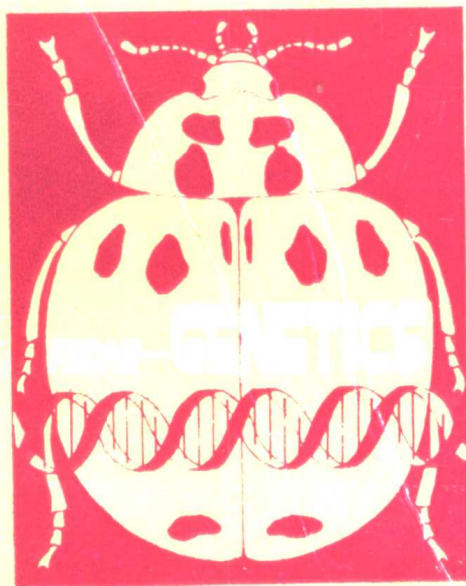


396871

桃李集

ABSTRACTS OF PAPERS FROM FORMER STUDENTS OF PROFESSOR C. C. TAN

Dedicated to him in commemoration of his
eightieth birthday and sixty years of teaching service



Edited by The Institute of Genetics
Fudan University, Shanghai

1989.9

号

桃李集

献给谈家桢教授
八十寿辰和执教六十年

复旦大学遗传学研究所编

一九八九年九月 上海

我的学生为祝贺我八十寿辰和执教六十周年，特从他们的代表作精选编辑成这一本集子奉献给我，我高兴地接受这一份厚礼，由衷地感谢学生们的一片深情厚意。

家桢自1929年东吴大学执教至今已六十年，平生无所孜求，终生之计，在于树人。希求我的学生以他们的学识服务于社会，贡献于人类。在我古稀之年，我眼见我的学生，不论在国内或海外，个个脱颖而出，在各自领域里出类拔萃。不少学生以他们的创新精神已走在生命科学的最前沿，作出了为世人所公认的成就，我为之感到兴奋，我的学生确实已超过了我。作为一个教师，还有什么比这更感到快慰的呢！

家桢八十年来历尽人生坎坷。但是，无论处在何种境地，我以尽绵薄之力为发展遗传科学事业之信念始终不变。人是要有信念的，也要有点精神的。有了这些，即使在事业上或生活上不尽人意的挫折和困难，就有逆流而上的勇气，决不会因此而垂头丧气，自暴自弃，或者怨天尤人，嫉妒他人。我很欣赏郑板桥在他的一幅竹石图上写下的绝句：

咬定青松不放松，立根原在破岩中；

千磨万击还坚劲，任你东西南北风。

做人要有志气，做学问探索真理何尝不要一股韧劲和骨气呢！

我希望我的学生高瞻远瞩，放眼未来。深感民族的紧迫感和社会的责任感，不囿泥于陈规陋习和个人私见。立足于勤，持立以初。不图浮光掠影的虚华，不随波逐流。以“求是”精神脚踏实地地为全人类社会和科学的进步，贡献自己的才华。

在我有生之年，我将一如既往与大家为国家科学事业的蓬勃发展作出贡献。我坚信在人类伟大的科学宝库中我们将留下越来越多的足迹。

遗憾的是，由于各种原因，还有很多学生的高质量论文未能收集进这本集子里，但是他们卓有成效的工作是足以使我感到欣慰的。

谈 家 桢

On the occasion of my 80th birthday and 60th anniversary of my teaching career, a number of my former students expressed their sincerest congratulations by dedicating to me this collection of their selected research papers. I am most delighted to accept this precious gift and I should like to express here my heartfelt thanks to them for showing me their deep affection in such a meaningful and thoughtful way.

It has been sixty years since I began to teach at Soochow University in 1929. Over all these long years I have endeavored to achieve nothing but the fostering of new generations of outstanding scholars and scientists who should be able to render excellent service to society and make contributions to humankind with their profound knowledge. Now in my old age I feel amply rewarded to find that my students, both in China and abroad, have become distinguished in their respective fields. Many of them have made great achievements with their remarkable initiativeness and are well recognized as trailblazers in the science of life. The fact that my students have surpassed me makes me feel excited. What else can give a teacher greater contentment!

