

AMBIENTES DE DEPÓSITO GLACIAR

Dras. Margarita Caballero
y Cecilia I. Caballero M.
Instituto de Geofísica, UNAM



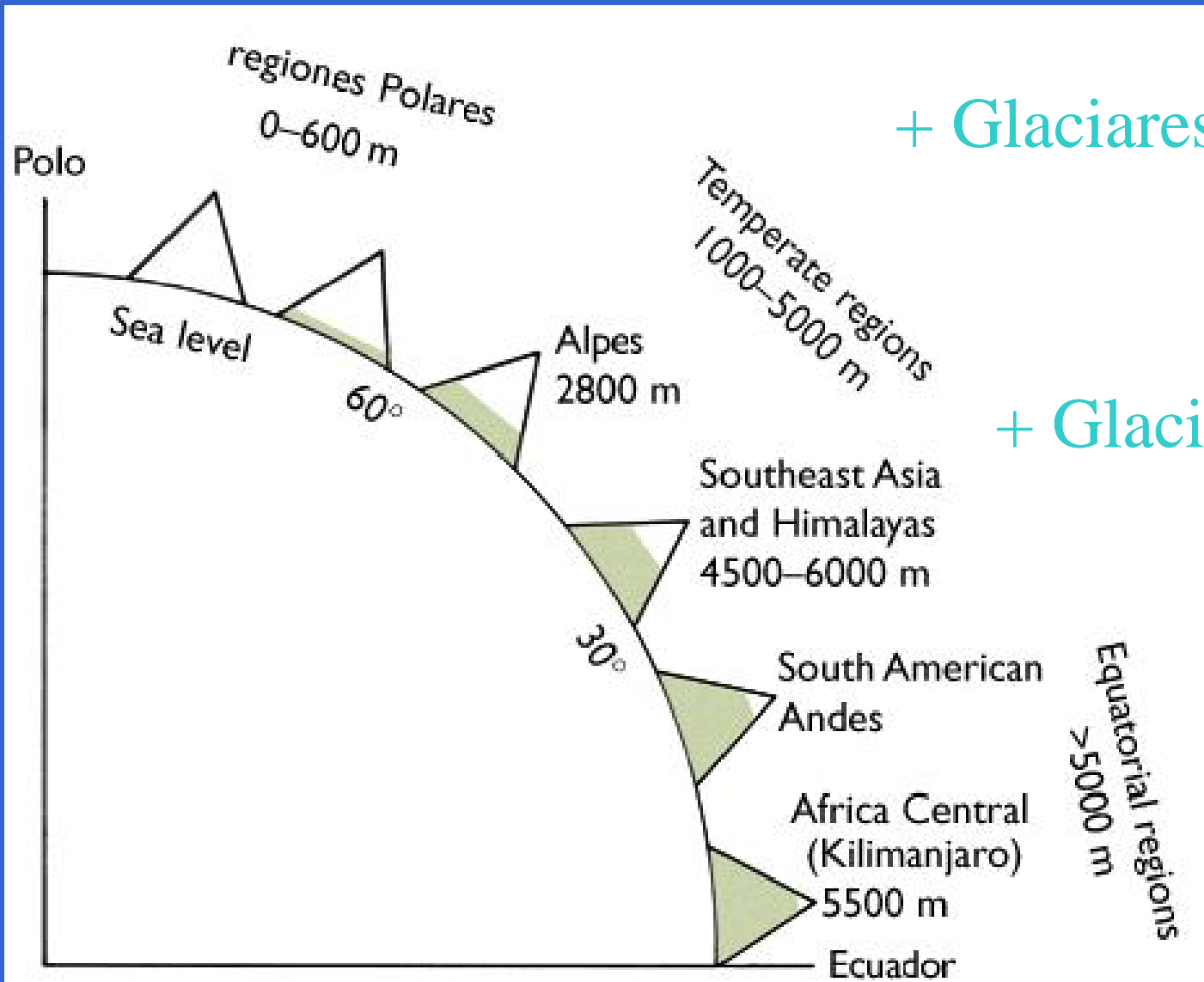
*Para clases de Ciencias de la Tierra,
Fac. Ciencias, UNAM*



Criósfera



Equilibrio: línea de la nieve



+ Glaciares de casquete

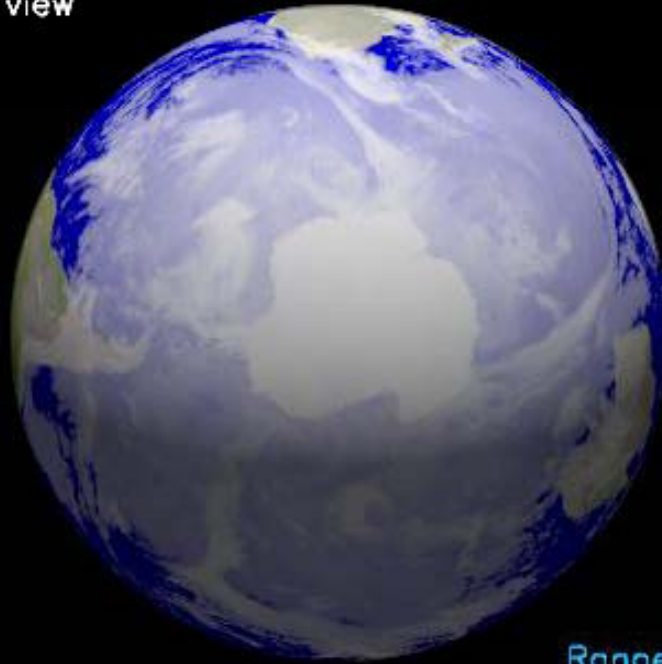
+ Glaciares de montaña

Altura de línea de las nieves con respecto a la latitud

Línea de las nieves = línea arriba de la cual no hay deshielo en el verano

Glaciares: Casquete Antártico

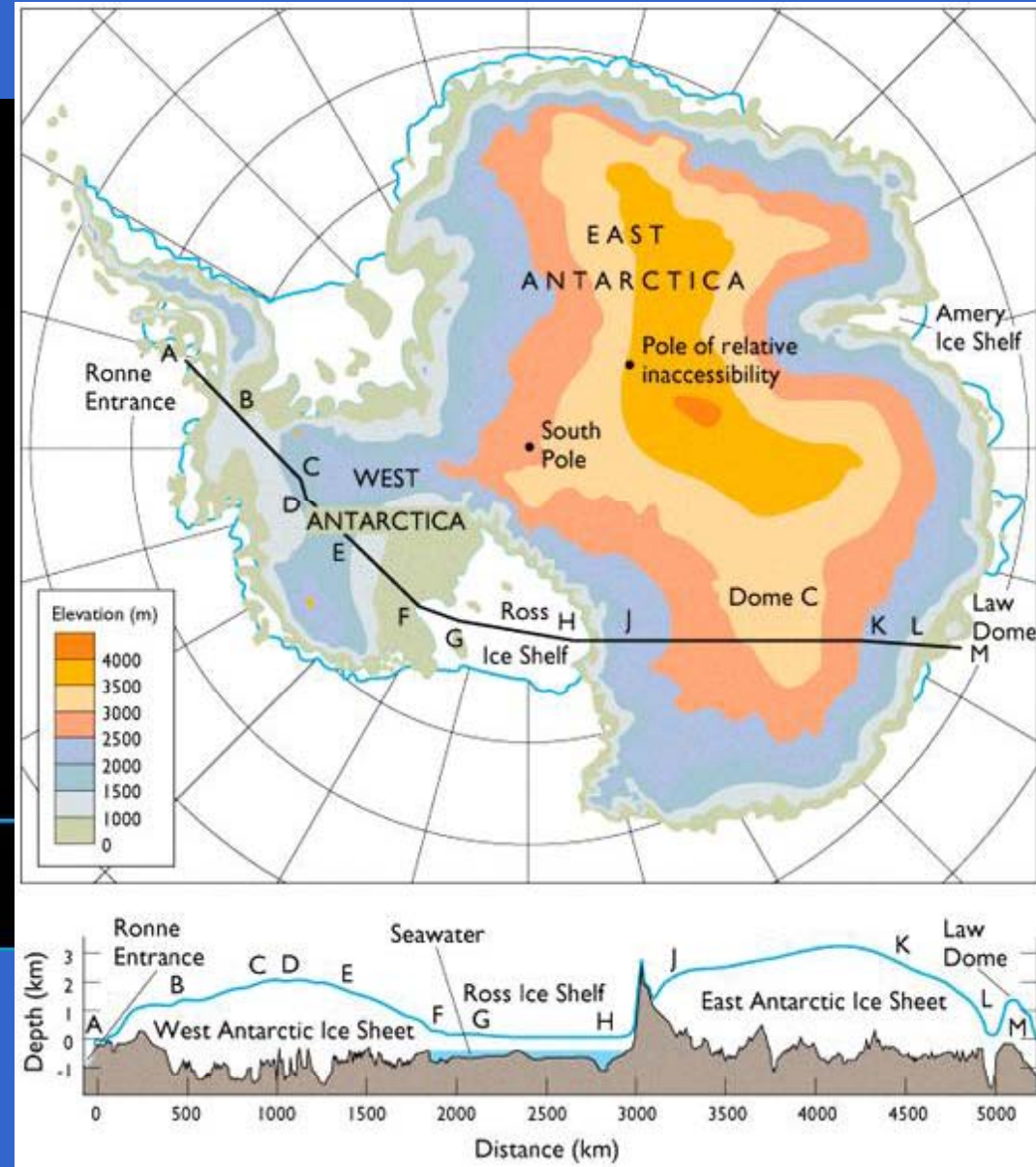
Looking up on The Earth
18 Dec 2004 10:20 GMT
4.58 deg field of view



