

全国高等院校基础微生物学教师暑期讲习班

基础微生物学讲义

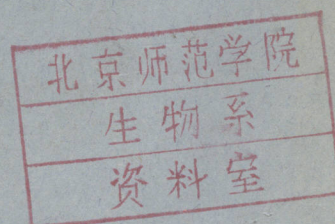
1980年7月，上海

(附图)

[加拿大] 仇大健 编著

复旦大学

一九八〇年



80-10-3-①
资料室

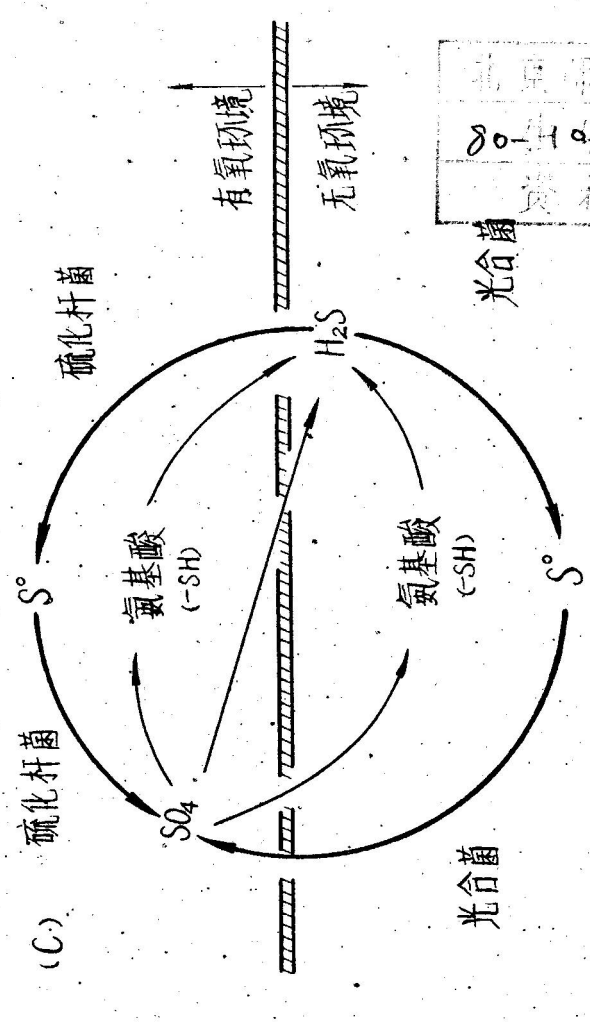
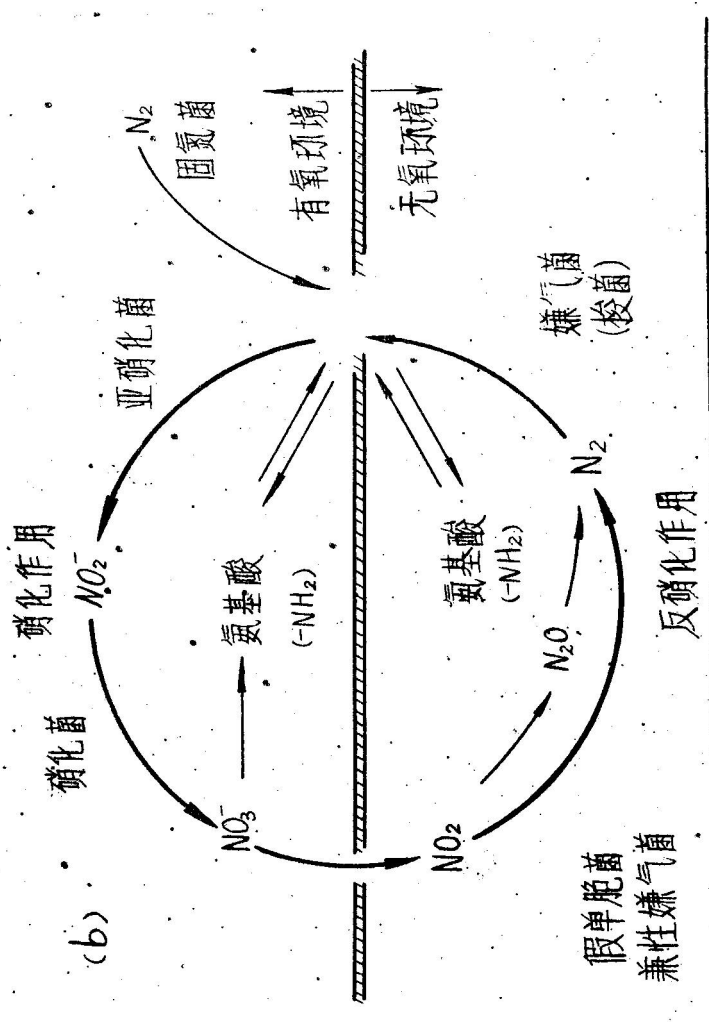
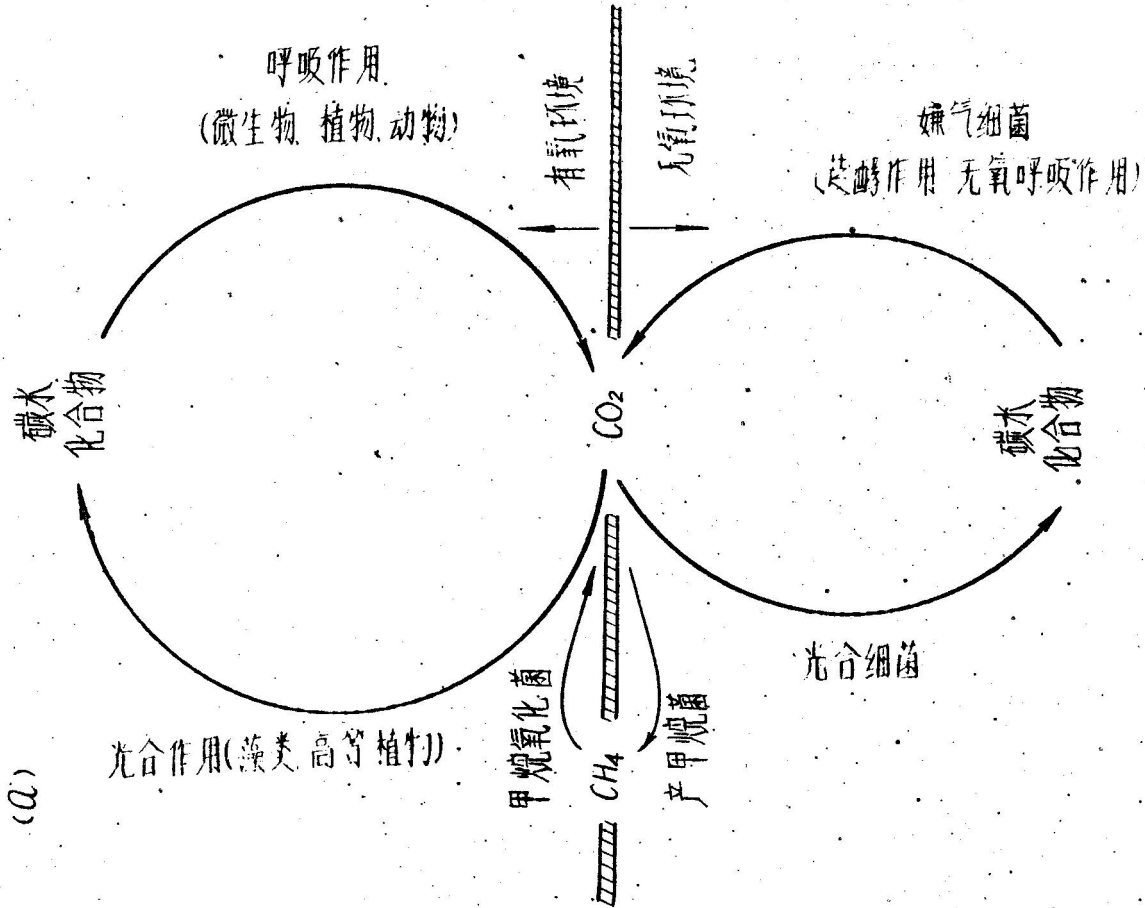
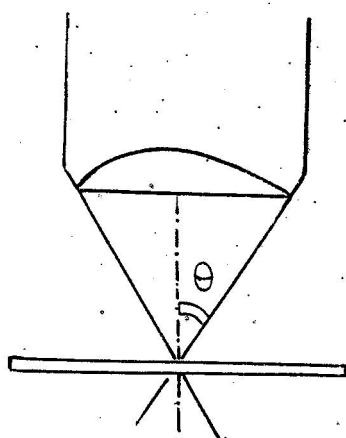
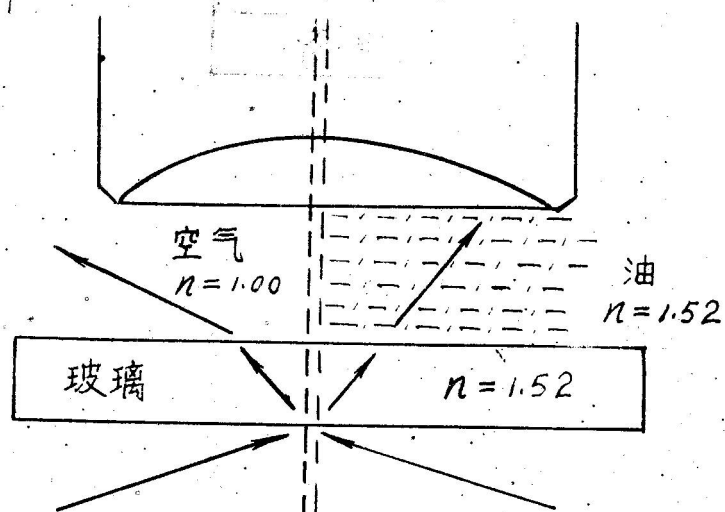