Over the eighty years of my lifetime, I have been through countless thwartings. Yet no matter in what adverse circumstances, I've never faltered in my determination to do my part for the development of genetics in China. One must have convictions as well as some spirit. With these we shall have the courage to go against the tide when we come across difficulties and setbacks; we shall not feel frustrated or disheartened; nor shall we give ourselves up as hopeless or be jealous of other people's success. I have a special liking for a poem by the great painter and calligrapher Mr. Zheng Banqiao, which he wrote on one of his bamboo-and-rock paintings. It reads as follows,

Clinging fast to the pine tree,

Though stemming from cracked rocks;

You remain tough and upright despite incessant strikes.

Withstanding winds from all directions.

To be a man, one must have some spirit; to search for truth, it is still more important for one to have perseverance, integrity and backbone.

I hope that my beloved students will stand high and see far into the future. They should have a great sense of urgency and responsibility for the development of our society and for the advancement of our Nation; they should not be confined to convictions and prejudices; they should be diligent and persevering; they should not let themselves just drift along with the tide; they must start from the spirit of seeking truth from facts, make down-to-earth efforts and devote their talents to the progress of science and the entire human society.

In the remaining years of my life, I shall, as ever, work to the best of my ability for the development and prosperity of science in our country in collaboration with my colleagues. I am convinced that we shall leave more and more significant traces in mankind's great treasure-house of science.

What is to be regretted is that for various reasons we are not able to include in this collection all of my students' excellent theses. Many of them are unjustifiably left out. Their celebrated works, however, have always won my high esteem and will remain a lasting comfort for the rest of my life.

C. C. Tan

目 录

1. 面包酵母菌株 BⅠ 的呼吸缺陷突变的遗传性质.....陈士怡等 (12)
2. 粗糙脉胞色素形成中的遗传因素和非遗传因素.....盛祖嘉 沈仁权 (14)
3. 甘薯新品种华北 117 和华北 166盛家康等 (16)
4. 浙江省的森林植被与其分区.....蔡士侯 (18)
5. 纤维素微生物的研究.....王祖农等 (20)
6. 一种核仁成分——染色体周核仁蛋白 (PCN) 对染色体凝缩及脱凝缩的参与.....施履吉等 (22)
7. 家鸡性转换的遗传学研究.....刘祖洞 梁志成 (24)
8. 我国樟科楠木属上锈菌新变种——紫楠锈菌.....葛起新 徐 同 (26)
9. 中国应用生物作用物防治马尾松毛虫 *Dendrolimus punctats* (膜翅自枯叶蛾科)萧刚柔 (28)
10. 苏联球茎大麦有利基因引入普通小麦的研究.....汪丽泉等 (30)
11. 杂交水稻根系生理优势及其与地上部性状的关联研究.....陆定志 (32)
12. 浙江省柑桔蚜虫寄生蜂及三种中国新记录(膜翅目: 小蜂总科).....李学骝等 (34)
13. 水稻花培育种在粳硬杂交上应用问题与展望.....金远民 游树鹏 (36)
14. 泡洞丛枝病的研究.....袁嗣令 (38)
15. 普通小麦 *Primepi* 细胞质雄性不育性的初步研究.....范 濂等 (40)
16. 灰色链霉菌质粒 DNA 复制.....薛禹谷等 (42)
17. 花生入地结荚原因的研究.....潘瑞炽等 (44)
18. 钾营养对水稻光合器功能以及谷粒质量的效应.....饶立华等 (46)
19. 陆地棉品种间杂种的种仁油分和氨基酸成分的遗传分析.....李道藩 朱 军 (48)
20. 杭州密梨经济结果量的探讨.....吴光林等 (50)
21. 消除粳型野败不育系包颈现象的研究.....申宗坦等 (52)
22. 梨杂种实生苗生长量与童期相关问题的研究.....沈德绪等 (54)
23. 中国病毒性疫苗的现状.....顾佩韦 (56)
24. 一株高温菌的原生质体的再生条件.....杨庆云等 (58)
25. 三个冬小麦杂交组合中七个农艺性状的遗传分析.....俞志隆 李桃生 (60)
26. 中国北方的灌草丛.....周光裕等 (62)
27. 核糖体蛋白对信使 RNA 的翻译特异性.....童克忠等 (64)
28. 甘薯早熟育种问题的研究.....叶彦复等 (66)
29. 红松种子中过氧化物酶活性与萌发的关系以及种子中的代谢抑制物.....张良诚等 (68)
30. K88 和 K99 抗原基因的克隆与表达.....洪孟民等 (70)
31. 轮回回交对水稻 (*Oryza sativa* L.) 籽粒性状遗传的影响.....熊振民等 (72)
32. 镉对雄性小鼠生精细胞的影响.....蒋耀青等 (74)

