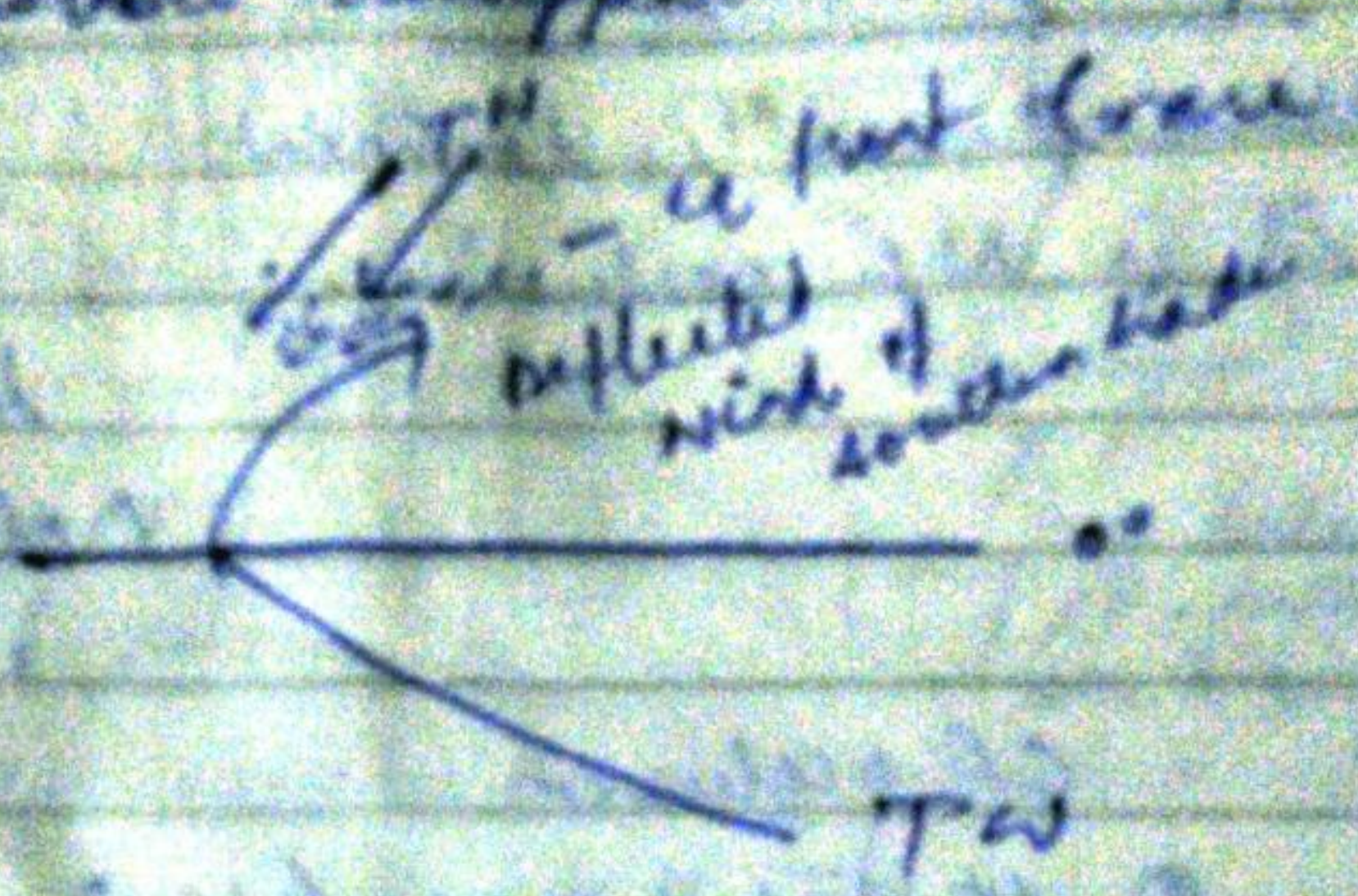


Tropical cyclone

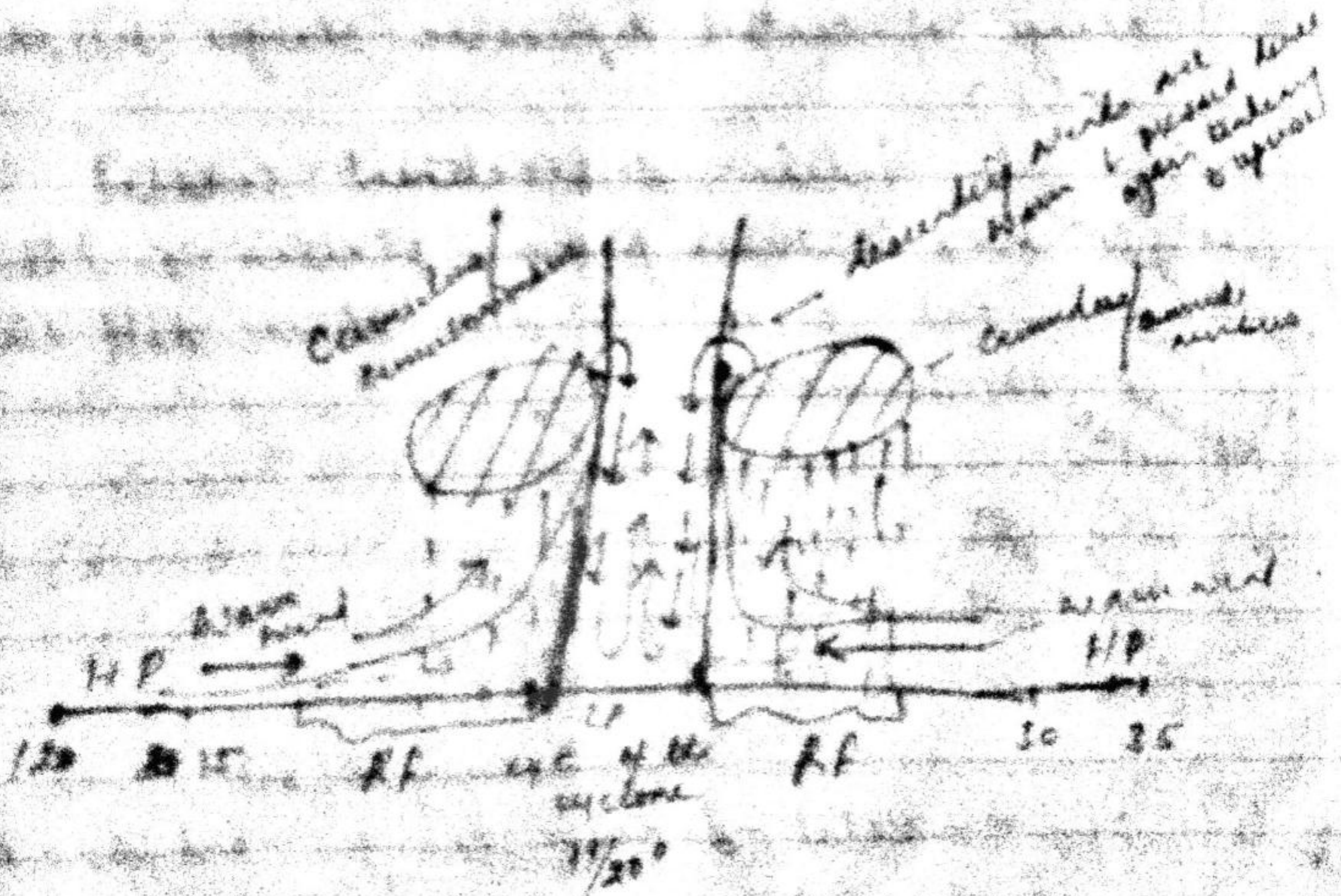
Another form of cyclone
 This cyclone occurs within tropical latitude
 This cyclone is converging around a
vortex or centre of LP. (some times
 they also develop front, which is known
 as equatorial front, but this front is
 highly unstable disappears within few hrs)



Vortex is also known as the eye
of the cyclone/centre of cyclone by is
 b/w 8° - 20° lat - cyclonic circulation
cannot be in eq. reg. since, 20
coriolis effect, so, b/w 8° - 8° lat
there is convergence (ITC) but
b/w 8° - 20° lat there has been
cyclonic circulation. (centre of cyclone
 is always b/w 8° - 20° in either of
 hemisphere, but both are dominant
 in NH, due to great surface moisture
 local diff in NH due to irregular
 distribution of ocean & continents
 So, this irregular dist. creates
 diff. of temp and pressure zones

and that diff becomes the basis of cyclonic circulation.

So far as tropical cyclone is concerned wind has winds coming from 2 opposite direction at a low which is exclusively due to thermal input. As tropical area is warmer up so blowing winds are also warmer and warmer winds by a tendency of vertical rise, in most cases before reaching to the eye of cyclone they are raised to the level of condensation & pptⁿ. Consequently there has been no rain in the eye of the cyclone. Tropical winds are warm so they become high velocity having tendency of vertical rise. The mechanism of tropical cyclone can be understood from the given sketch.