图 1-1 细菌在元素循环中的作用 (a) 碳 (b) 氮 (c) 硫

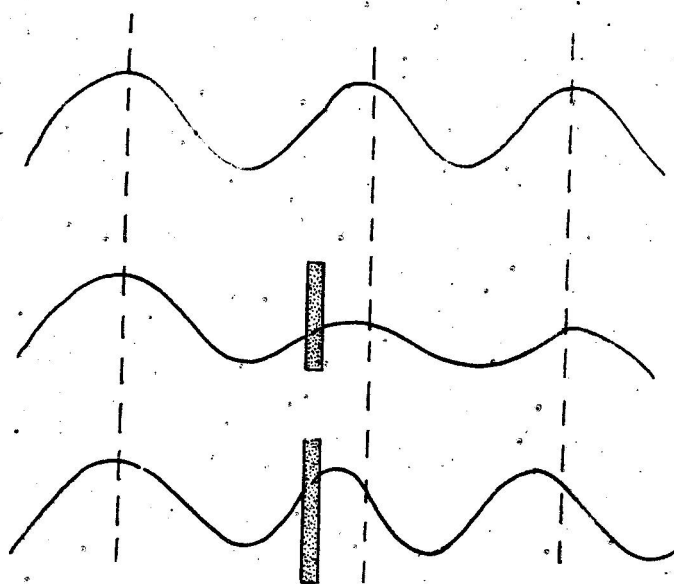


$$\text{清晰限度} = \frac{\lambda}{2 \times n \times \sin \theta}$$

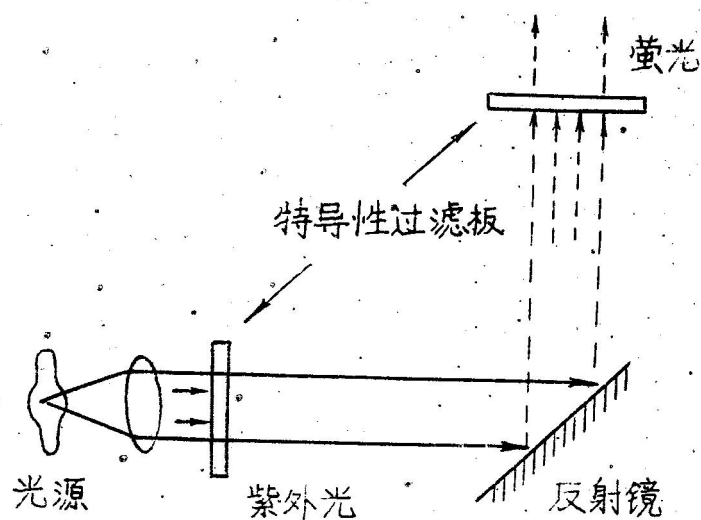
$$= \frac{\text{入射光的波长}}{2 \times \text{折光系数} \times \sin \theta}$$



油镜的作用



相差显微镜原理



荧光显微镜原理

图 1-2 显微镜的基本光学原理



单球菌



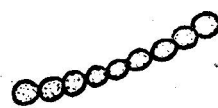
双球菌



四联球菌



八叠球菌



链球菌



葡萄球菌



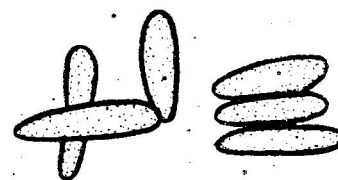
短杆菌



大肠杆菌



炭疽杆菌



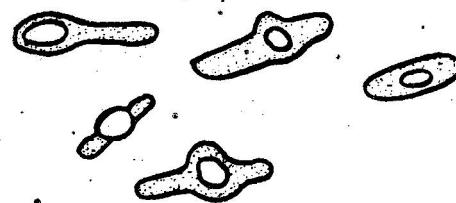
白喉杆菌



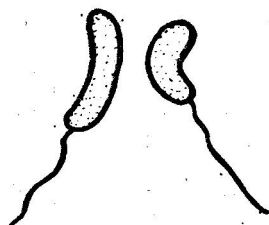
梭形杆菌



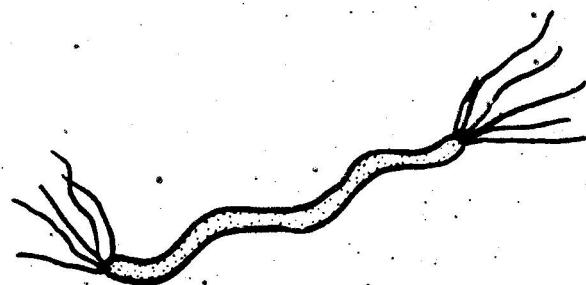
分枝杆菌



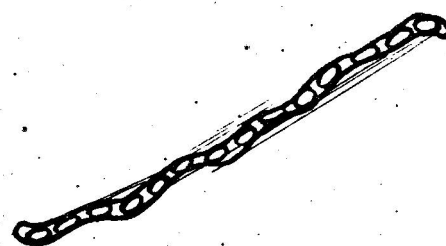
各种芽孢杆菌



霍乱弧菌



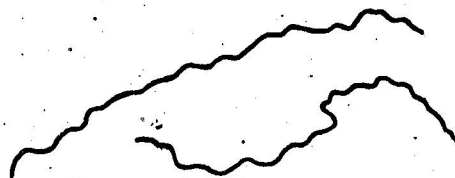
巨大螺菌



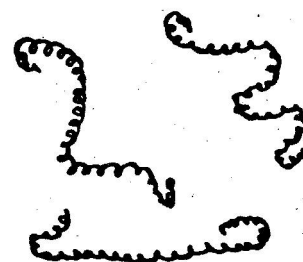
CRISTSPIRA
(鸡冠状、螺旋菌)