33. 果蝇幼虫向光形为的遗传分析.....庚镇城 堀田凯树 (76)
34. 黑腹果蝇的移动因子.....胡 楷 (78)
35. 二硫键在人血清白蛋白空间构象中的作用.....李致勋 蔡武城 (80)
36. 细菌视紫红质单体的光循环与光由响应信号之间的关系研究.....谈曼祺等 (82)
37. 枯草杆菌中通过细胞融合的质粒转移.....江行娟等 (84)
38. 风疹病毒的分离与减毒.....赵 铠等 (86)
39. 用 EPR 研究某些因子对小麦叶绿体内放氧复合物中强结合态锰的影响.....
.....孙 琦 罗昌溺 (88)
40. 栽培型籽粒用豆科作物叶肉细胞原生质体的游离培养与植株再生.....葛扣麟等 (90)
41. 产前诊断先天愚型综合症的核型与氨基酸的研究.....梁志成 戴 云 (92)
42. 棉酚的遗传毒理学研究.....张忠恕 王仁礼 (94)
43. 利用果蝇(*D. molangaster*)对复方孕素1号长效口服避孕药的遗传效应的
研究.....朱定良等 (96)
44. 嗜热脂肪芽孢杆菌(*Bacillus stearothermophilus*)产生的限制性内切酶
BstF I 和 BstY I 的分离鉴定.....陈中孚 孔慧敏 (98)
45. 不同品种及不同外植体材料对葡萄植株分化再生的影响.....王蕴珠等 (100)
46. 工业微生物中质粒 DNA 的检测.....雷肇祖等 (102)
47. 梗稻微效基因抗瘟性遗传分析.....林世成 (104)
48. 甲烷短杆菌 HX 菌株的分离和特性.....许宝孝等 (106)
49. 人体淋巴细胞和中国仓鼠杂种细胞 FDI 的建立和鉴定.....邱信芳等 (108)
50. 人体基因定位的研究.....薛京伦 (110)
51. 地中海伞藻(*Acetabularia Mediterranea*)叶绿体生物节律基因的分离和
叶绿体基因某些特征的研究.....柴建华 (112)
52. 人胸苷激酶基因和 cDNA 的克隆及其结构的研究.....赵寿元 (114)
53. 油菜倍半二倍体和倍半四倍体的细胞遗传学研究.....袁妙葆等 (116)
54. 质粒和转座子的研究.....郑北鑫等 (128)
55. 一个衣藻叶绿体 DNA 复制起始点的克隆及其定界.....汪训明等 (120)
56. 人类的同源 14q14q 罗伯逊易位.....周焕庚等 (122)
57. 蜜蜂属调控系统的镶嵌进化.....庄德安 (124)
58. 淡色库蚊(*Cutex pipiens pallens* Coq.)相互易位的分离及其应用的研究
.....黄品钱 (126)
59. 电离辐射与化学物诱发雄性小鼠显性致死效应.....刘明哲等 (128)
60. 小鼠活体精原细胞姊妹染色单体互换测定.....吕 群等 (130)
61. 中国人苯丙氨酸羟化酶基因的限制酶位点多态性研究.....曹溢滔等 (132)
62. “80”隐性白羽白洛克品系的选育和利用.....管 镇等 (134)
63. 酵母 *suc2* 基因的克隆.....李育阳等 (136)
64. 水稻紫鞘病菌——中国帚枝霉新种.....陈吉棟 张国淳 (138)
65. 生物固氮研究的一些近况.....洪国藩 (140)
66. 杂交籼稻叶片衰老过程信息大分子合物的动态变化.....吴光南等 (142)