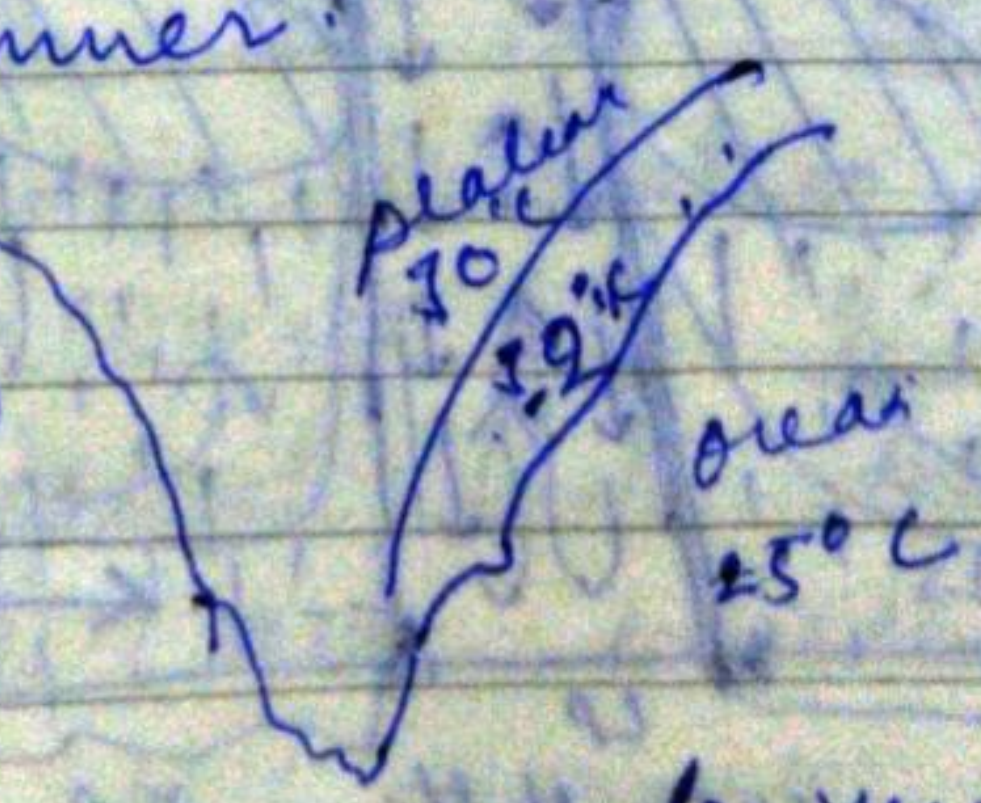
Tropical clouds are famous for their thick clouds.

After the HT temp begins to reduce, cool winds begin to blow and CP area disappears and relatively the pressure is increased.
Tropical cyclones are famous for three imp characteristics.

- ① It is a regional cyclone (no continuity) having reg names (principally due to irregularity of dist of land & water bodies in tropical reg of N.H.)
- ② Eye of the cyclone is migratory it has changing behaviour. It is not fixed at place / no stability. (B. famous reg Bay of Bengal, coastal areas of N. Indian ocean are famous for the unpredictability of central depression) shortest period of weather forecast is 6 hrs ✓ (pure in India), Indian cyclone (the change of central depression changes within 6 hrs)

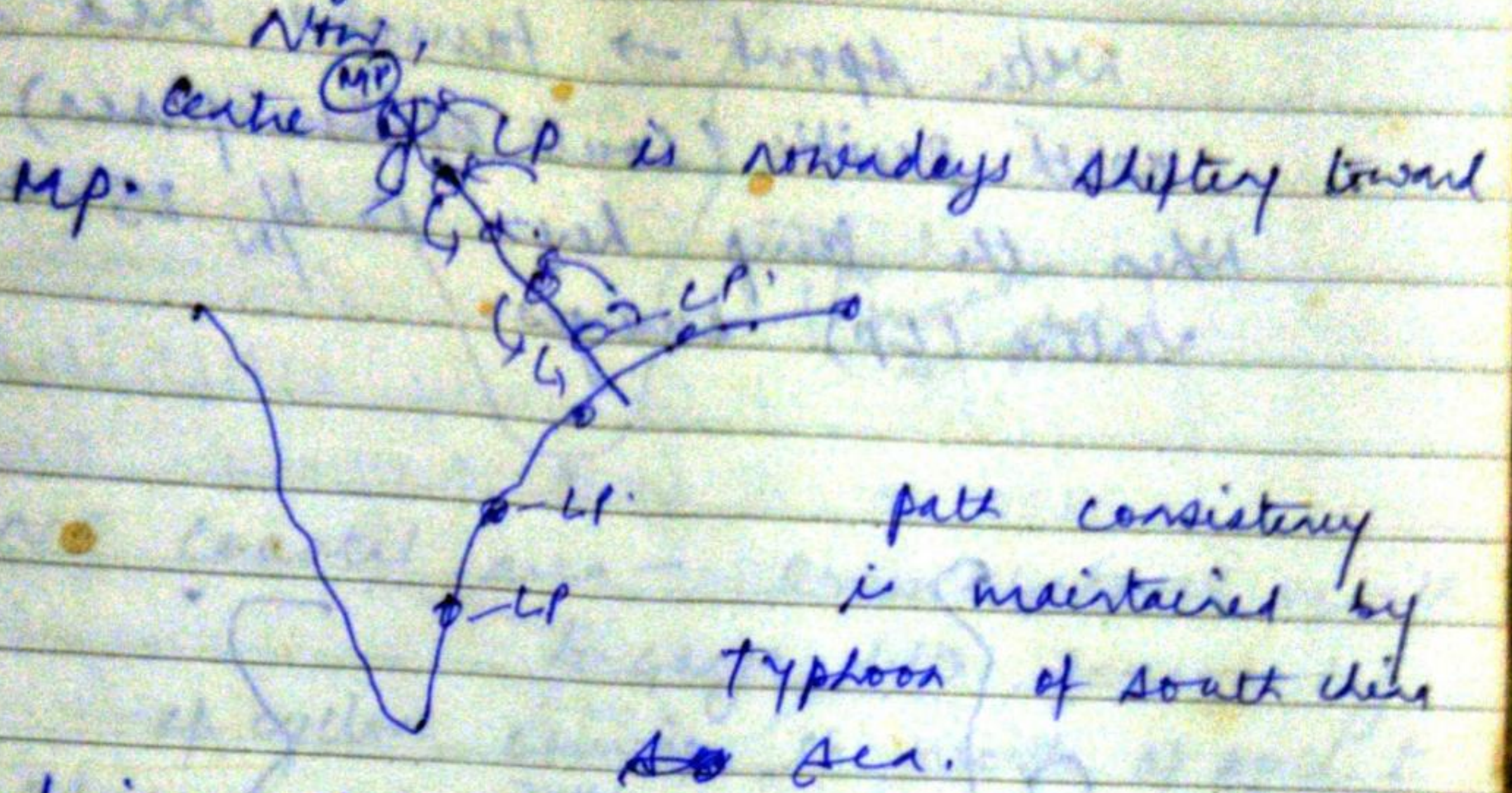
In Indian subcontinent coastal area is wide plain, plateau is there and ocean it dev three diff temp