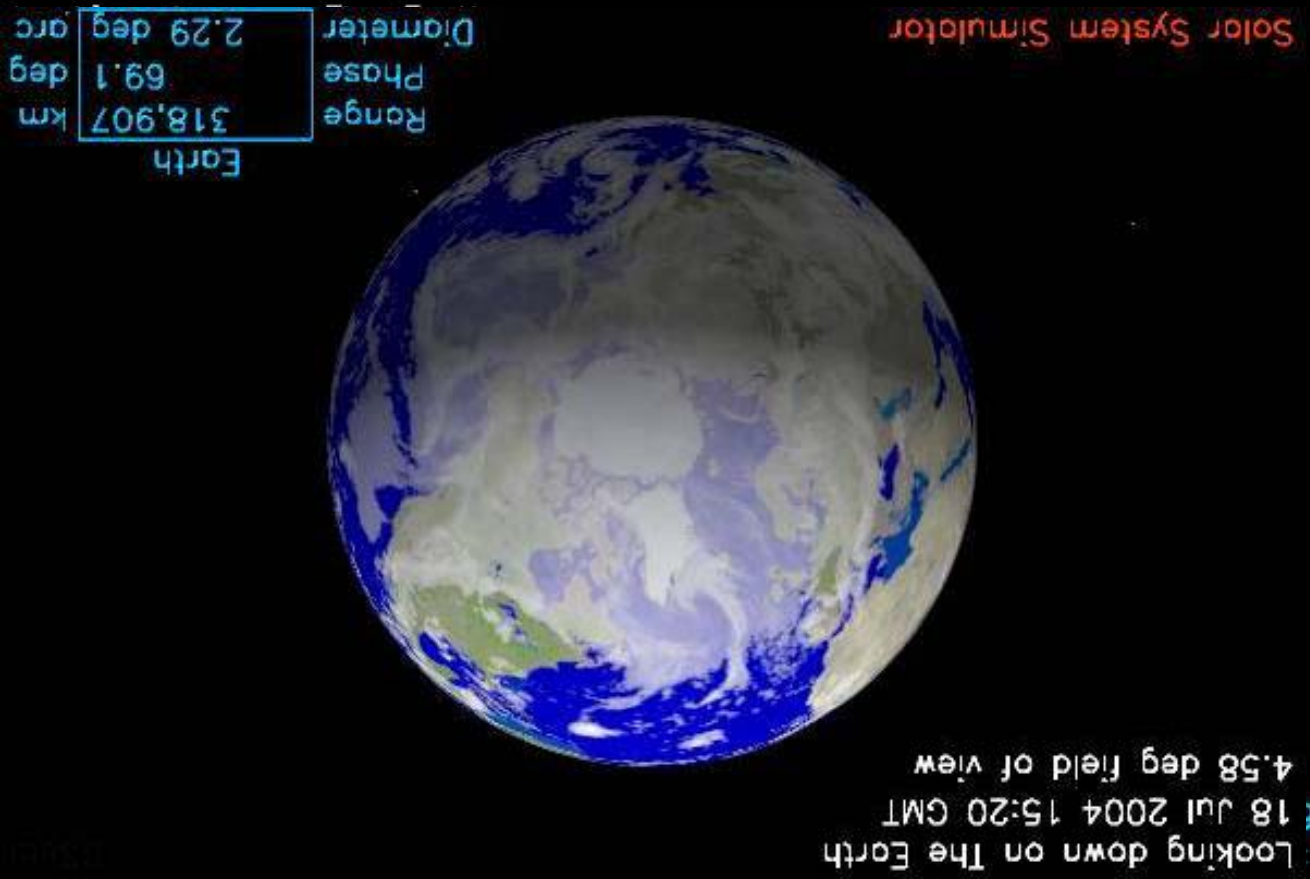
Solar System Simulator

Range
Phase
Diameter

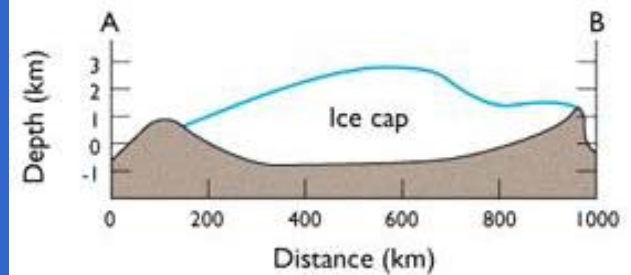
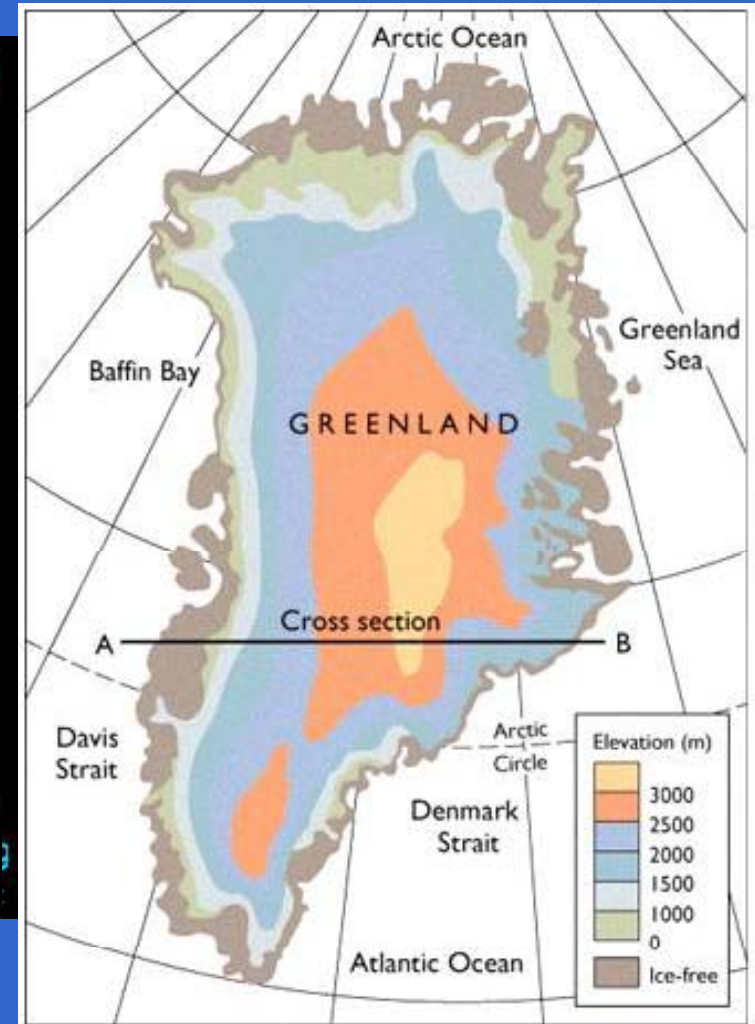
Antártico: 4,000 m
(12 millones km²)



Glaciares: Casquete Artico



Ártico: 3,200 m
(1.72 millones km²)



