrust, which is parallel to the Nellore schist belt, Eastern Ghats mobile belt and the East Coast. A giant basic dyke swarm underlies the basin in the west from Chittoor in the south to Mahbubnagar in the north.

Cuddapah basin is characterized by quartzite-carbonate-shale cycles having an aggregate thickness that is estimated to vary between 6 and 12 km. The early sediments of the basin are interspersed with basic volcanics and sills. Felsic volcanics and tuffs are intercalated with sediments at many horizons. The basin is well known for its mineral potential in the form of limestones and dolomites, bedded and vein barites, chrysotile asbestos and steatite, besides occurrences of base metals, diamond, phosphorite, uranium and abundant building and ornamental stones.

The western half of the basin is undeformed and consists of four sub-basins, the Papaghni, Kurnool, Srisailam and Palnad. The Papaghni and Kurnool sub-basins are geographically interlinked, but were sites of deposition at different times, the Papaghni sub-basin containing lower Cuddapah sediments, and the Kurnool sub-basin containing the younger Kurnool sediments that overlie the Cuddapah sequence with a major unconformity. Srisailam sub-basin contains upper Cuddapah sediments and

Palnad sub-basin exposes only the younger Kurnool sequence. The eastern half of the Cuddapah basin is occupied by the Nalamallai fold belt consisting of upper Cuddapah sediments. Nallamalai fold belt is demarcated from the undeformed western sub-basins by the prominent fault lineament called the Rudravaram Line along which cleavage begins to develop in the Cuddapah sediments, which become intensely deformed towards the boundary thrust in the east.