Reasons of quick shiftment of central depression is E. Coastal area of India making it difficult to forecast



- In very short time temp of coastal area changes and accordingly isobar lines are changed and that change being the shift of depression
- ① of coastal area changes and accordingly isobar lines are changed and that change being the shift of depression
 - ② Plateau has become naked so, quick temp variation

warms the lower atmosphere, so ppt has become vulnerable to LP area and depression of other energies.



Indian cyclones (Toofan is more unpredictable) Hurricane is similar to Indian cyclone (more violent winds & more destruction, but it is not as much unpredictable)

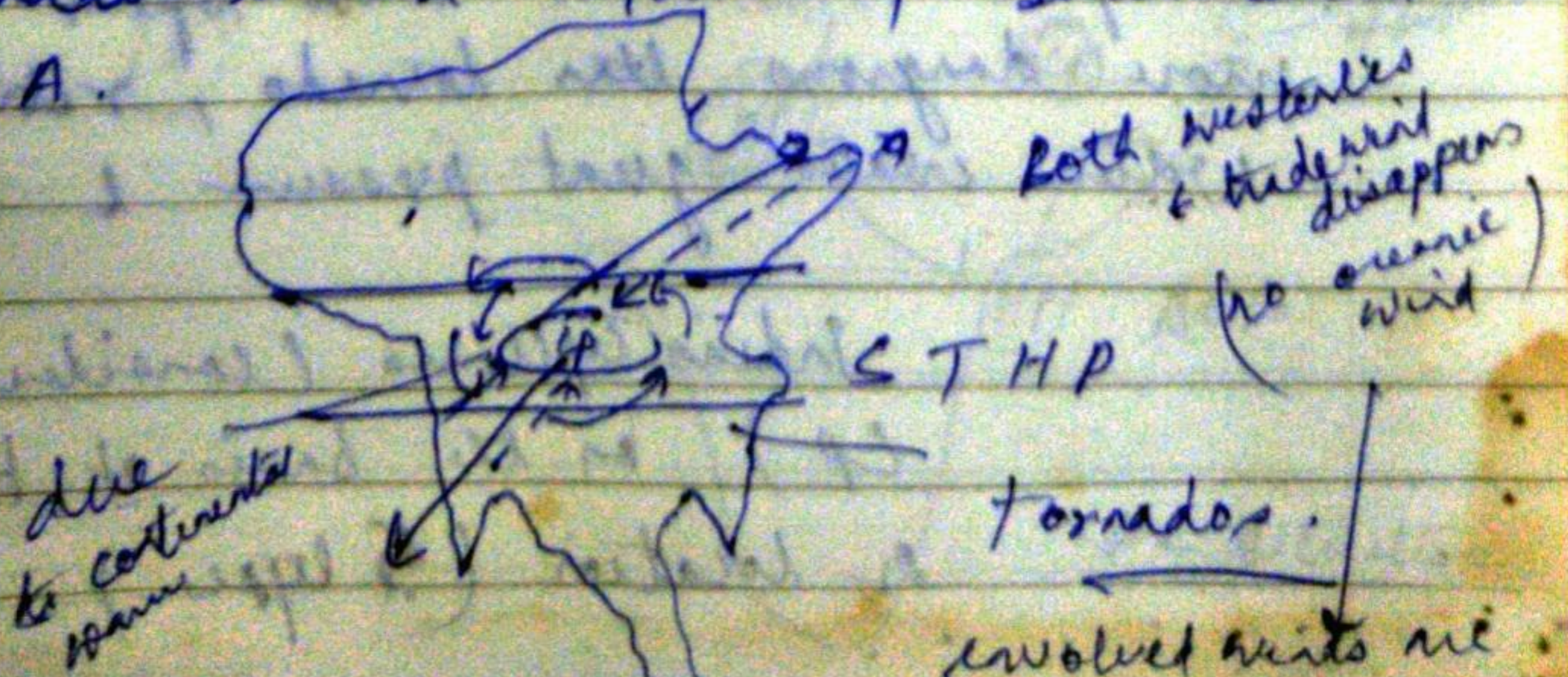
2 other types of cyclones.

- ① Tornado & ② waterspout.

is a exclusively a continental cyclone (only continental winds are involved, never brings rain) - violent dry winds.

