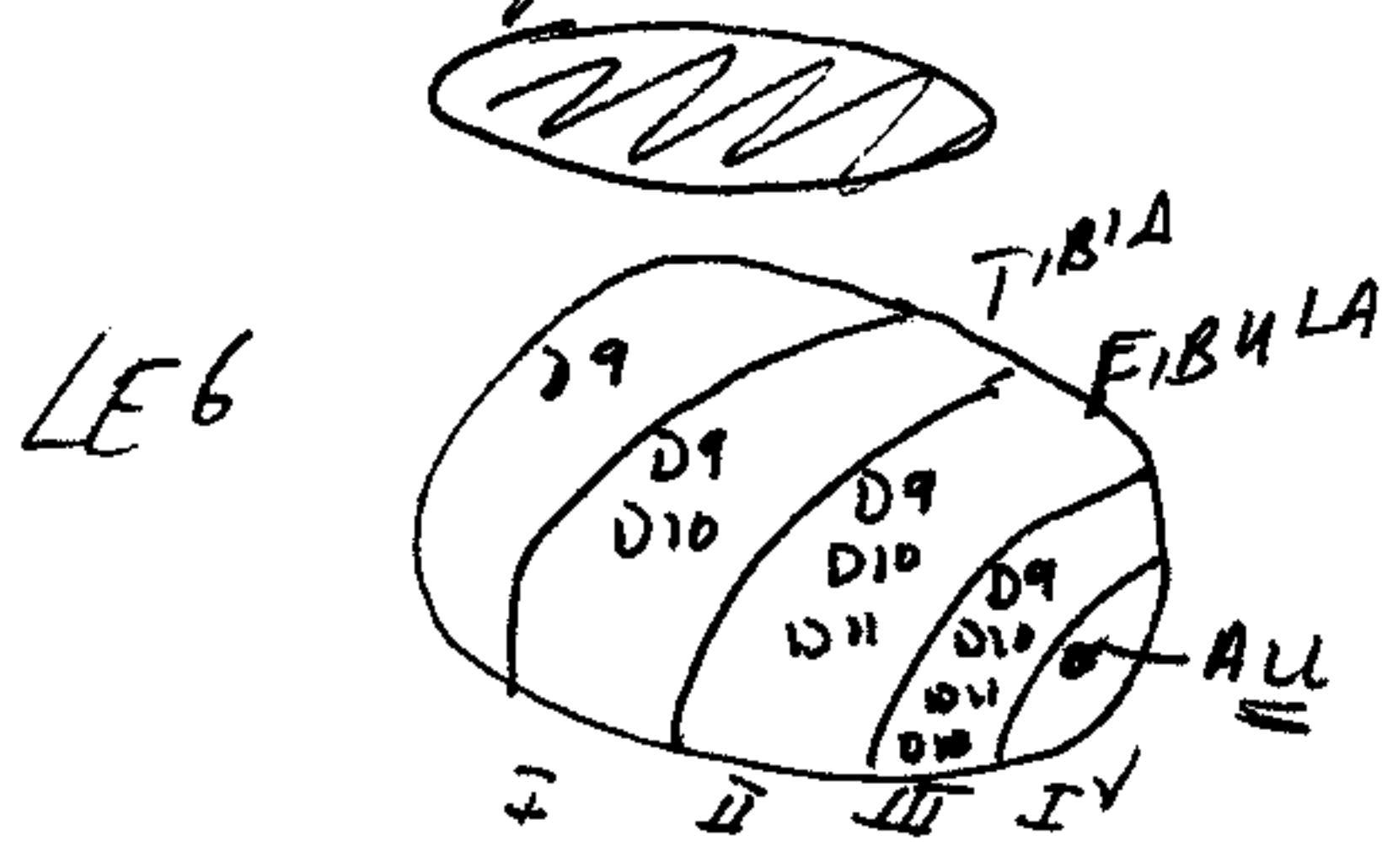# Cliff Tabin - Control of Dvlpmt

HoxA → HoxD = 4 clusters of vertebrate Hox genes

Anterior
vs
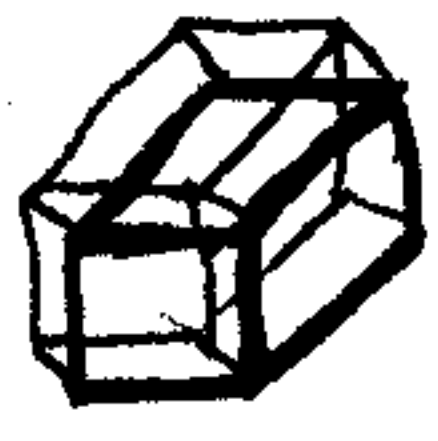**Posterior**

HoxD in limb bud
- domains of expression <u>switch</u> during development
- D9-D12 expression studied

LEG

TIBIA
FIBULA

D9
D9
D10
D9
D10
D11
D9
D10
D11
D9
D10
D11
D12

ALL

I   II   III   IV

- development is correlated w/ these patches
  (bones "fit" into one region)

so made transgenic limbs w/ retroviral fusions
- so if add <u>D11</u> throughout out then
  region I should look like region II
  add this is what you get.

- can do same w/ chickens

HoxA - codes for proximal/distal axis

Dorsal-ventral axis
- may be coded by ~~segment polarity~~ genes
  engrailed-
  wingless

Why at most five digits?

① well, seems like an extra digit would be useful
  -e.g. Panda
  but always w/ wrist bones

② w/ only 5 hox genes can only make 5
  types of digits

  so would need new ~~Hox~~ gene