67. 品种资源的保存..... 张鸿谟 (144)
68. 青枯假单胞菌致病过程中与寄主专一性有关的 DNA 顺序的鉴别..... 马庆生等 (146)
69. 中国水稻真菌病..... 孙淑源 (148)
70. 克隆毒素源性大肠杆菌 K88ac 抗原基因..... 张林元 (150)
71. 杭州地区白鲢疯狂病及其病原体的研究..... 吴宝华等 (152)
72. 棉花新品种“皖棉 73—10”的育成..... 刘家樾 (154)
73. 质粒 R100.1 汞抗性基因表达的调控..... 戴秀玉等 (156)
74. 菜蚜迁飞期短期预测的研究..... 管致和 李文藻 (158)
75. 北美红杉的起源和进化..... 李林初 (160)
76. 浙江天台山果蝇一新种..... 陈华中 冈田丰日 (162)
77. 人体外周淋巴细胞、粘附细胞和血清在体外 PHA 反应中的相互作用..... 周光炎等 (164)
78. 血清中天然细胞毒因子的分离..... 杨树青等 (166)
79. 微核形成与细胞周期关系的初步研究..... 薛开先等 (168)
80. 油菜和烟草叶片组分 1 蛋白的结晶..... 应燕如等 (170)
81. 短尾猴(*Macaca speciosa*)三个亚种的 G 带和 C 带染色体比较研究.....
..... 陈宜峰 丽罗华 (172)
82. 大肠杆菌的一个转座子 Tn2981 的特性..... 陈孝康等 (174)
83. 貉(*Nyctereutes procyonoides*)精母细胞 B 染色体联合复合体的电镜观
察..... 施立明等 (176)
84. 肉芽组织囊试验 醋酸棉酚诱发离体细胞 SCE 和活体细胞点突变谈涌布 丁亦诺 (178)
85. 嗜热脂肪芽孢杆菌 α -淀粉酶基因的克隆和表达..... 任大明等 (180)
86. 哺乳动物体细胞群体基因突变率估算中参数分析..... 傅继梁等 (182)
87. 天然杀伤(NK)细胞与靶细胞相互作用的研究..... 丰美福等 (184)
88. 转座子 Tn2 在大肠杆菌中的转座特性..... 王敦全等 (186)
89. 原位杂交法定位玉米基因于粗线期染色体上..... 沈大稷 汪黔生 (188)
90. 人体细胞血影把 ^{125}I 标记的蛋白质和核酸转入动物细胞的试验..... 李昌本等 (190)
91. 羊水检测诊断产前胎儿异常 521 例的研究..... 张玉珍 (192)
92. 石蒜属的细胞核学研究..... 黄少甫 徐炳声 (194)
93. XY+189-, +DM(Double Minute)核型伴多发性畸型和智能低下一例
报告..... 金晓岚 吴文彦 (196)
94. 脂肪嗜热芽孢杆菌质粒 pFD101 的限制性..... 张君凯等 (198)
95. 高半胱氨酸血症与冠状动脉疾病的研究..... 周洁民等 (200)
96. 果蝇无飞翔能力突变型 6148 的遗传及神经肌肉功能研究..... 王德南等 (202)
97. 血红蛋白种间分子杂交以及树鼯进化地位的探讨..... 章 蓓等 (204)
98. 人体小卫星 DNA 探针的分离和 DNA 指纹图谱方法的初步研究..... 洪贤德等 (206)
99. 中国仓鼠成纤维细胞(Wg3-h)乌本苷抗性突变型的筛选和鉴定..... 祁 鸣等 (208)
100. 中国民族群体线粒 DNA 多态性研究及部分突变位点的测定..... 俞民澍等 (210)
101. 人体醇脱氢酶(ADH)基因区域定位在 4pter-4q21..... 徐一玲等 (212)
102. 应用 DNA 分子杂交研究黑腹果蝇 P 因子在中国沿海的分布..... 朱 芳等 (214)