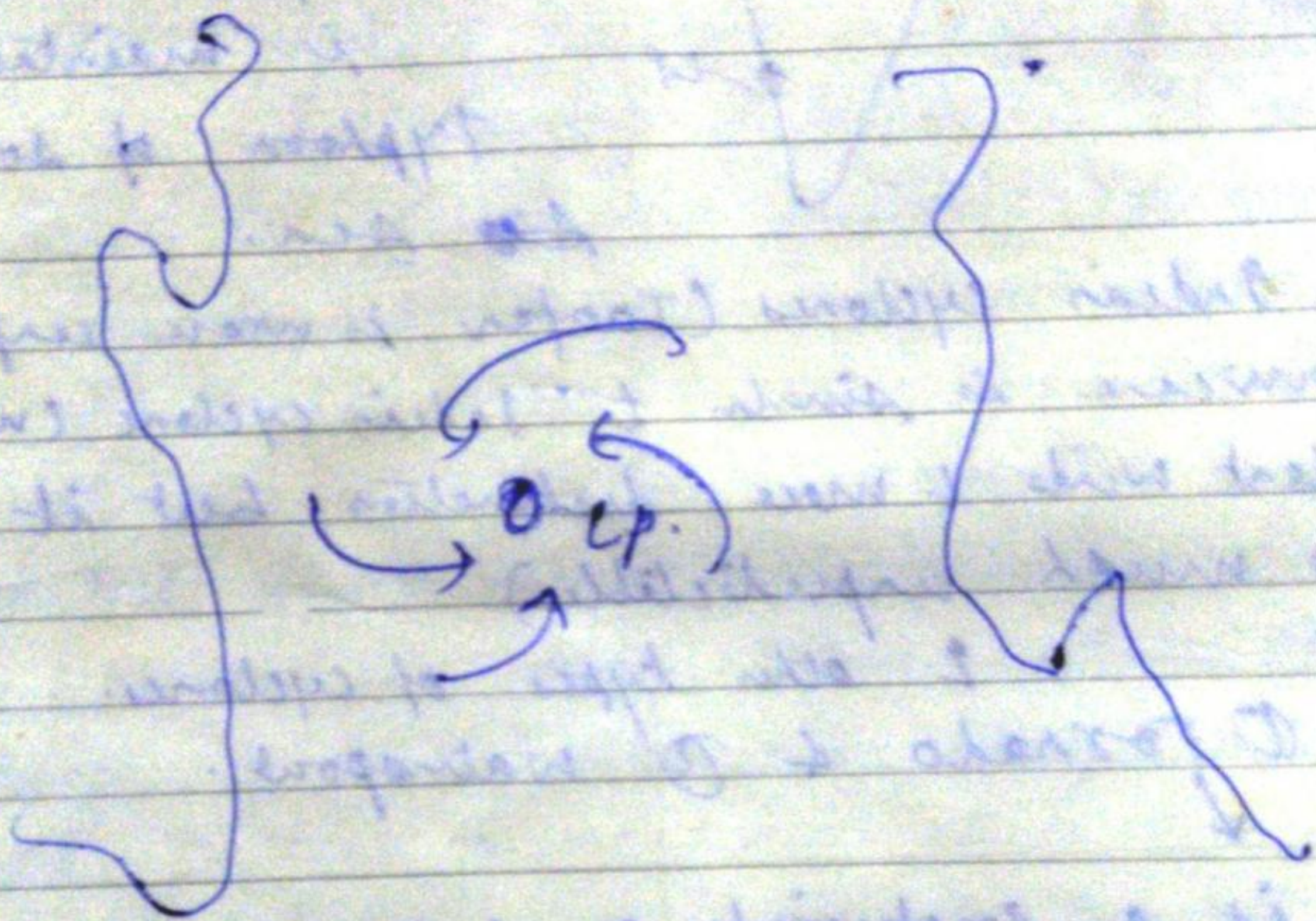
Water spout - are exclusively the oceanic. (only brings heavy RF no destruction)

Tornado is a cyclone of South Central USA.



