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DDNE IN GERMANY/

RA AT LSY - HYDROCARBON DEGRADING
CONTUATION

INSTRUCTOR

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110

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Typ N. Ward

Types of diversity

- morphological
- physiological diversity
- genome size + topology
- phylogenetic diversity

Methods of studying

- culturing
- culture independent
- flux approach

Why use rRNA?

- universal
- large database

Culture methods

- advantages - strains maintained + raw material for expts
- disadvantages - bias due to selection pressure

Bias is seen in # of described species in different groups?
- e.g. Proteobacteria.

Culture-independent

- advantages - remove selection bias (13 new bacterial lineages)
- disadvantages - lysis, copy #, size of genome, PCR, GC

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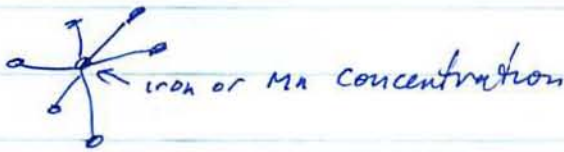
1936

1937

Planctomyces

Planctomyces - what are they?

- unique group /
- budding bacterium
- no peptidoglycan in cell wall (use protein pits Chlamydia)
- produce stalks



Genus planctomyces

- 1st thought to be fungus
- 1st cultures in 70s

Genus Gemmata

- spherical w/ pucker
- membrane bound nucleoid

Physical mapping

- isolate DNA in agarose matrix
- only a few enzymes work well
- 20 gels
- label specific bands + hyb. agst genome
- 5.2 mb
- 2x16p separated from 1x 5p, 23p
- HSP70 duplicated
- atp synthase duplicated

The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the structure of the atom is determined by the laws of quantum mechanics.

The second part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the structure of the atom is determined by the laws of quantum mechanics.

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Gemmata harder to do

~~Steps~~

Why large genomes?

- duplications?
- diverse metabolism?

Where are planctomyces?

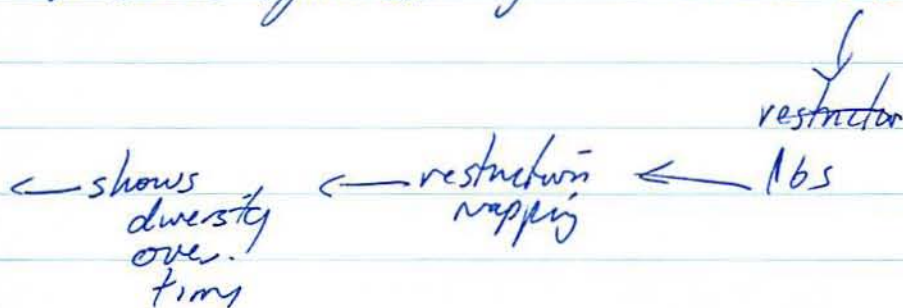
- soil
- marine snow
- tiger prawns
- new isolation in manure, compost, pitcher plant
- 16s shows "bush"

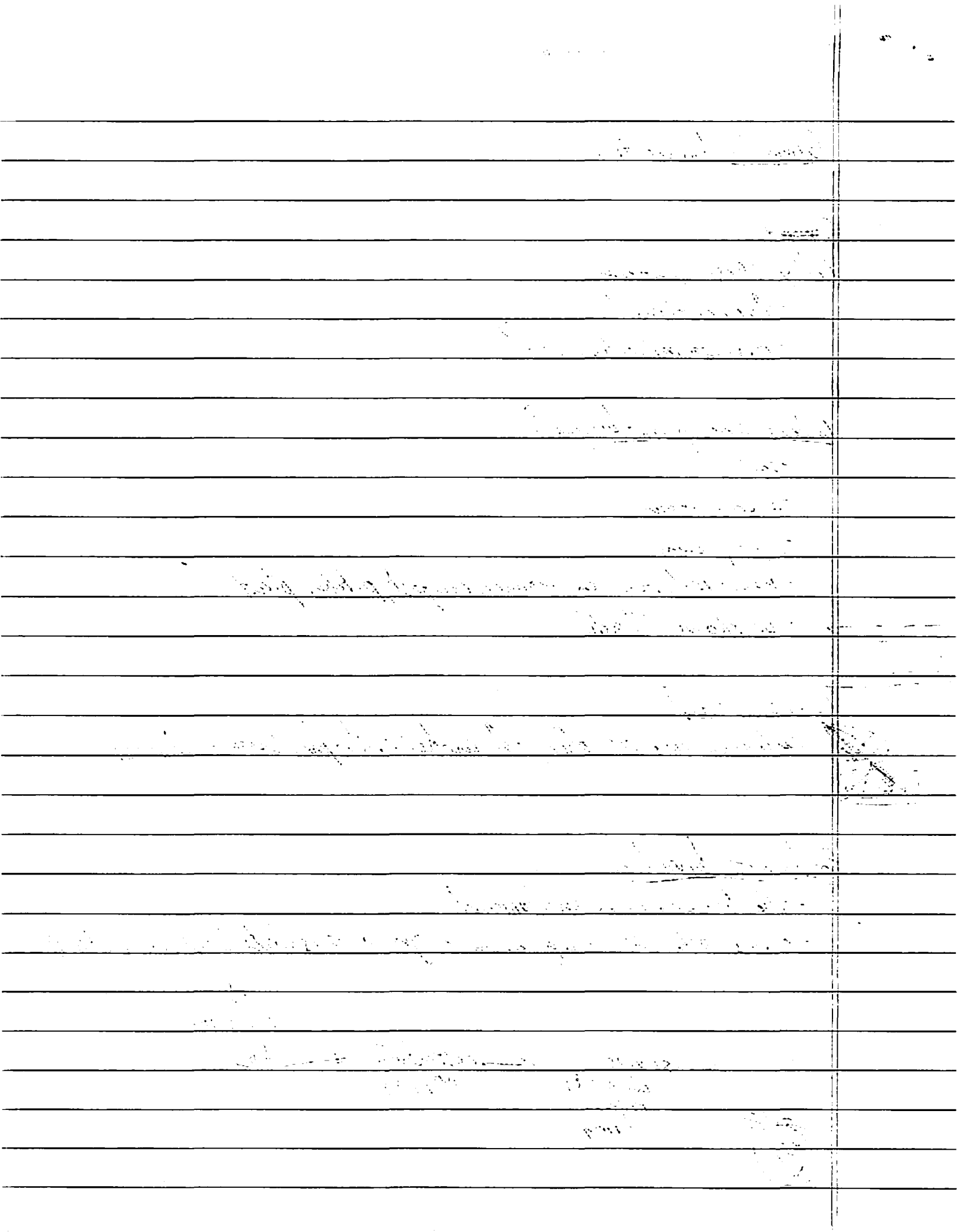
Why so many?

cultured are aerobic, chemoheterotrophic, sugar users

Freshwater bivalves

- filter bacteria from environment
- clams \rightarrow to sterile aquarium \rightarrow grow \rightarrow isolate bacteria in fbro





Pitcher plants

- 22 diff. sites
- colonized by
insects, rotifers, zooplankton, bacteria
- cultured
 - v. low pH
 - many pigmented colonies
 - 300 isolates - selecting for novel morphology
 - ARARA
 -
- many protobacteria
- some Acidobacterium (~4 novel ones)



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- CLONE CONSTRAINTS

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