103. 中国仓鼠/人杂种细胞克隆分布板的初建及其鉴定.....徐 芸等 (216)
104. 地衣芽孢杆菌碱性蛋白酶基因在枯草杆菌中的克隆和表达.....何超刚等 (218)
105. 细胞周期及 DNA 损伤剂引起的细胞 NAD 含量变化及其意义.....戴一凡等 (220)
106. N-甲基-N-硝基-N'-亚硝基胍和甲基磺酸乙酯对伯氏疟原虫氯奎抗药性的诱变作用.....姚寿南 管惟滨 (222)

CONTENTS

1. NATURE GENETIQUE DES MUTANTS A DEFICIENCE RESPIRATOIRE DE LA SOUCHE B-II DE LA LEVURE DE BOULANGERIE..... Chen Shihyi *et al.* (13)
2. GENETIC AND NON-GENETIC FACTORS IN PIGMENTATION OF *NEUROSPORA CRASSA*..... Sheng Zujia, Shen Renquan (15)
3. NEW SWEET POTATO VARIETIES HUABEI 117 AND 166..... Sheng Jialian *et al.* (17)
4. THE FOREST VEGETATION OF THE ZHEJIANG PROVINCE AND ITS DIVISION.....Cai Renhou (19)
5. STUDIES OF CELLULOLYTIC MICROORGANISMS Wang Zunong *et al.* (21)
6. INVOLVEMENT OF A NUCLEOLAR COMPONENT, PERICHROMONUCLEOLIN, IN THE CONDENSATION AND DECONDENSATION OF CHROMOSOMES..... Shi Luji *et al.* (23)
7. A GENETICAL STUDY ON SEX-REVERSAL IN THE FOWL.....Liu Zudong, Liang Zhicheng (25)
8. A NEW VARIETETY OF RUST FUNGI ON *PHOEBE* FROM CHINA..... Ge Qixin, Xu Tong (27)
9. THE USE OF BIOLOGICAL AGENTS FOR CONTROL OF THE PINE DEFOLIATOR, *DENDROLIMUS PUNCTATUS* (LEPIDOPTERA, LASIOCAMPIDAE), IN CHINAHsiao Kangjou (29)
10. STUDY ON INTROGRESSION OF USEFUL GENES FROM *HORDEUM BULBOSOM* TO COMMON WHEAT ... Wang Liquan *et al.* (31)
11. RELATIONSHIP BETWEEN PHYSIOLOGICAL HETEROSIS OF ROOT AND SHOOT SYSTEM OF HYBRID RICE SHAN-YOU 6 Lu Dingzhi (33)
12. THE PARASITIC WASPS ON CITRUS SCALE INSECTS FROM ZHEJIANG PROVINCE WITH NOTES OF THREE FIRST RECORDS SPECIES FROM CHINA (HYMENOPTERA, CHALCIDOIDEA)..... Li Xueliu *et al.* (35)
13. ON THE PROBLEMS AND PROSPECTS RELEVANT TO THE UTILIZATION OF RICE ANTHR- CULTURED BREEDING IN HSIFN X KENG HYBRIDIZATION..... Jing Yimin, You Shupeng (37)
14. SOME STUDIES ON WITHCES'S OF PAULOWNIA IN CHINA