疏螺旋菌



梅毒螺旋体



钩端螺旋体

图 2-1

细胞形态举例

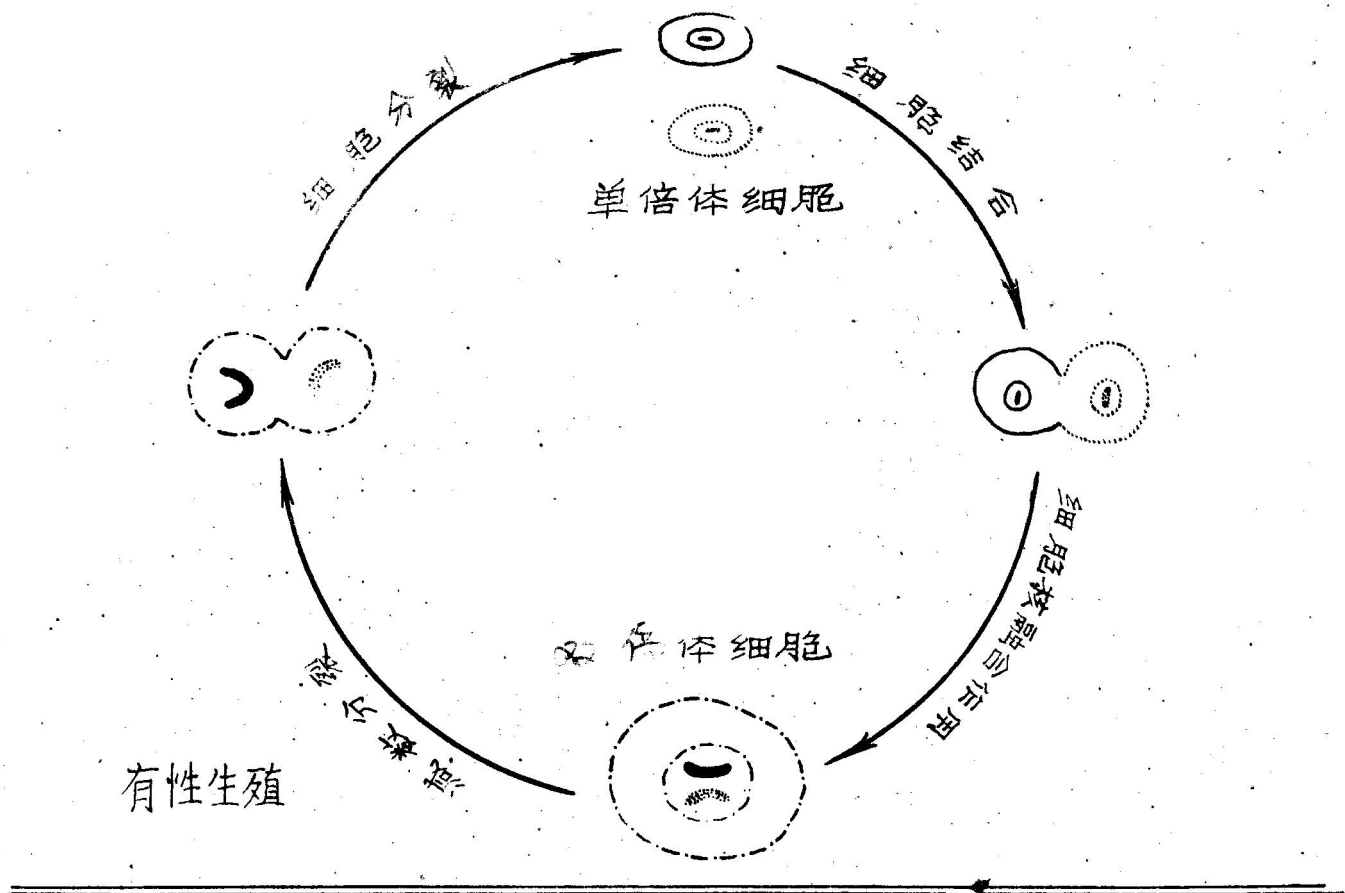
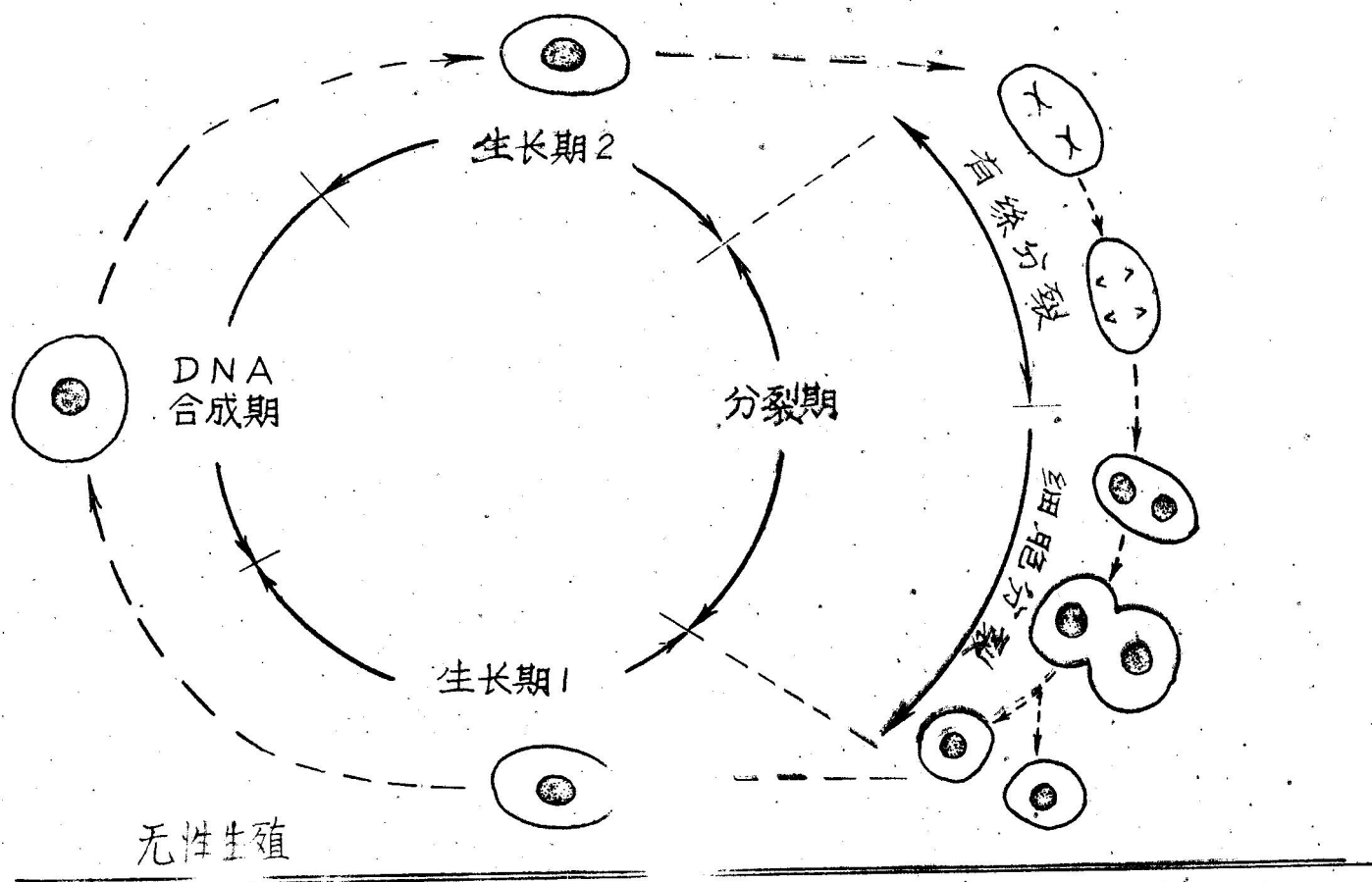