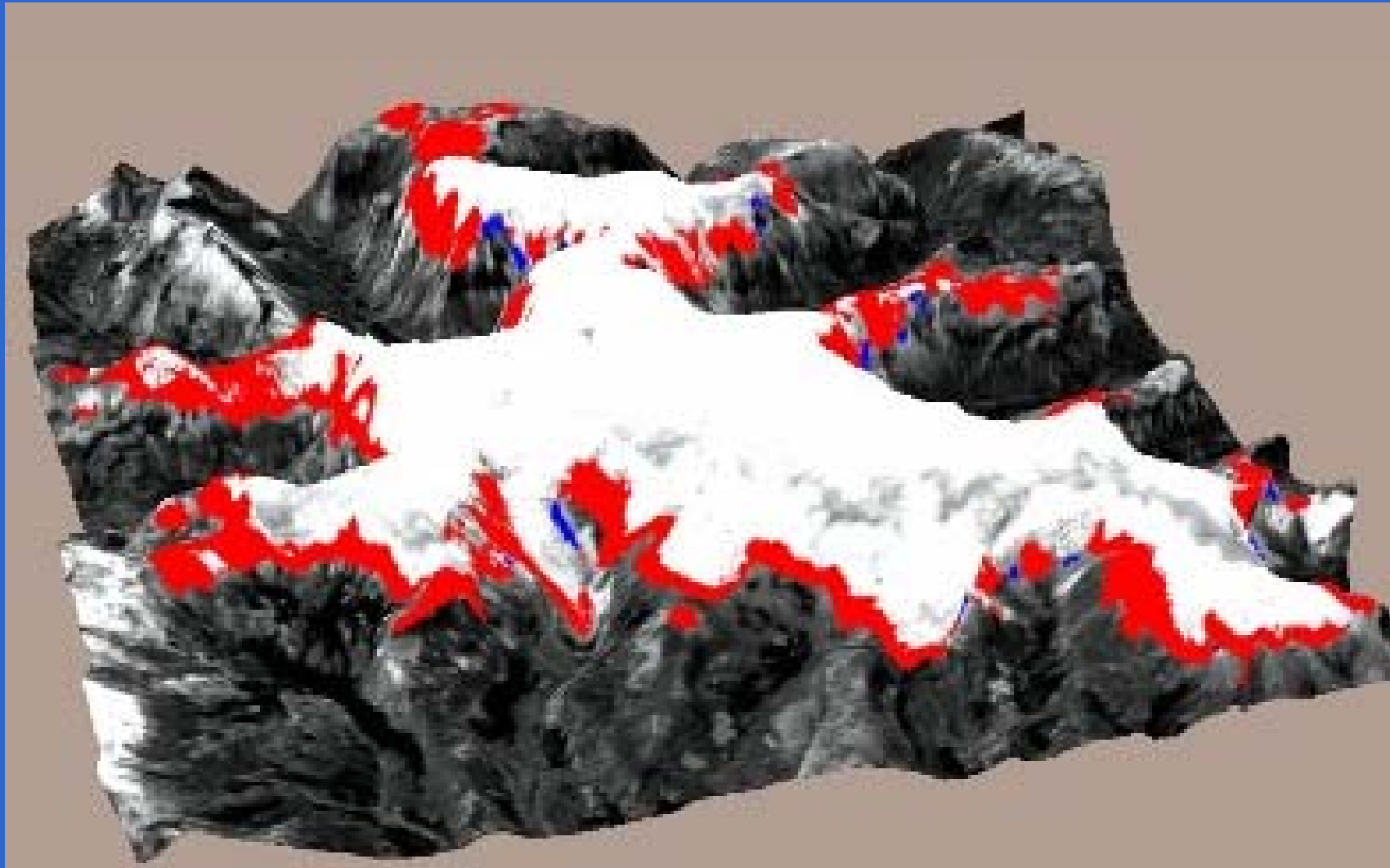
Glaciares: Casquetes hace 18,000 años

Pleistocene 18,000 years ago



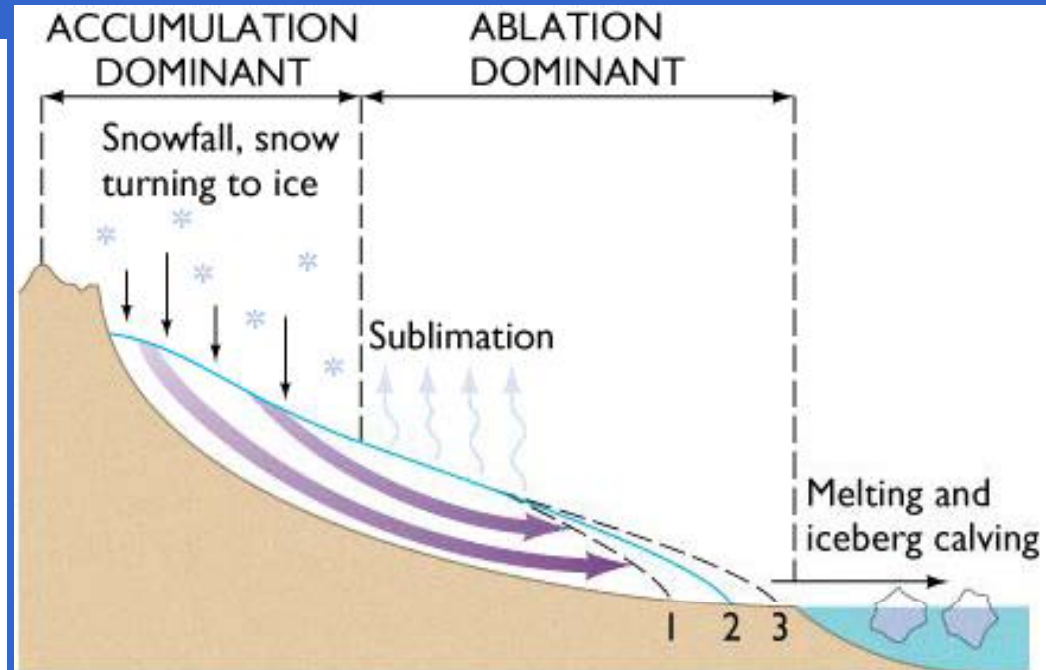
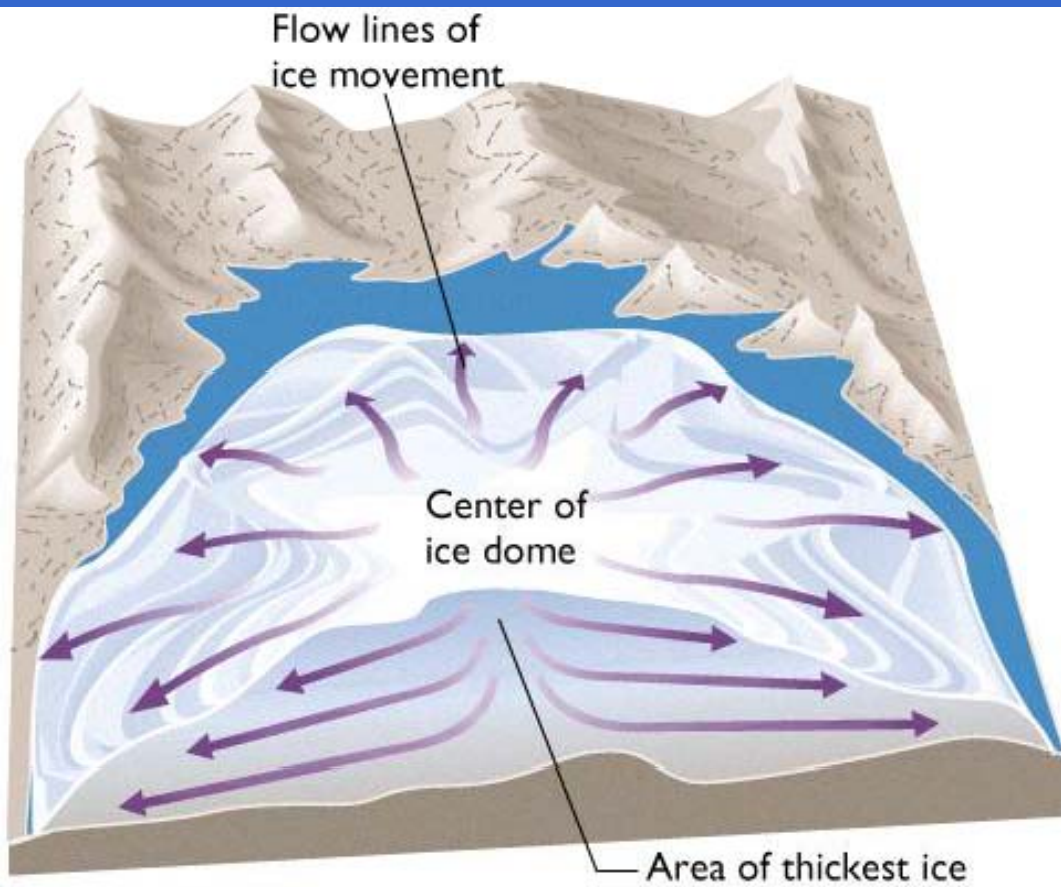
Glaciares: Alpinos