- Yuan Tzuling (39)
15. A PRELIMINARY STUDY ON THE MALE STERILITY CYTO-
PLASM OF COMMON WHEAT PRIMEPI..... Fan Lian *et al.* (41)
 16. PLASMID DEOXYRIBONUCLEIC ACID REPLICATION IN
STREPTOMYCES GRISEUS.....Xue Yugu *et al.* (43)
 17. STUDIES ON THE CAUSE OF SUBTERRANEAN POD FORM-
ATION IN PEANUT PLANT *ARACHIS HYPOGAEA* L.....
.....Pan Ruichi *et al.* (45)
 18. EFFECT OF POTASSIUM ON THE FUNCTION OF PHOTOS-
YNTHETIC APPARATUS AND GRAIN YIELD OF RICE.....
..... Rao Lihua *et al.* (47)
 19. GENETIC ANALYSIS OF OIL AND AMINO ACID CONTENT
IN SHELLS OF UPLAND COTTON HYBRIDS.....
..... Ji Daofan Zhu Jun (49)
 20. STUDY ON THE ECONOMIC NUMBER OF FRUIT-BEARING
FOR HANGZHOU MILI..... Wu Guanglin *et al.* (51)
 21. STUDIES ON ELIMINATING PANICLE ENCLOSURE IN WA-
TYPE MS LINE OF RICE (*ORYZA SATIVA* SUBSP. *INDICA*).....
.....Shen Zongtan *et al.* (53)
 21. A STUDY OF PROBLEMS OF CORRELATIONS BETWEEN
THE GROWTH QUANTITY AND JUVENILITY IN PEAR
HYBRID SEEDLINGS.....Shen Dexu *et al.* (55)
 23. PRESENT STATUS OF VIRAL VACCINES IN CHINAGu Peiwei (57)
 24. THE REGENERATION CONDITION IN A THERMOPHILIC
BACTERIA..... Yang Qingyun *et al.* (59)
 25. GENETIC ANALYSIS OF SEVEN AGRONOMIC CHARACTERS
IN THREE WINTER WHEAT CROSSES... Yu Zhilong Li Taosheng (61)
 26. THE GRASSY THICKET IN THE NORTHERN PART OF
CHINA..... Zhou Guangyu *et al.* (63)
 27. TRANSLATIONAL SPECIFICITY OF RIBOSOMAL PROTEINS
TOWARD mRNA..... Tong Kezhong *et al.* (65)
 28. BREEDING FOR EARLY MATURING SWEET POTATO
(*Ipomoea batatas* L.)..... Ye Yanfu *et al.* (67)
 29. STUDIES ON THE RELATIONSHIP BETWEEN PEROXIDASE
ACTIVITY AND GERMINATION OF *PINUS KORAIENSIS*
SEED AND ON METABOLIC INHIBITORS IN THE SEEDS
..... Zhang Liangchen *et al.* (69)
 30. CLONING AND EXPRESSION OF GENETIC DETERMINANTS
FOR K88 AND K99 ANTIGENS..... Hong Mengmin *et al.* (71)

31. THE INFLUENCE OF CURRENT BACKCROSS ON GRAIN CHARACTERS IN RICE(*ORYZA SATIVA* L.)...Xiong Zhenmin *et al.* (73)
32. EFFECTS OF CADMIUM ON SPERMATOGNIC CELLS OF MALE MICE..... Jiang Yaoqing *et al.* (75)
33. GENETIC ANALYSIS OF LARVAL PHOTORECEPTORS IN *DROSOPHILA*Keng Zhengcheng Yoshiki Hotta (77)
34. THE GEOGRAPHICAL DISRIBUTION PATTERN OF PELMENTS IN *DROSOPHILA MELANOGASTER* CHINESE POPULATION.....Hu Kai (79)
35. THE EFFECT OF DISULPHIDE GROUP ON THE CONFORMATION OF HOMAN SERUM ALBUMIN..... Li Zhixun Cai Wucheng (81)
36. A CORRELATION BETWEEN PHOTOCYCLE AND PHOTO-ELECTRIC RESPONSE SIGNAL OF BACTERIORHODOPSIN MONOMERS.....Tan Manqi *et al.* (83)
37. THE TRANSFER OF PLASMID THROUGH CELL FUSION BETWEEN *BACILLUS SUBTILIS* Jiang Xingjuan *et al.* (85)
38. ISOLATION AND ATTENUATION OF RUBELLA VIRUS..... Zhao Kai *et al.* (87)
39. THE STUDY OF EFFECTS ON STRONGLY-BOUND MANGANESE OF OXYGEN EVOLVING COMPLEX IN WHEAT CHLOROPLASTS BY EPR Sun Qi Lue Changmei (89)
40. PROTOPLAST ISOLATION, CULTURE AND PLANT REGENERATION FROM MESOPHILL CHLLS IN *PHASEOLUS ANGULARIS*, WHITE Ge Koulin *et al.* (91)
41. INVESTIGATION ON ANTENAL DIAGNOSIS DOWN SYNDROME KARYOTYPE AND AMINO-ACID...Liang Zhicheng Dai Yun (93)
42. GENOTOXIC STUDIES ON GOSSYPOLZhang Zhongshu Wang Renlin (95)
43. STUDIES ON THE GENETIC EFFECTS OF CONTRACEPTIVE PROGESTIN NO. 1 BY USING THE FRUIT FLY *DROSOPHILA MELANOGASTER*..... Zhu Dingliang *et al.* (97)
44. ISOLATION AND PROPERTIES OF RESTRICTION ENDONUCLEASES *BstFI* AND *BstYI* FROM *BACILLUS STEAROTHERMOPHILUS* Chen Zhongfu Kong Huimin (99)
45. CALLUS INDUCTION AND PLANTETS IN GRAPEVINES..... Wang Yunzhu *et al.* (101)
46. DETECTION OF PLASMID DNA IN INDUSTRIAL MICROORGANISMS..... Lei Zhaozu *et al.* (103)
47. GENETIC ANALYSIS OF MINOR GENE RESISTANCE TO