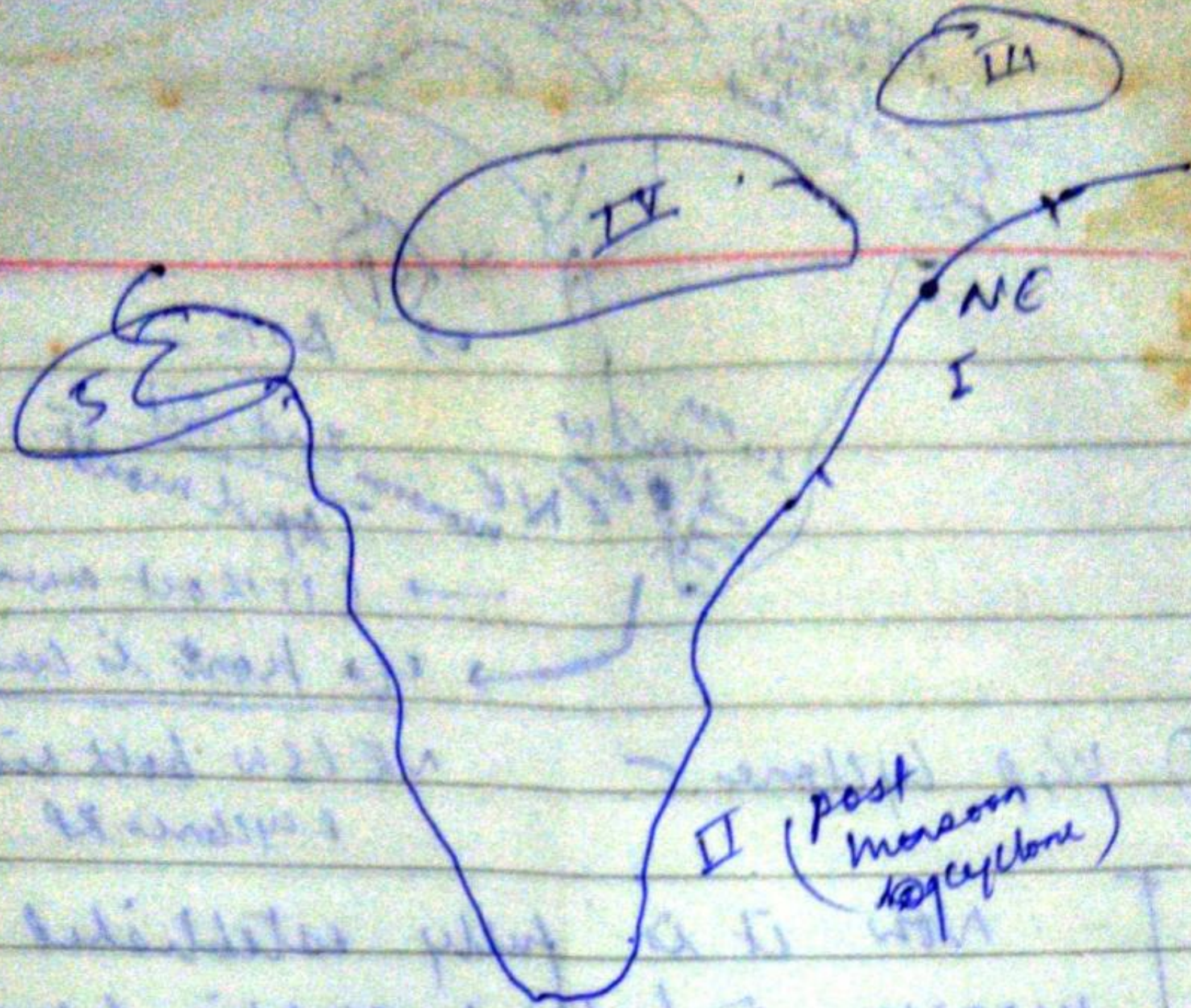
expanding characteristics so, movement
wind has vertical trend of rise

Water Spout → famous area is
north Pacific (south of Bering sea)
when the temp here is b/w $25-29^{\circ}\text{C}$
vortex (LP) emerges



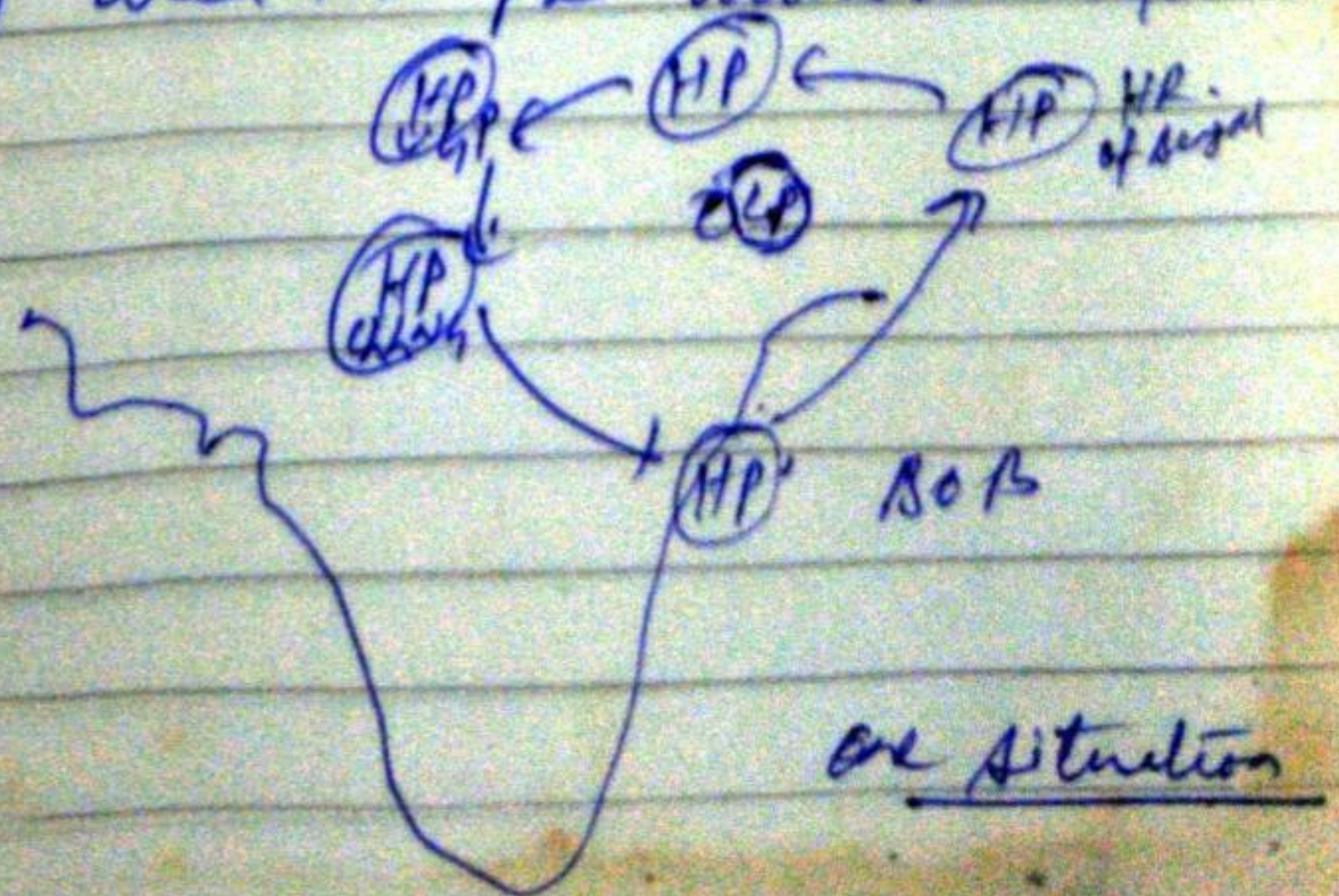
Water spout is a zone where
fishes fly (small fishes) along the volume
of water is vertically lifted.
water rise (volumes of water) is even
upto 40-45 m. water spout is even
more dangerous than tornado, retreating
water creates great pressure & sucking.