Glaciares: Quelccaya, Perú

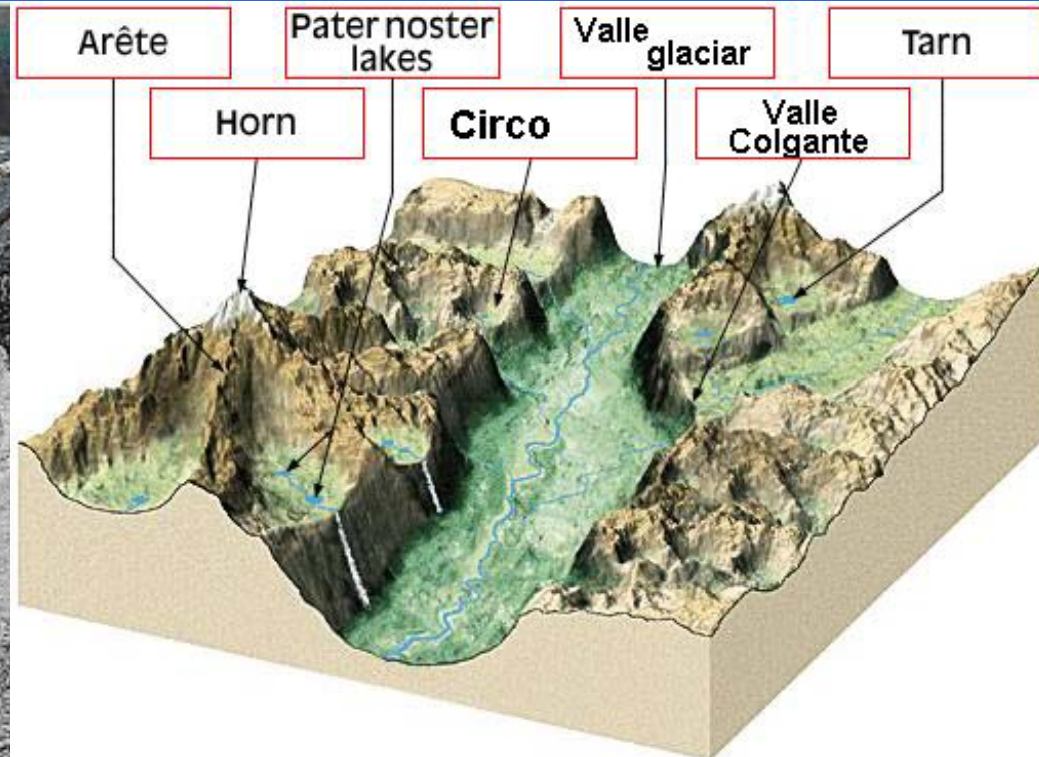
Glacières



GLACIAL BUDGET

- 1 Accumulation < ablation
- 2 Accumulation = ablation
- 3 Accumulation > ablation

Glaciares: formas erosivas

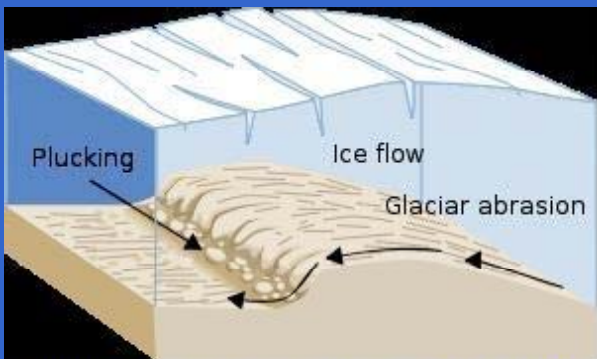
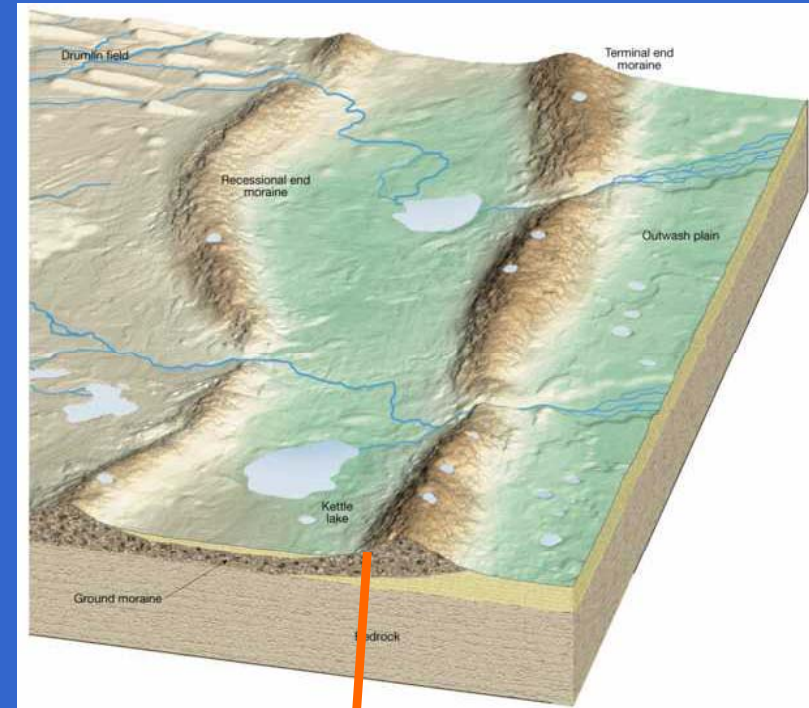


Glaciares: depósito



Glaciares: depósito

Morrenas: Terminales, laterales, recesivas



http://www.geocaching.com/geocache/GC31WVF_nellie-lake-erratics?guid=a09f5cbf-0a26-4678-8e47-1f11431d1833

Tillitas:
Mal seleccionado
Poco redondeados
No estratificado
No fósiles



Poorly sorted till deposited by a glacier



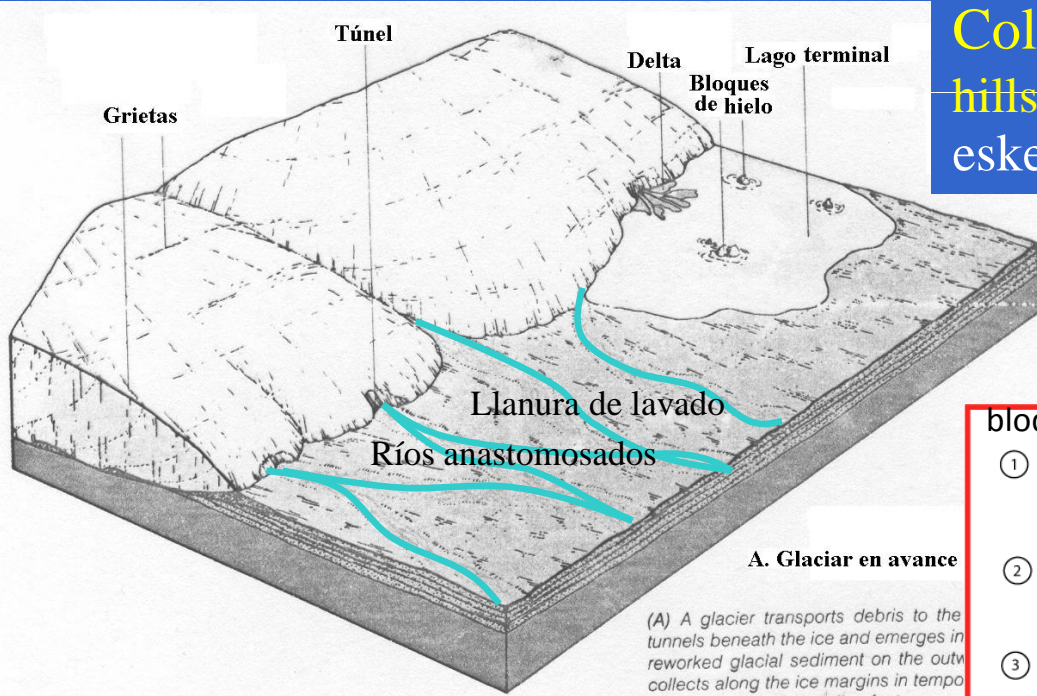
Gary Nichols
Sedimentology
& Stratigraphy