图2-2 核细胞生活史

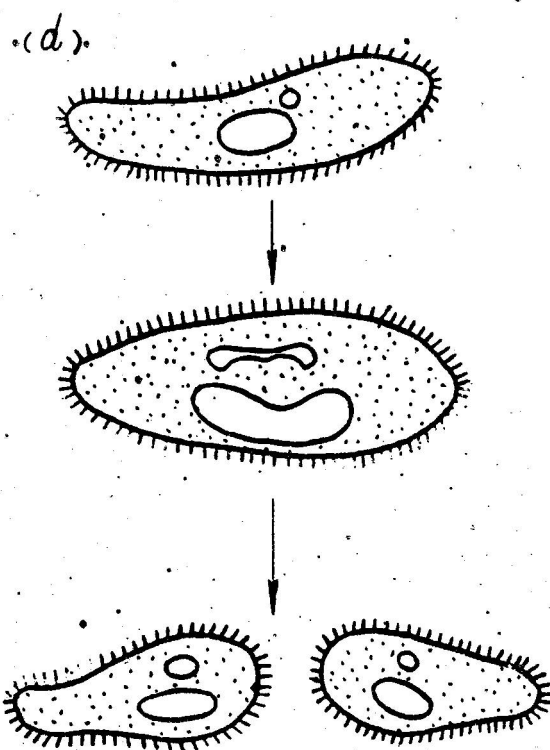
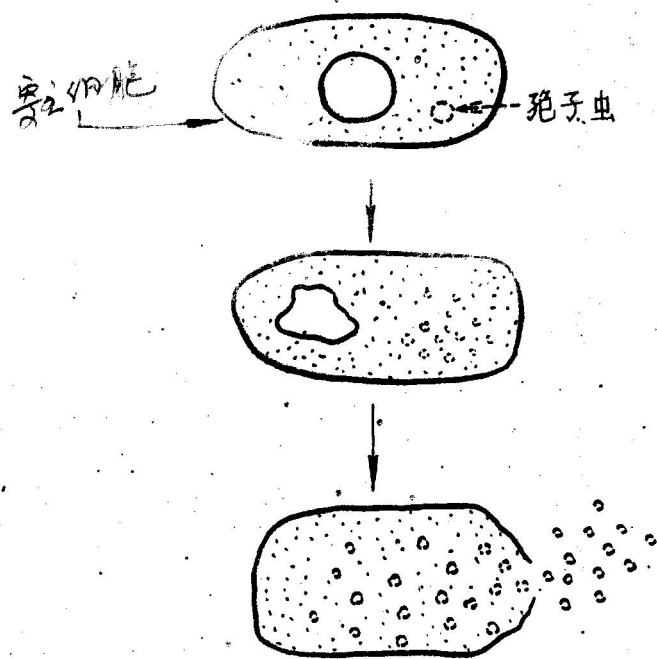
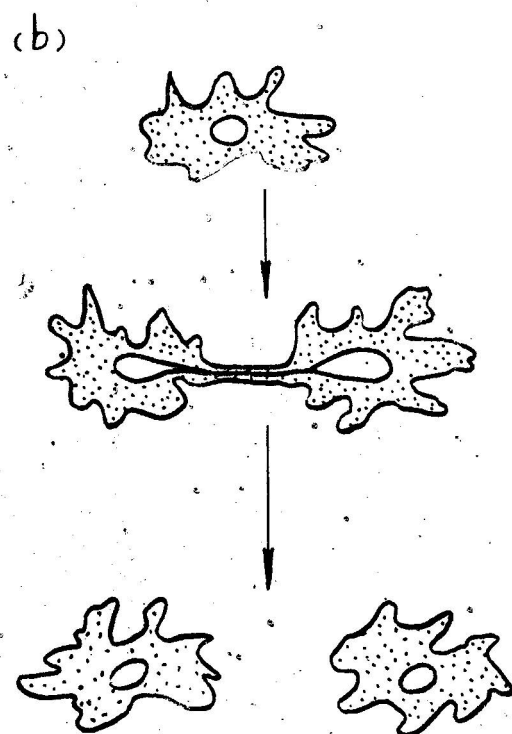
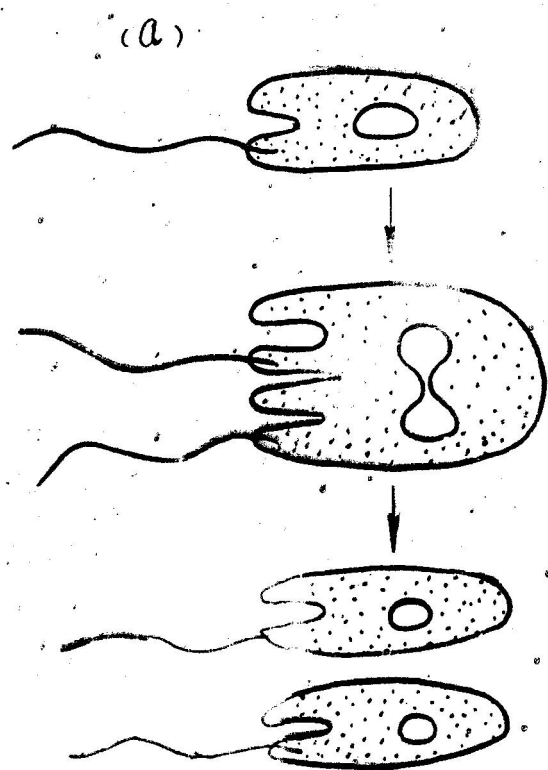


图2-3 原生动物的无性生殖过程

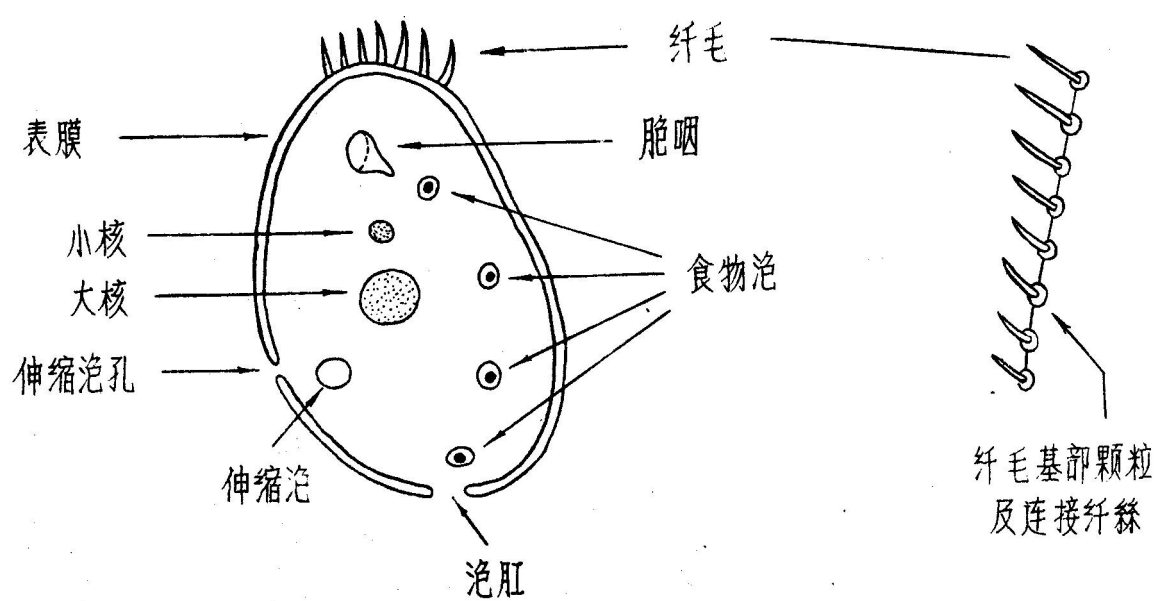
(a) 鞭毛虫

(b) 根足虫

(c) 孢子虫

(d) 纤毛虫

(a)



(b)

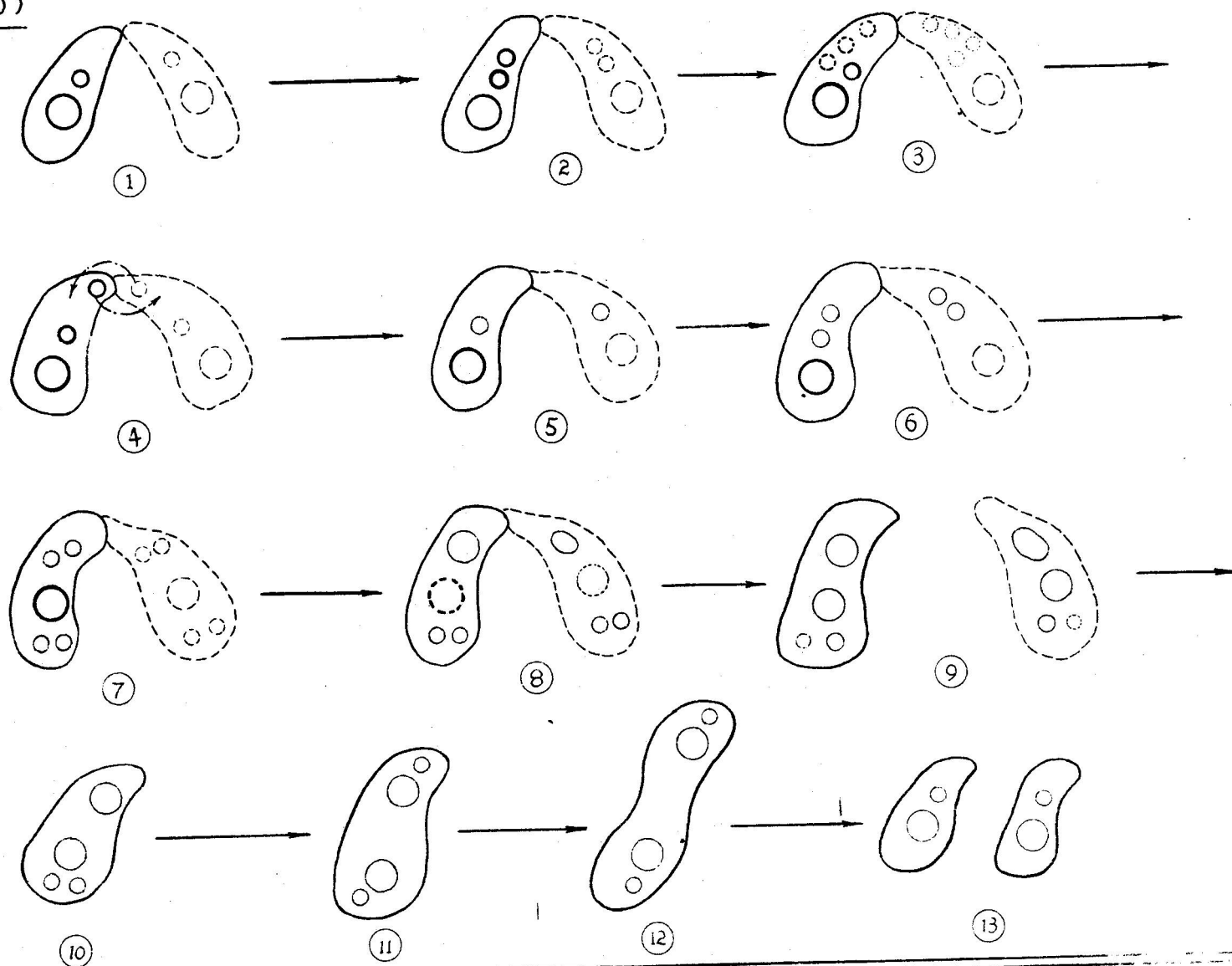


图 2-4

四膜虫的构造 (a) 及其有性生殖过程 (b)