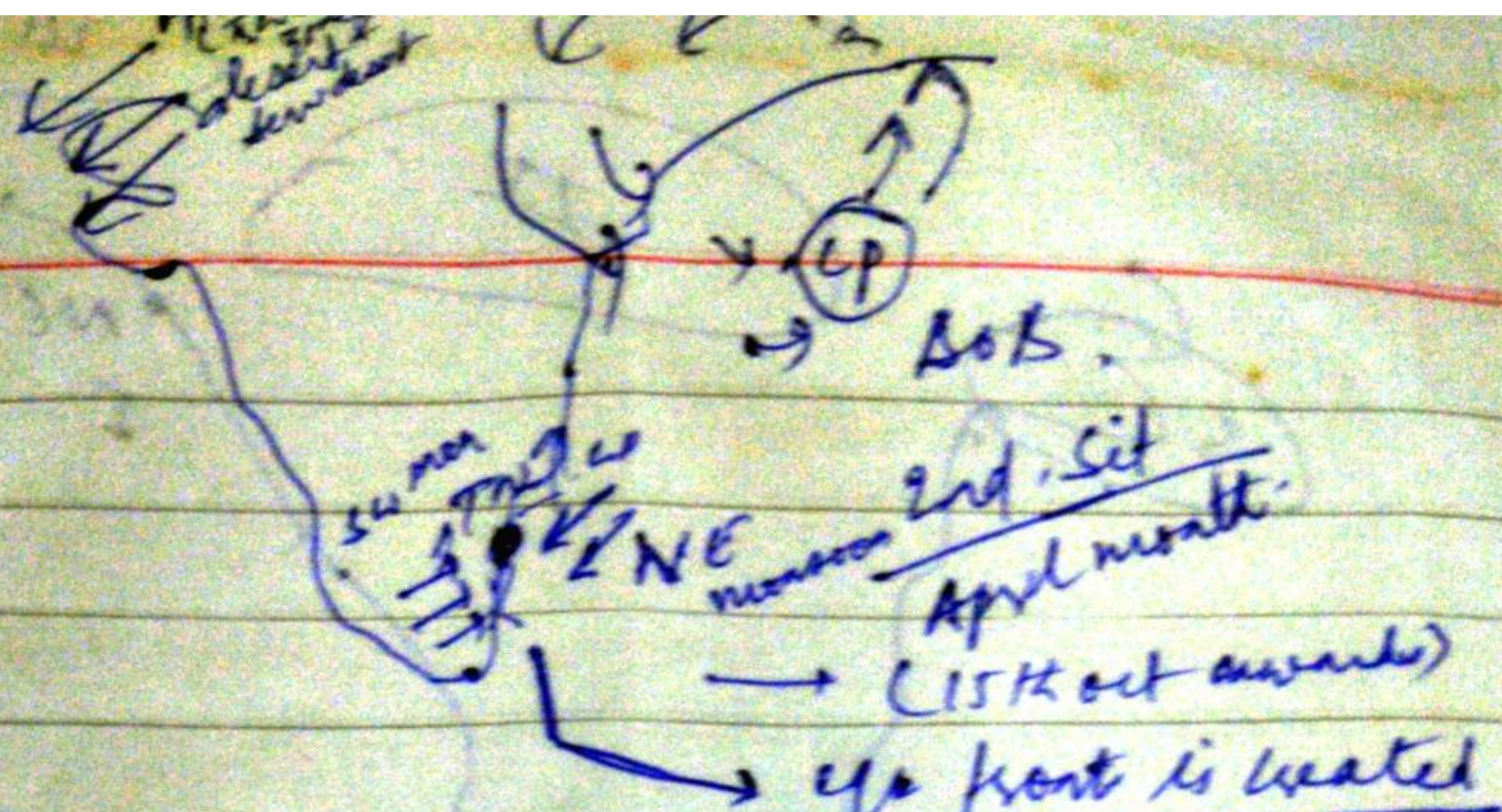
Indian cyclones (considering vastness
LP) on the basis of HT & date
or location (5 types)