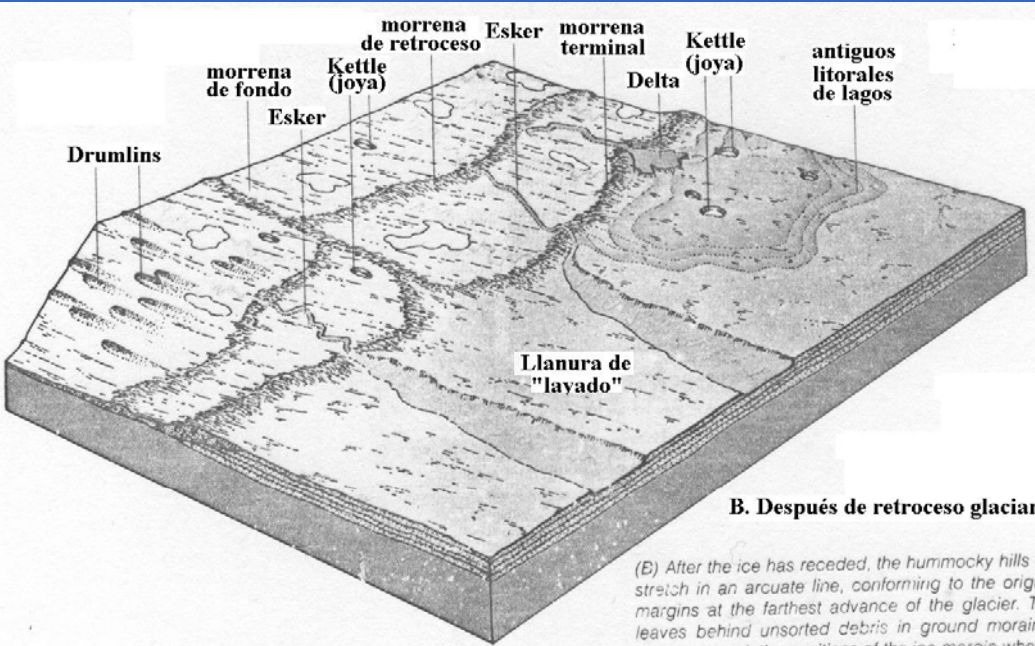
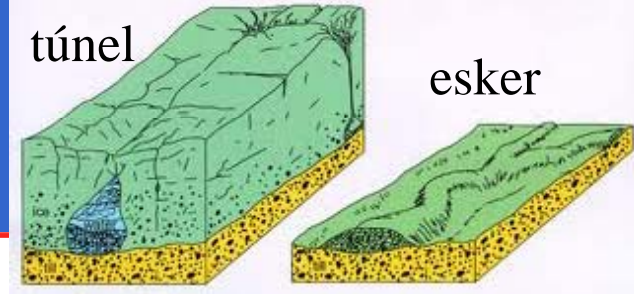
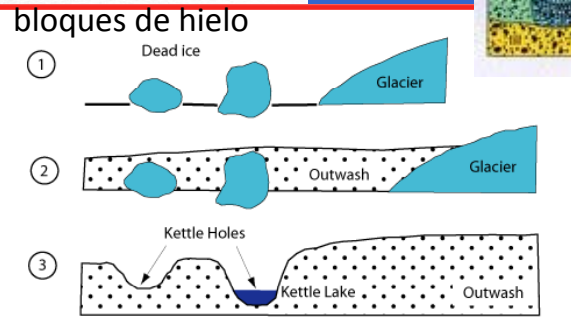
WILEY-
BLACKWELL

Glaciares: deposito

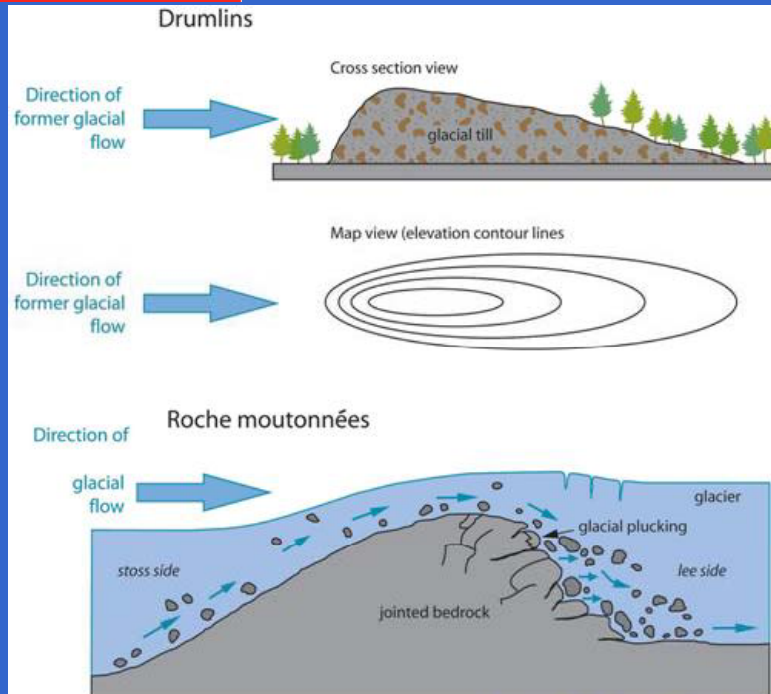
Colinas alargadas y montículos (hummocky hills). Depósitos de morrena terminal (tills), eskers; drumlins, kames



(A) A glacier transports debris to the tunnels beneath the ice and emerges in reworked glacial sediment on the outwash collects along the ice margins in tempo and other typical shoreline features.