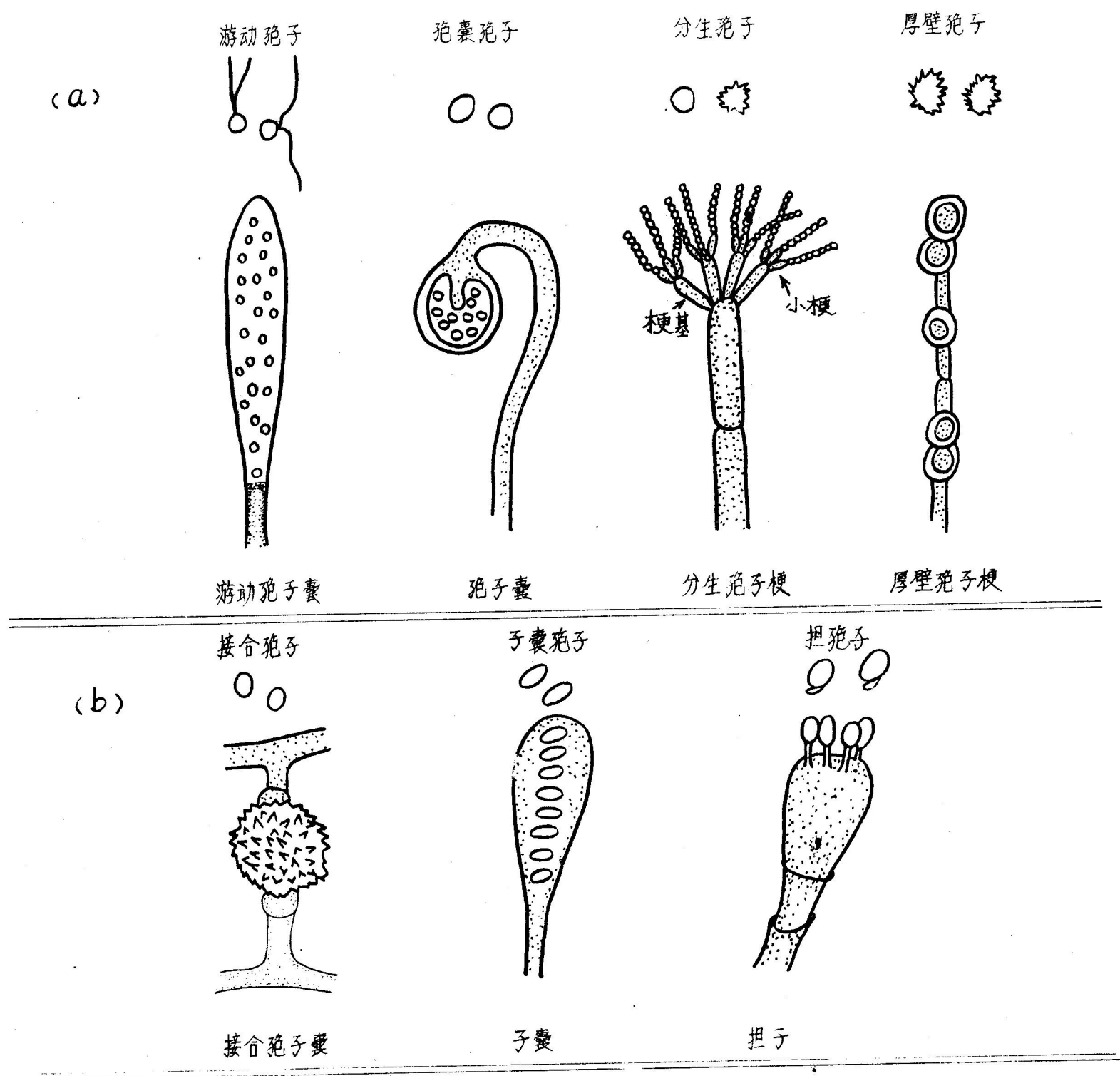


图 2-5 几种常见的真菌孢子

(a) 无性孢子 (b) 有性孢子

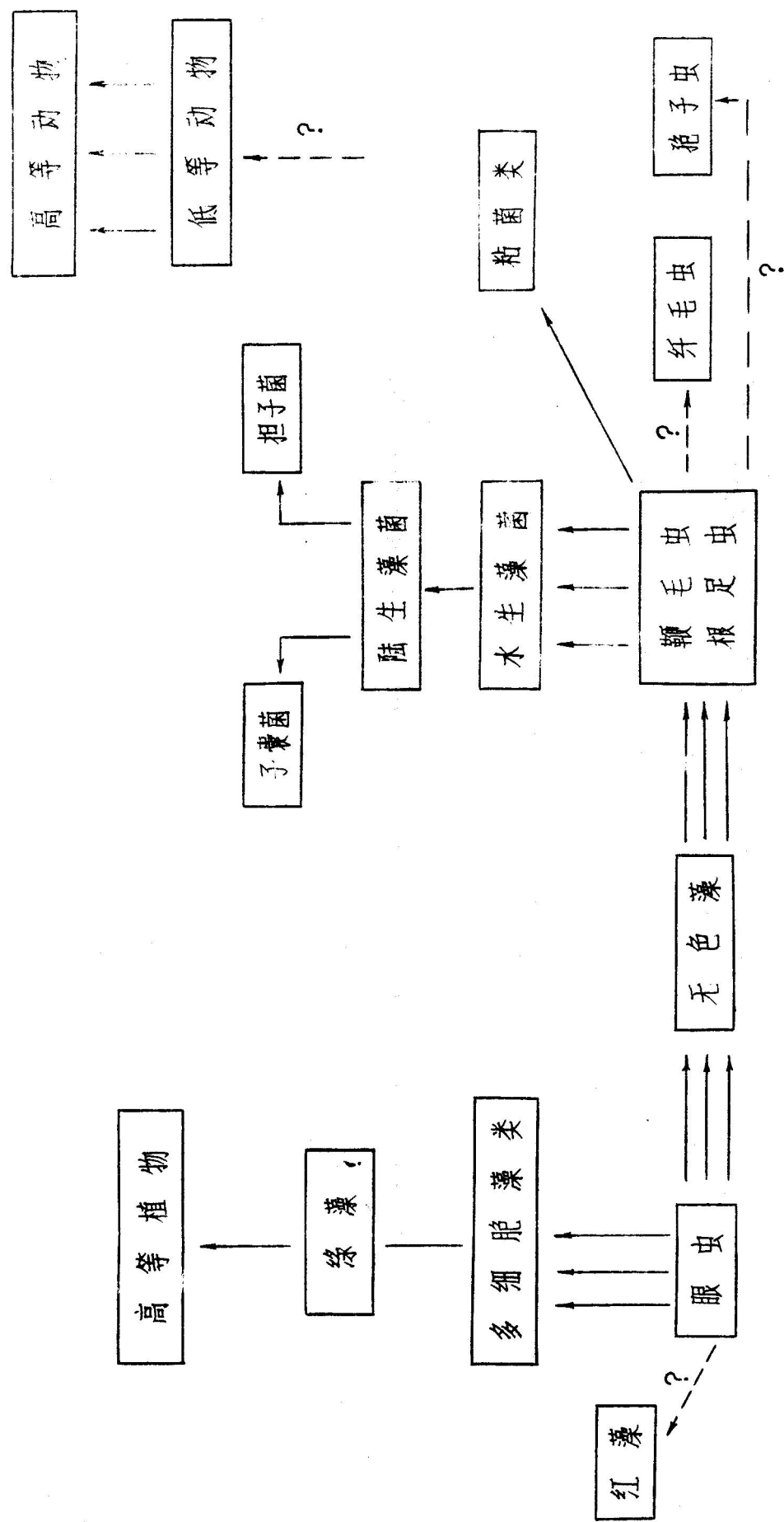
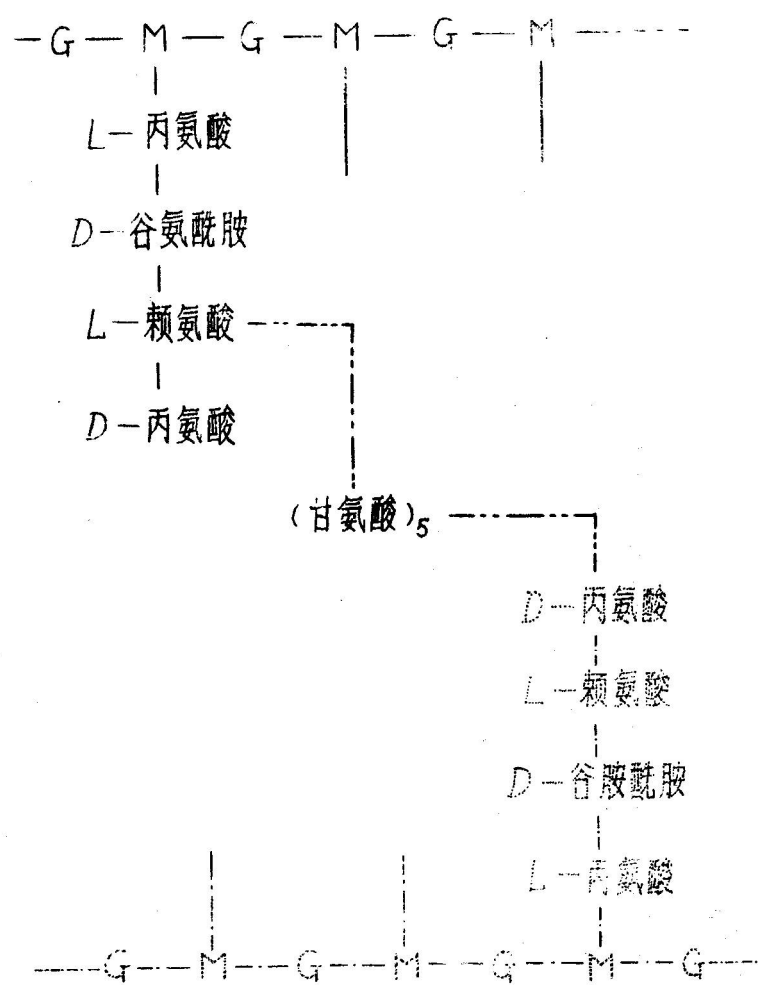