- ① NE Coastal area - from Godavari mouth to Ganga delta, famous for cyclone coming in month of April to 1st week of ~~Apr~~ ^{June} (pre monsoon)
- ② Godavari to Ranesthane - cyclone coming after the monsoon
- ③ Interior of Ganga delta - March to April may be near to Malda, Siliguri, even Bangladesh, very helpful to ticks & mangoes for crops in India (they being small & RP)
- ④ Monsoonal cyclonic centre - Monsoon has also cyclonic mechanism (UGP) - Monsoon period cyclone
- ⑤ Gujrat Coastal area → pre monsoon cyclone

④

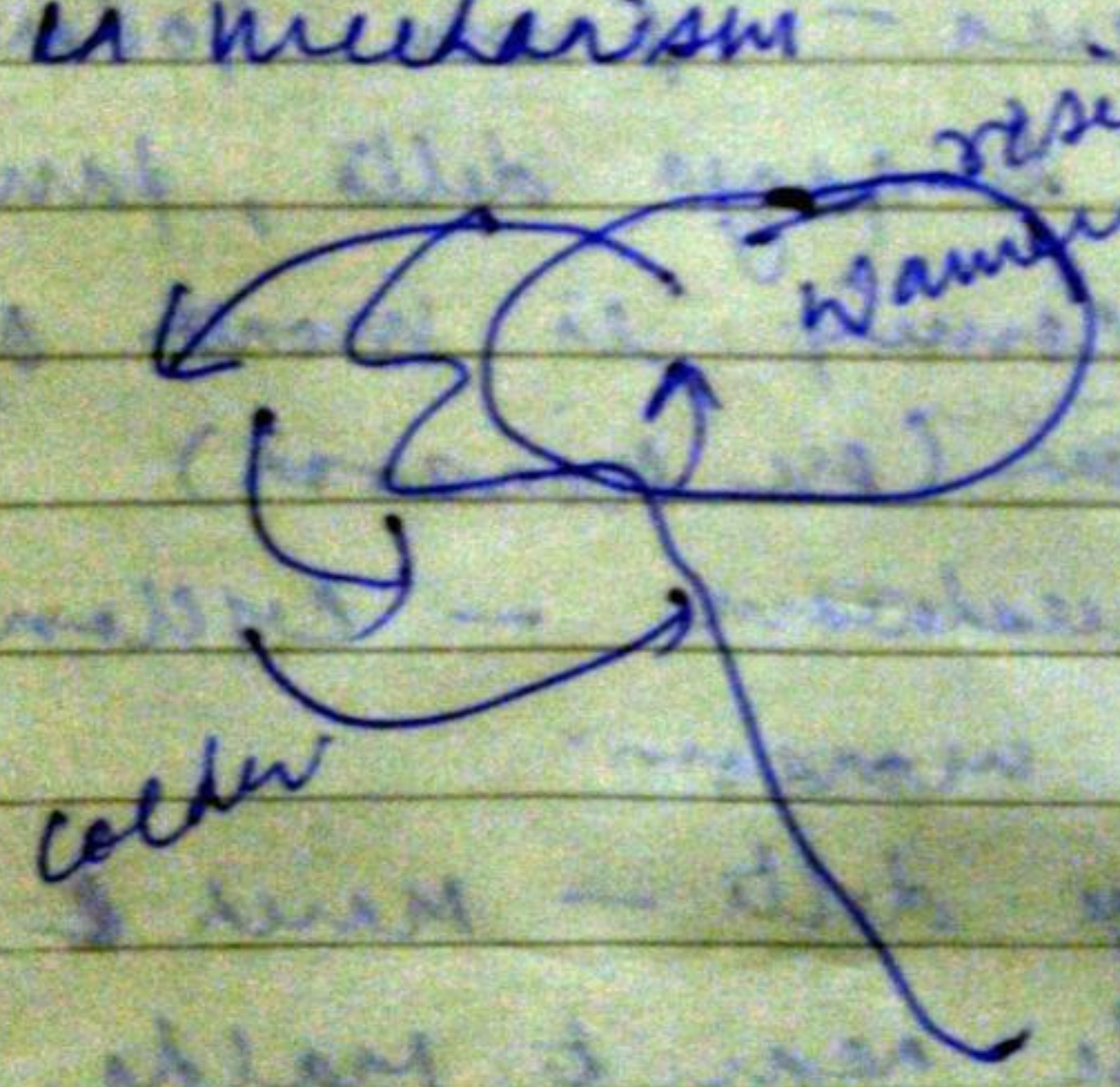




② VLP cyclone -

NE & SW both sides vertically cyclonic RP

Now it is fully established that monsoon is both orographic & cyclonic in mechanism



Not regular since, it is basically a seq of offshore (trade winds) only when temp becomes optimum or (req for cyclone) cyclone occurs

Whenever trade wind discontinued, cyclone is generated. (temp has to be high to alter the set)