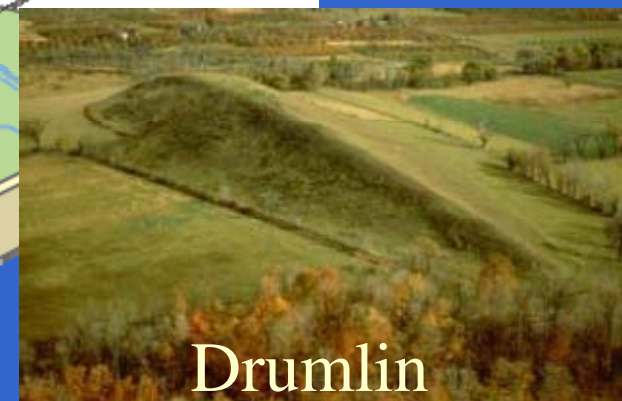
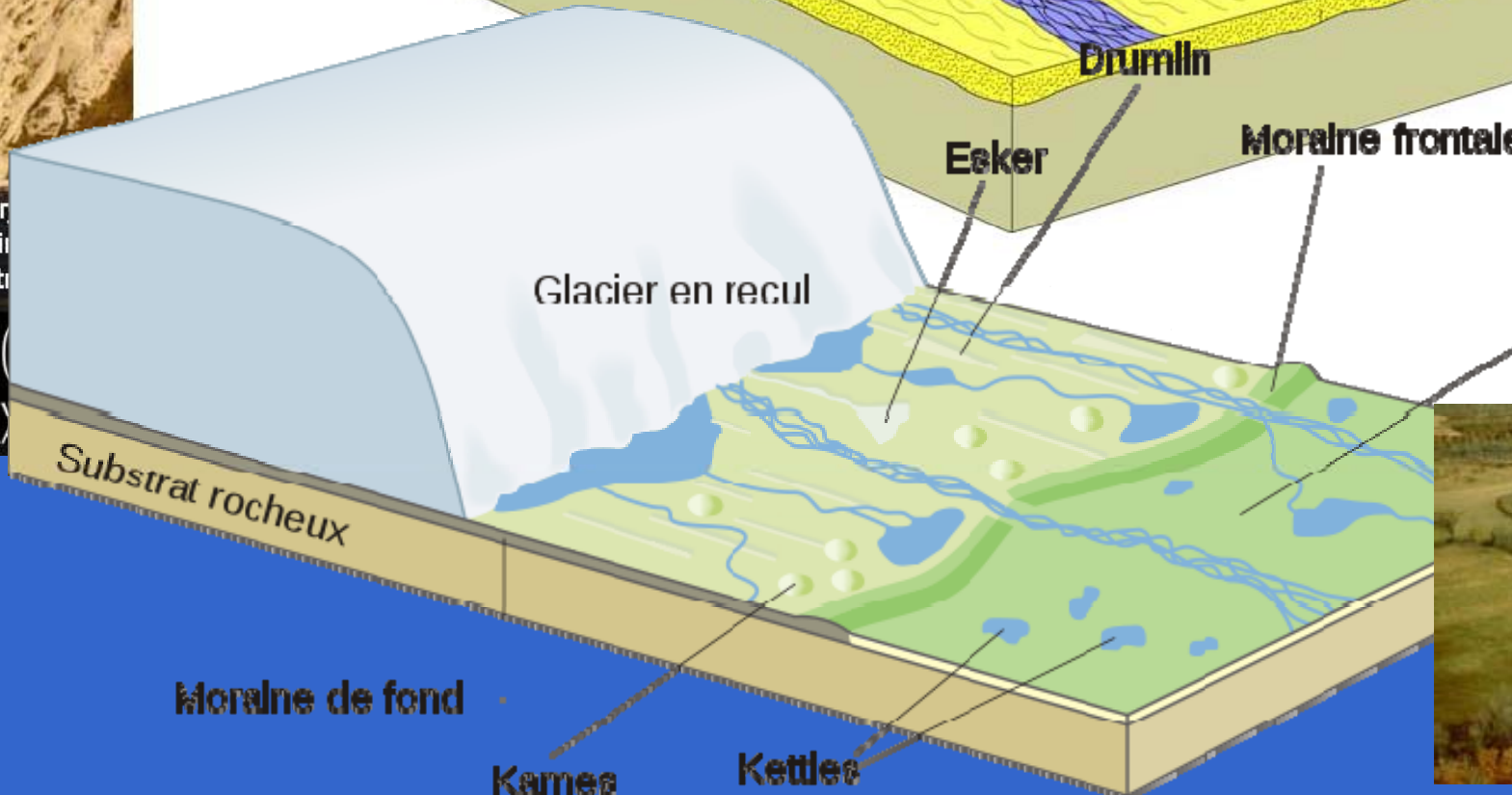
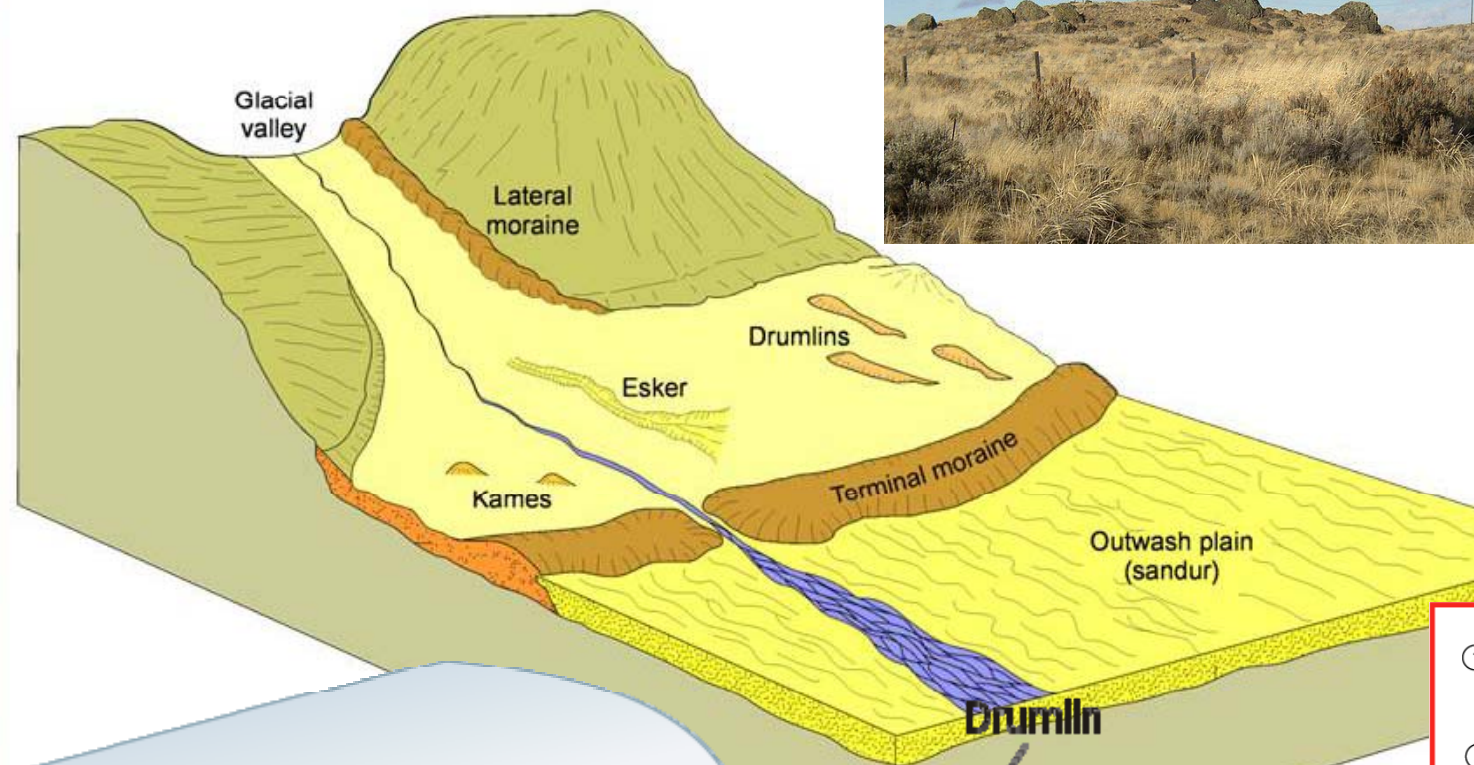
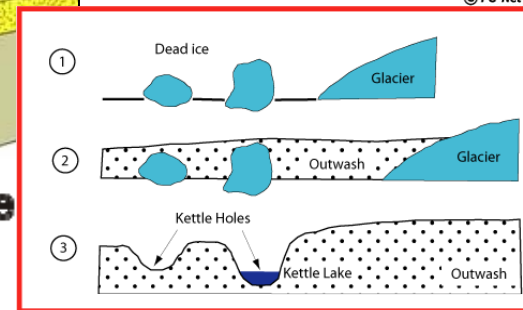
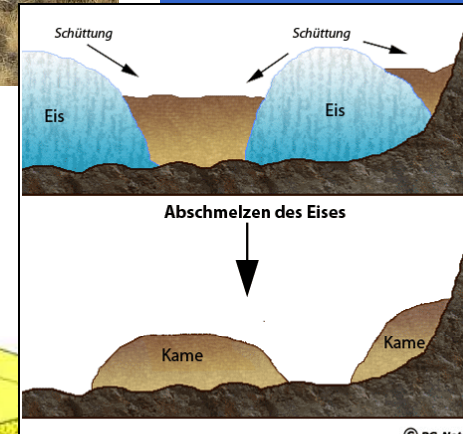


(B) After the ice has receded, the hummocky hills of a terminal moraine stretch in an arcuate line, conforming to the original shape of the glacier. The retreating glacier leaves behind unsorted debris in ground moraines, and recessional moraines mark the positions of the ice margin where the glacier paused during its retreat. Hills of ground moraine can be reshaped by a sub-



Source: Trista L. Thornberry-Ehrlich, Colorado State University, en: http://www2.nature.nps.gov/geology/education/education_graphics.cfm