图 2-6 生物进化的可能途径

革兰氏阳性细菌



革兰氏阴性细菌

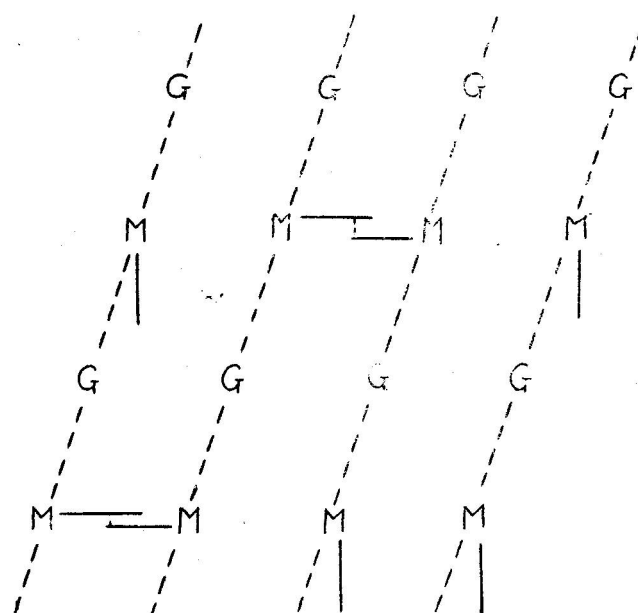
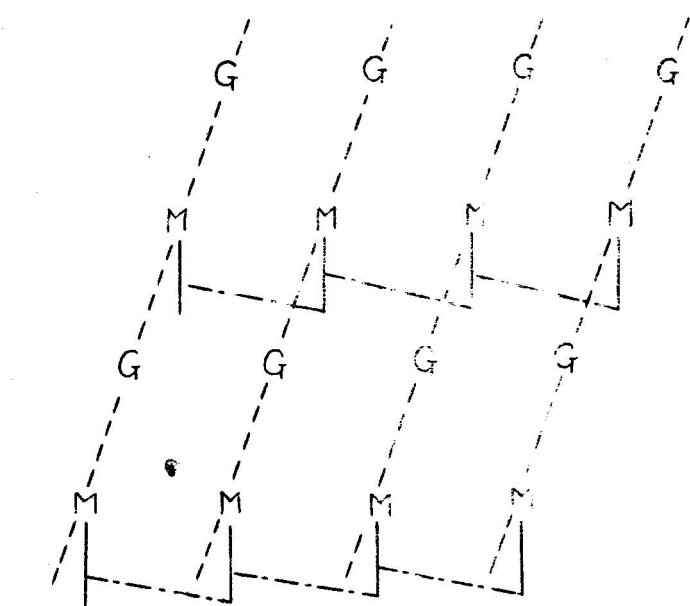
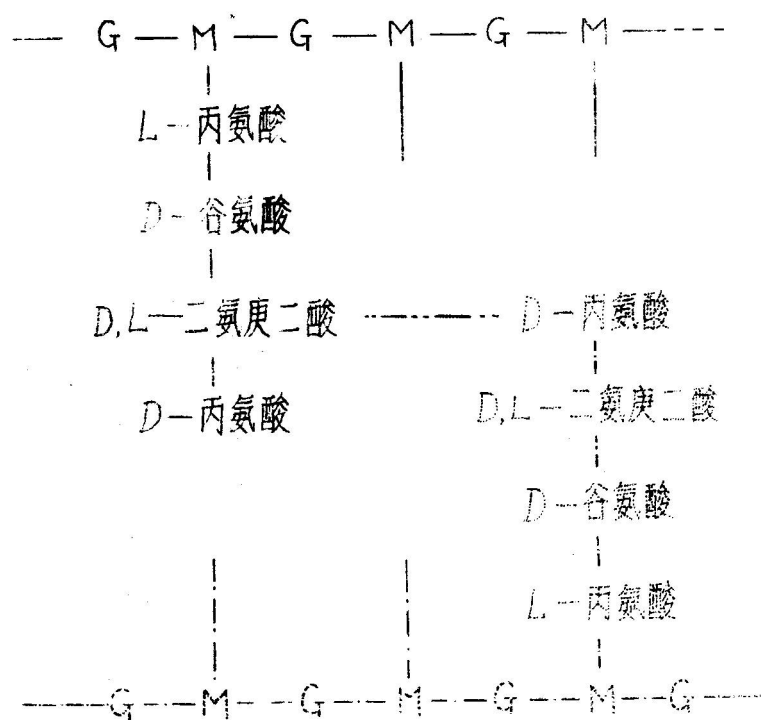
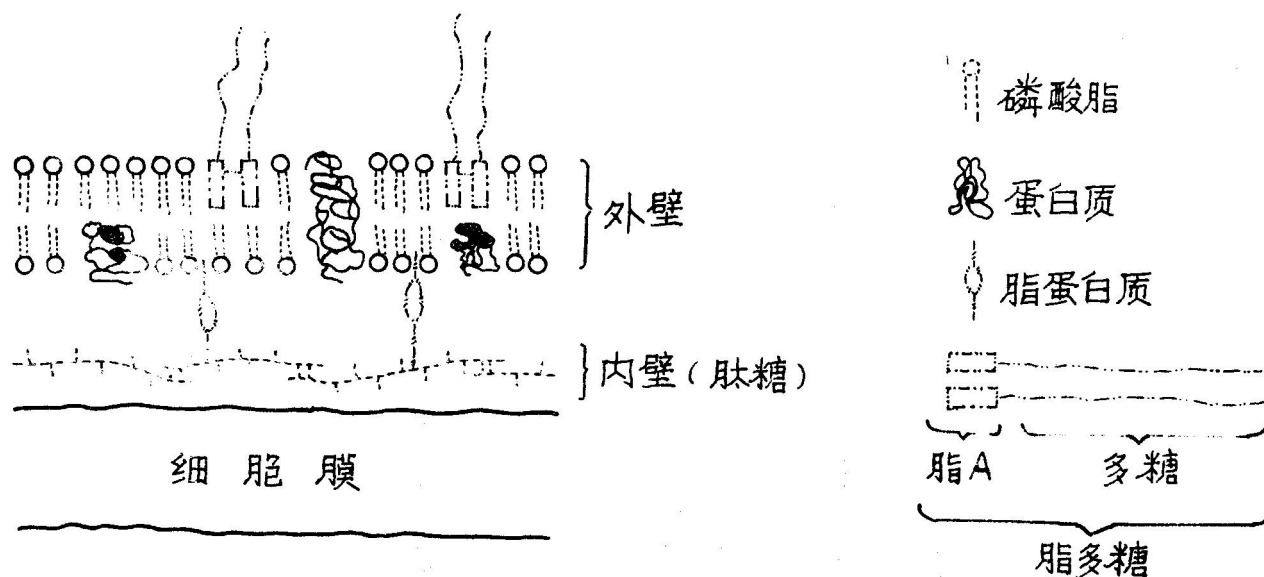