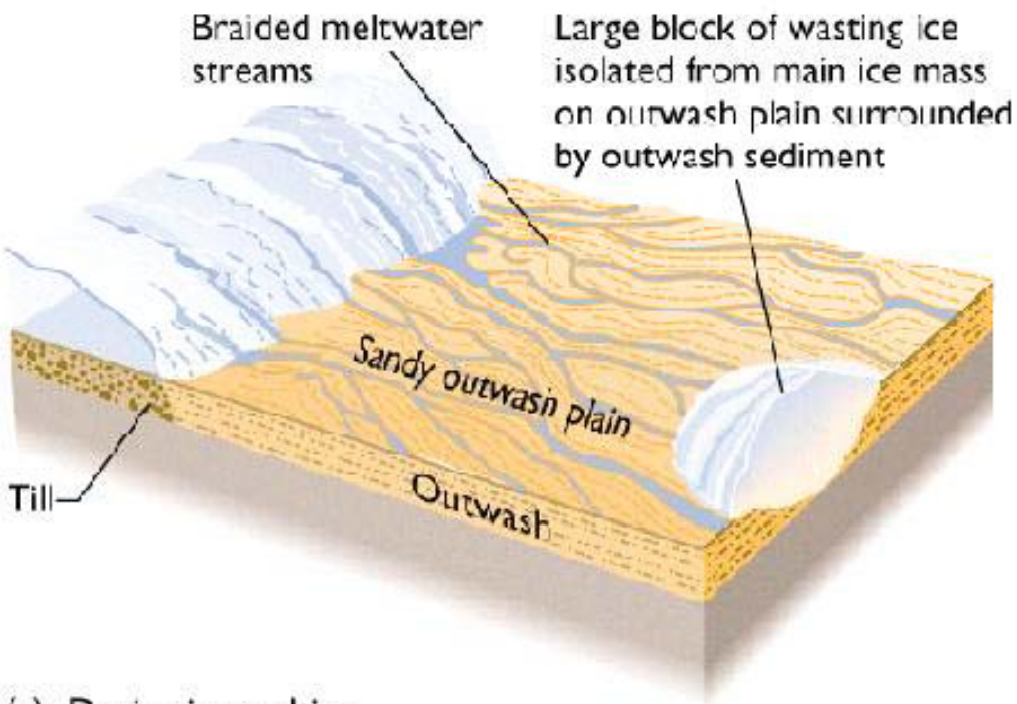
Kame



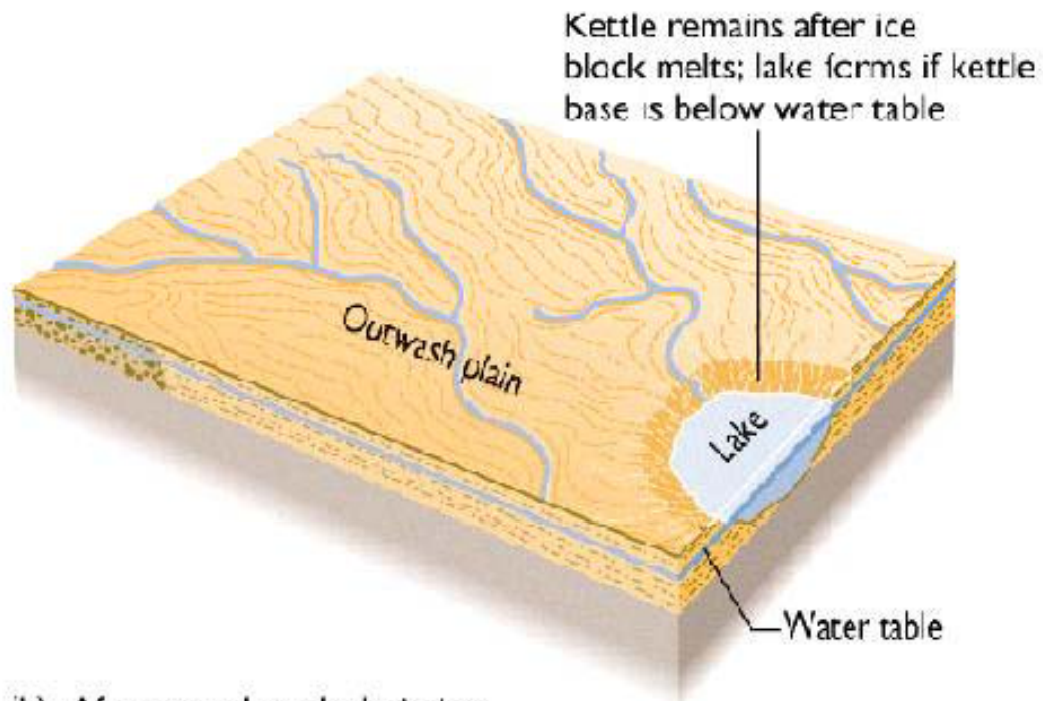
Drumlin

Glaciares. depósito periglaciar y fluvioglaciar

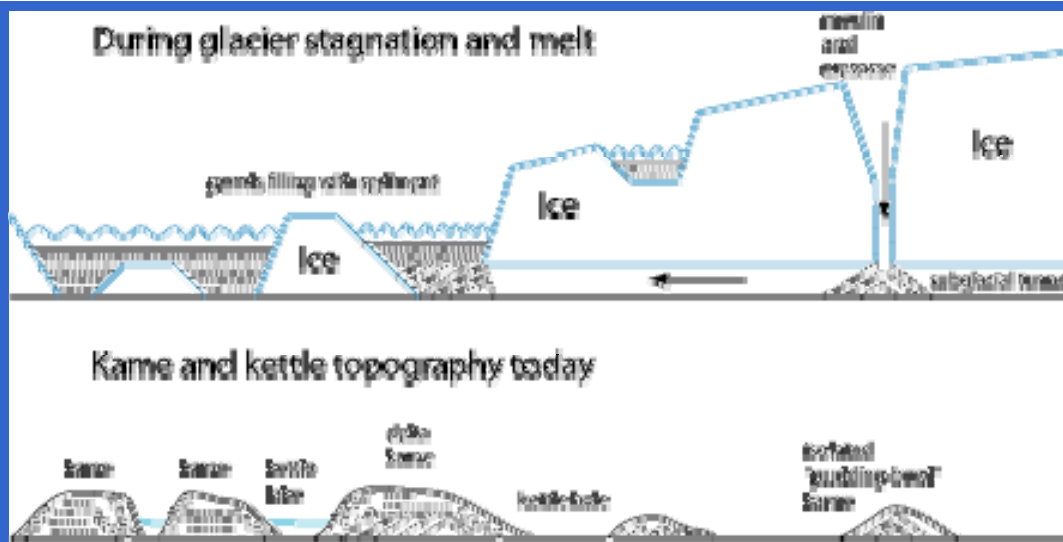
Llanura de lavado (outwash plain), ríos y lagos de deshielo (Kettle)



(a) During ice melting



(b) After complete deglaciation



Polygons formed by periglacial freeze-thaw processes



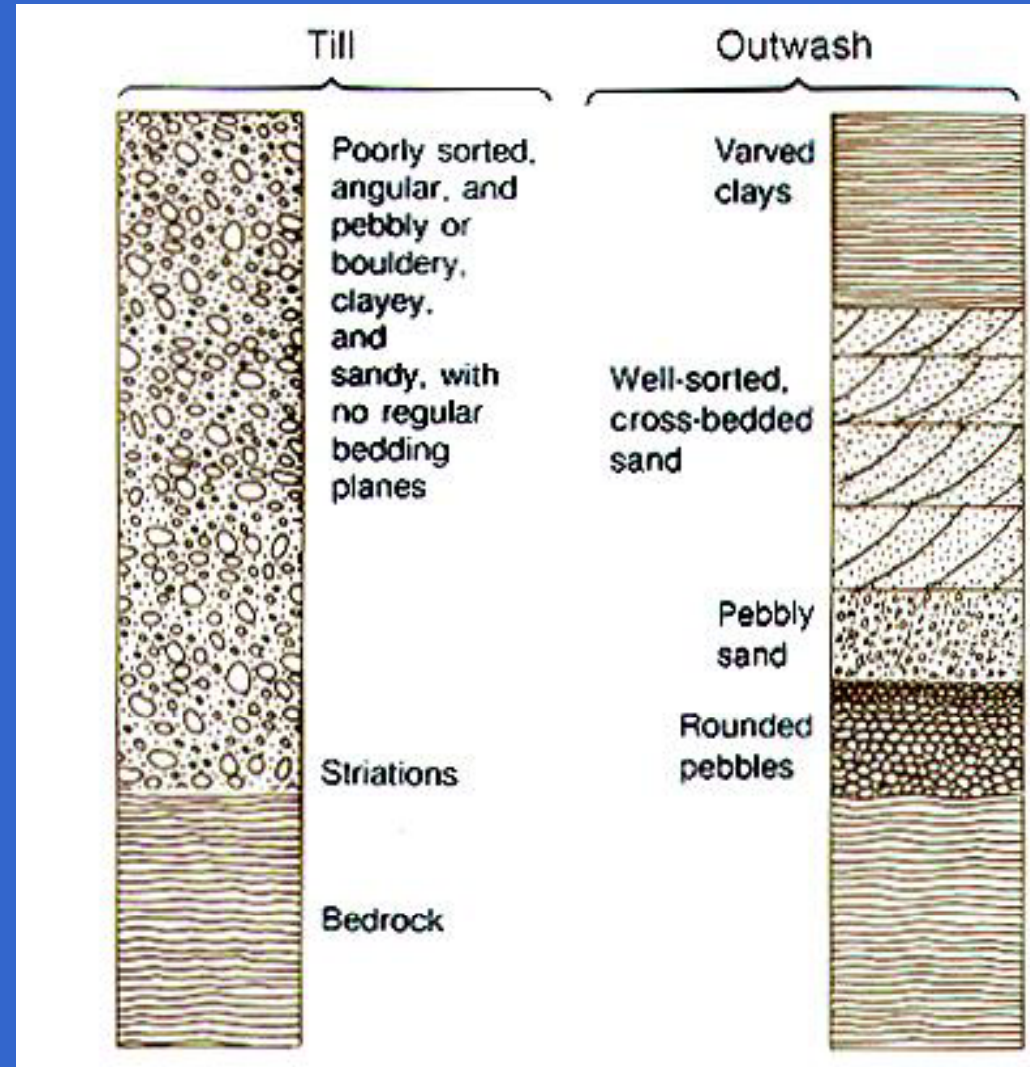
s formed by periglacial freeze-thaw processes



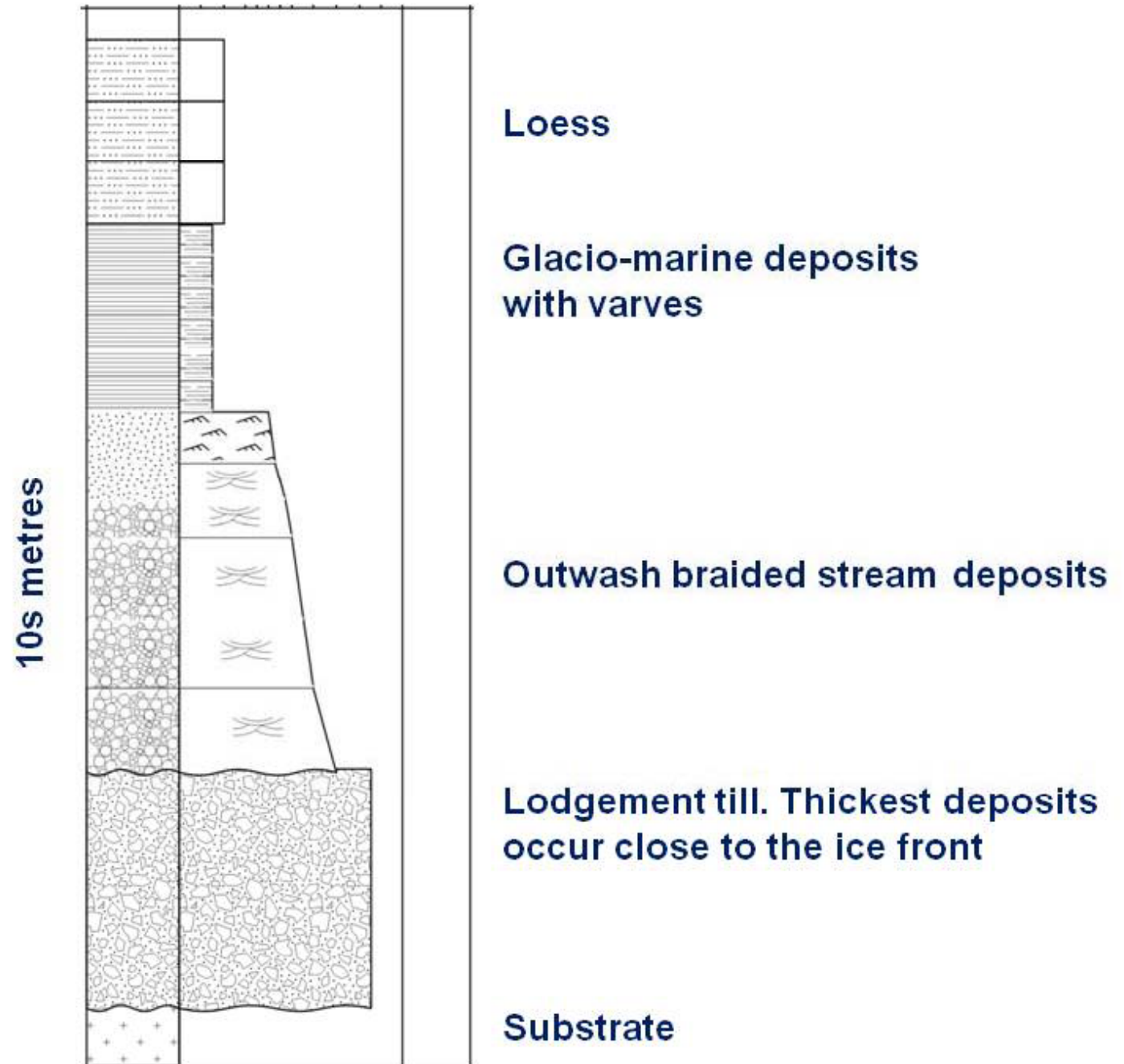
Glaciares, periglacial, fluvioglacial: depósito

Llanura de inundación (outwash plain), ríos anastomosados y lagos de deshielo.

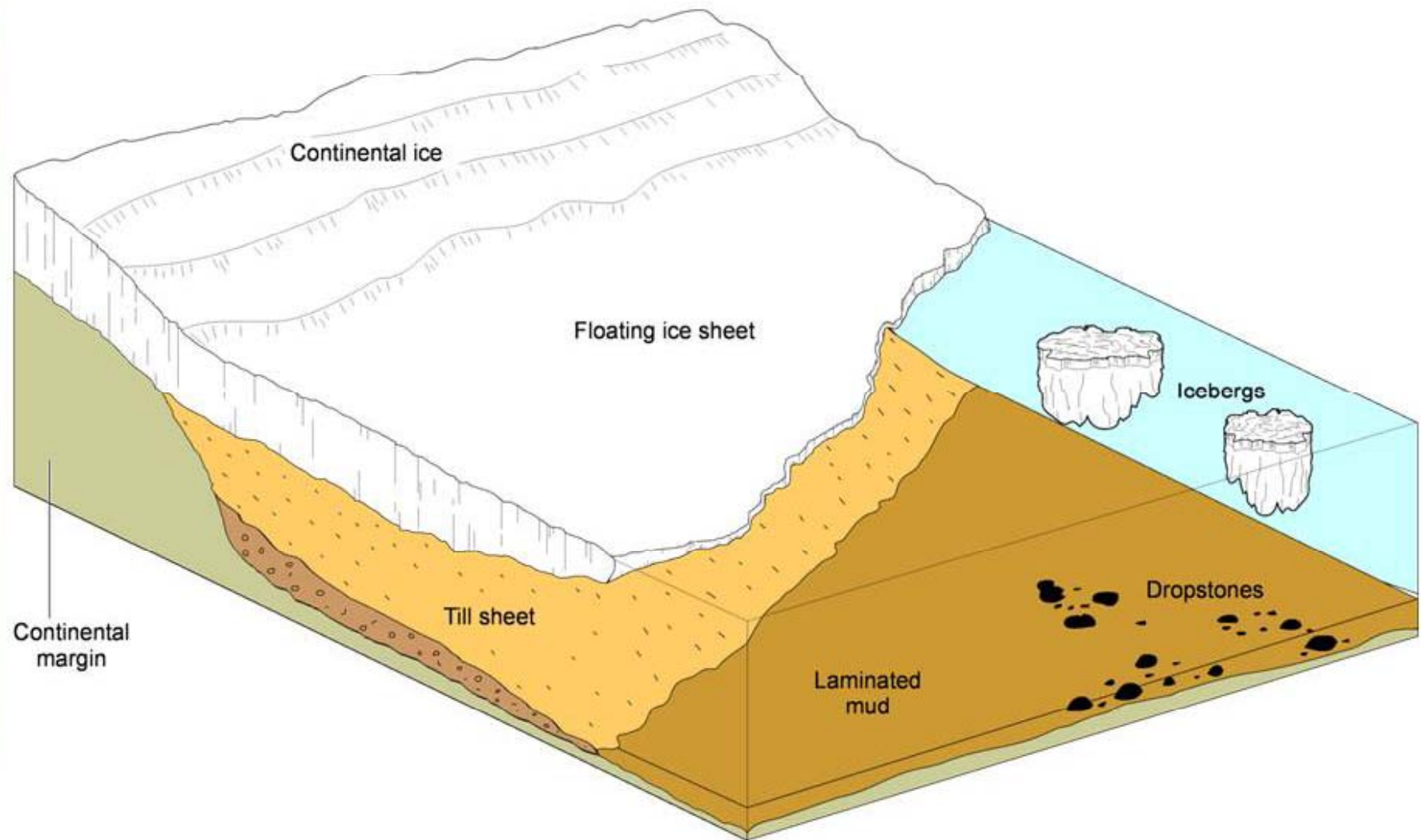
Sedimento estratificado, estratificación cruzada, clasificado (arenas y grava), en lagos sedimento bien clasificado, fino, formando “varves”.



Graphic sedimentary log of continental glacial deposits



At continental margins ice feeds floating ice sheets



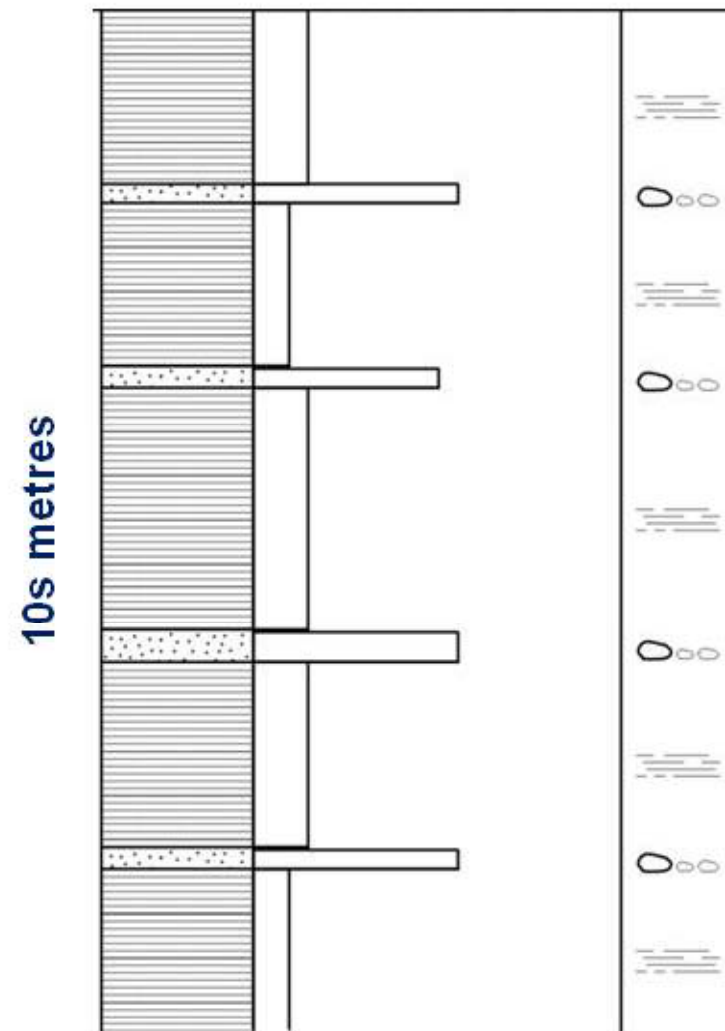
Glaciomarine deposits: laminated mudrocks with sparse, ice-rafted coarser debris



Gary Nichols
Sedimentology
& Stratigraphy



WILEY-
BLACKWELL



Laminated muds with
ice-rafted sands and
gravels as beds and
isolated dropstones