图 3-1

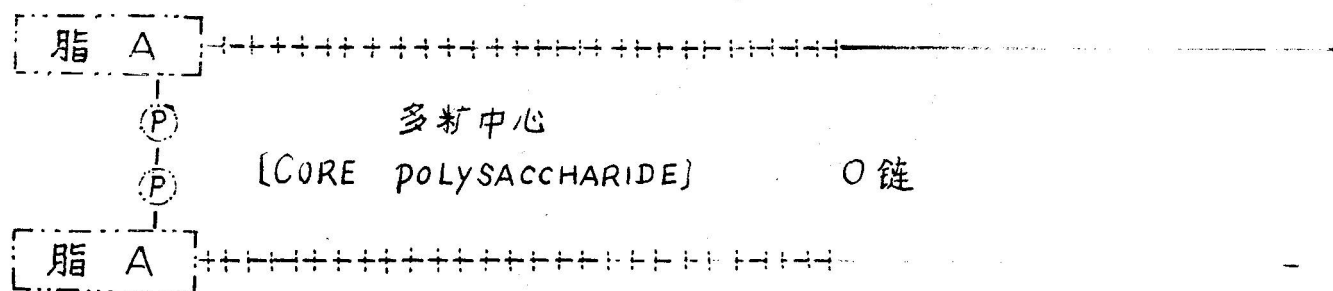
革兰氏阳性细菌及革兰氏阴性细菌细胞壁的结构

原书缺页

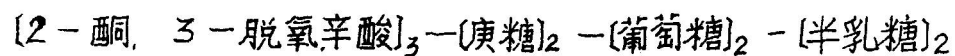
(a)



(b)



(c) 多糖中心:



O 链:

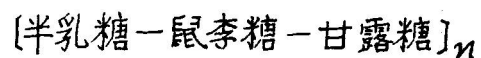
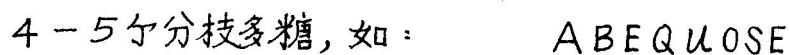


图 3-2 革兰氏阴性细菌细胞壁结构

实验步骤。

在零时将含有半乳糖渗透酶的大肠杆菌移至不含乳糖的培养基内培养——在不同的时间(1,2,3.等)将在上述培养基内繁殖的细胞移至含有乳糖及青霉素的培养基内,继续培养——观察混浊度改变(即溶菌现象)

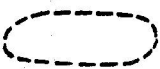
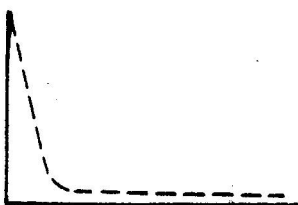
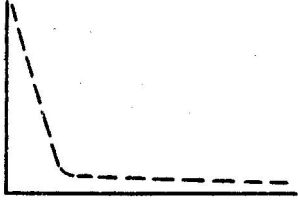
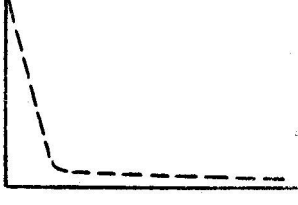
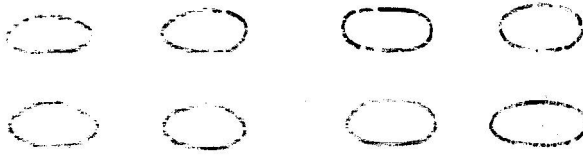
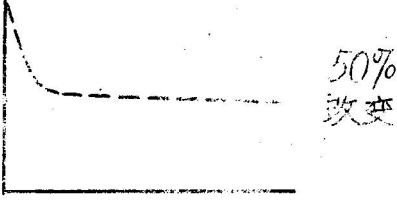
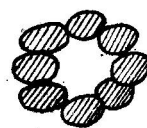
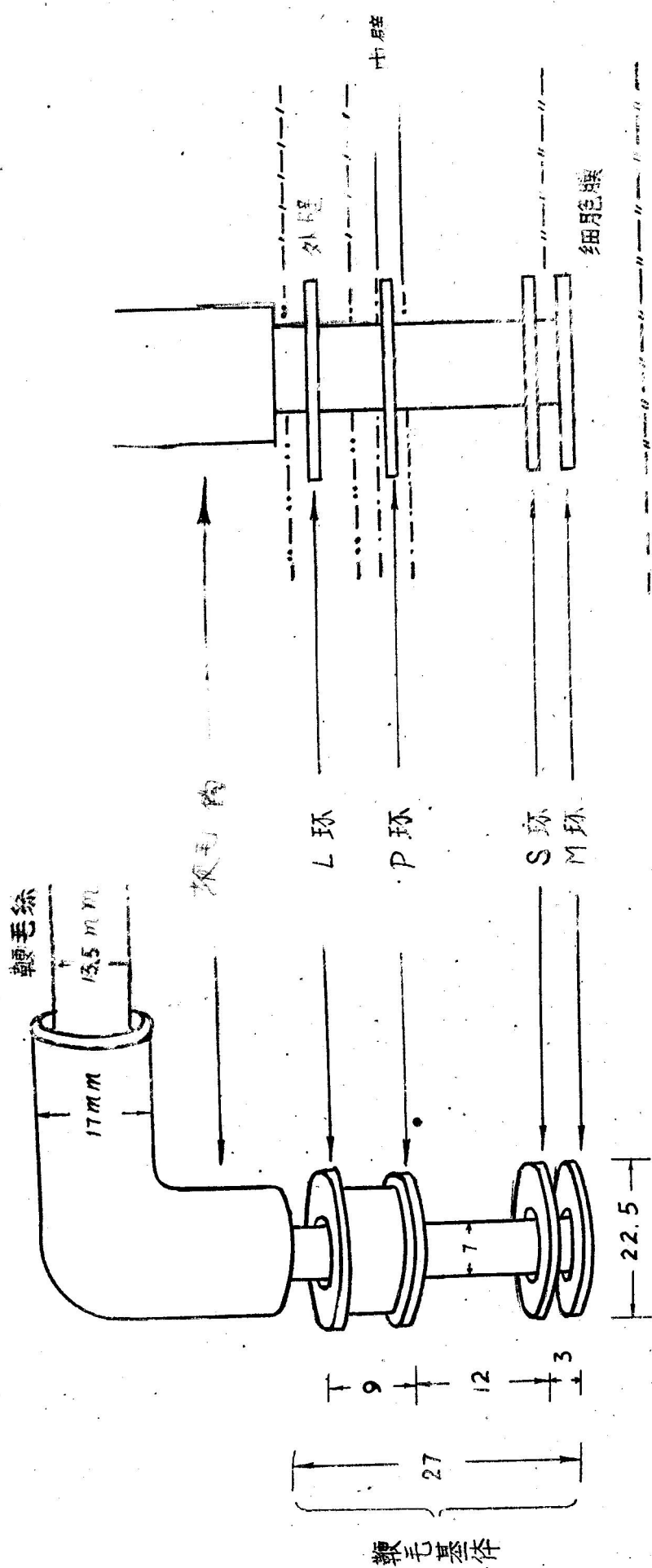
时间	含渗透酶菌数(百分数)	结果(混浊度)
0	100% 	
1	100% 	
2	100% 	
3	50% 	

图3-4 细胞膜合成位置的测定



鞭毛丝横切面(● 旗蛋白 FLAGELLIN)

图 3-5 大肠杆菌鞭毛的结构

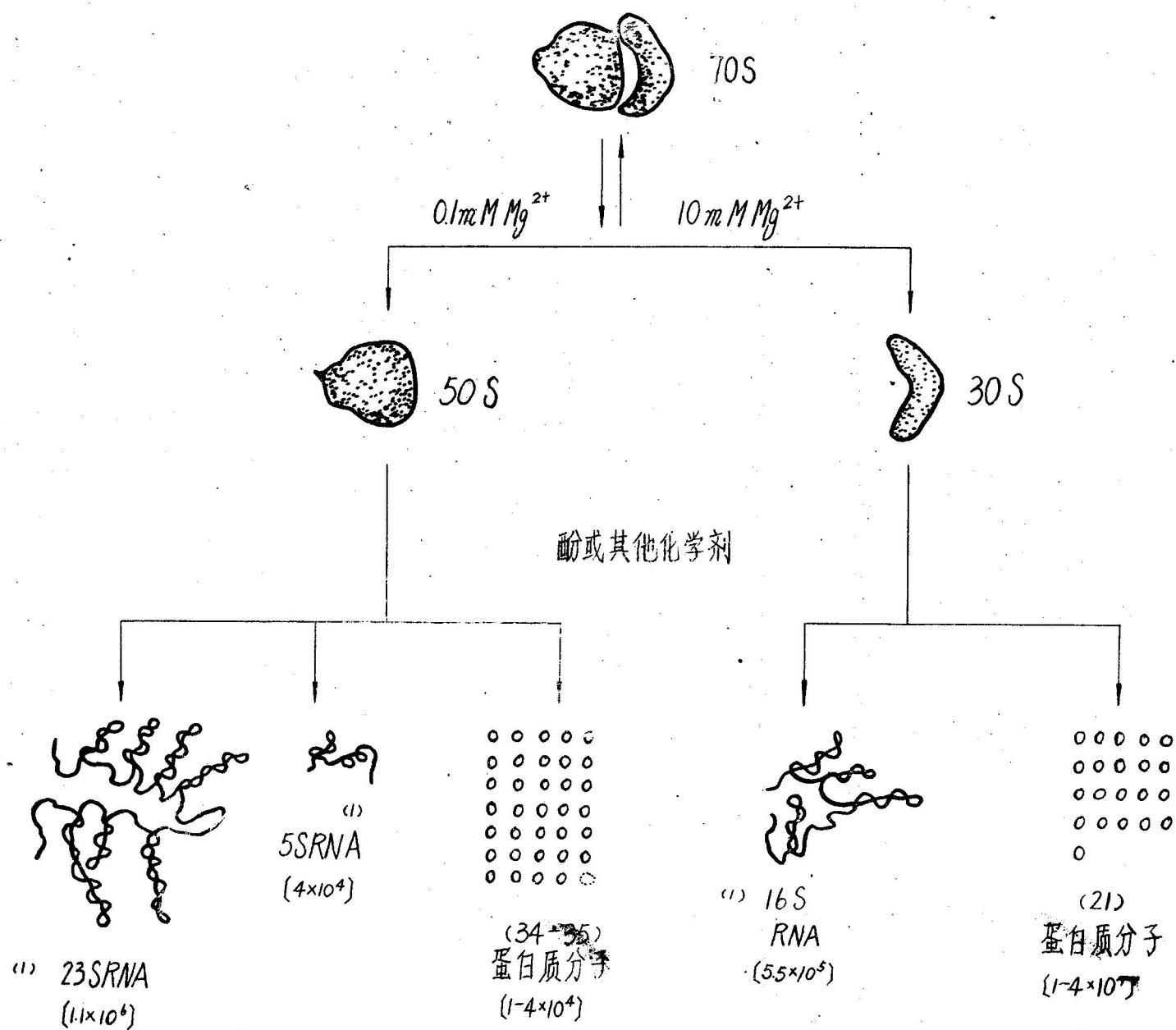


图 3-6 核糖体的结构

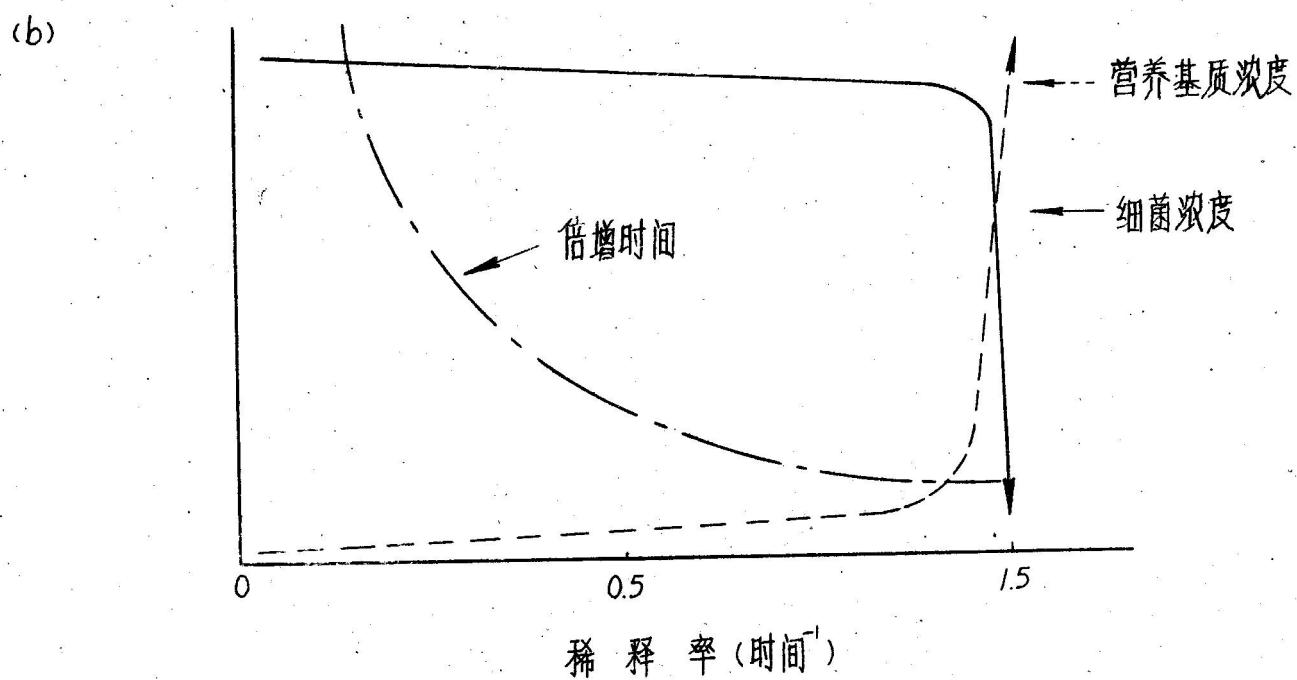
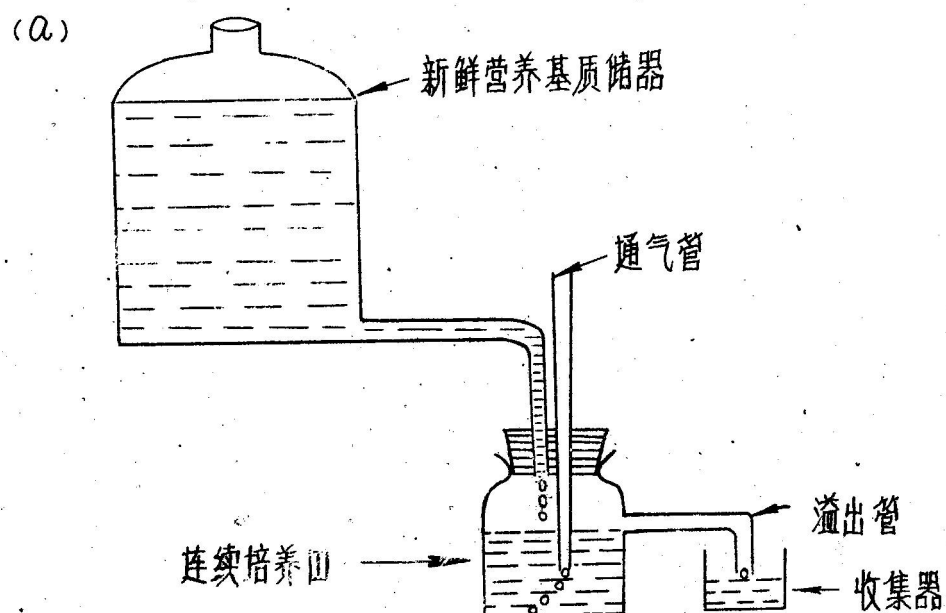


图3-7 简单连续培养器示意图(a)及稳定状态时各种参数的变化情形(b)