- BLAST IN JAPONICA RICE.....Lin Shihcheng (105)
48. ISOLATION AND CHARACTERIZATION OF METHANOBRE-
VIBACTER STRAIN HX..... Xu Baoxiao *et al.* (107)
49. HYBRID FORMATION OF A CHINESE HAMSTER CELL LINE
AND HUMAN LYMPHOCYTES AND ITS IDENTIFICATION...
.....Qiu Xinfang (109)
50. STUDIES ON THE HUMAN GENE MAPPING.....Xue Jinglun (111)
51. ISOLATION OF BIOLOGICAL RHYTHMS GENE AND SOME
FEATURES OF THE CHLOROPLAST GENOME OF THE
GREEN ALGA ACETABULARIA MEDITERRANEA.....Chai Jianhua (113)
52. STUDIES ON THE STRUCTURAL REARRANGEMENT OF
HUMAN TK GENE AND TK cDNA DURING THE PROCESS OF
DNA TRANSFECTION.....Zhao Shouyuan (115)
53. CYTOGENETIC STUDIES OF SESQUIPOID AND SESQUIT-
ERAPLOID IN BRASSICA..... Yuan Miaobao *et al.* (117)
54. STUDIES ON PLASMID AND TRANSPOSON... Zheng Zhaoxin *et al.* (119)
55. CLONING AND DELIMITING ONE CHLOROPLAST DNA RE-
PLICATIVE ORIGIN OF CHLAMYDOMONAS... Wang Xunming *et al.* (121)
56. HOMOLOGOUS 14q14q ROBERTSONIAN TRANSLOCATION
IN MAN..... Zhou Huangeng *et al.* (123)
57. MOSAIC EVOLUTION OF REGULATION AND CONTROL
SYSTEM IN THE GENUS OF BEES.....Zhang De An (125)
58. STUDY ON ISOLATION AND APPLICATION OF TRANSLO-
CATION IN CULEX PIPIENS PALLENS COQ..... Huang Pinjian (127)
59. THE EFFECT OF DOMINANT LETHALS INDUCED BY IONI-
ZING RADIATION AND CHEMICAL IN MALE MICE.....
.....Liu Mingzhe *et al.* (129)
60. DETECTION OF SISTER CHROMATID EXCHANGES IN
MOUSE SPERMATOGONIA IN VIVO Lu Qun *et al.* (131)
61. A STUDY ON CHINESE PHENYLALANINE HYDROXYLASE
GENE RESTRICTION SITE POLYMORPHISM.....Zeng Yitao *et al.* (133)
62. BREEDING AND UTILIZATION OF THE "80"-ROCK STRAIN
WITH THE RECESSIVE GENE OF WHITE PLUMAGE.....
.....Guan Zhen *et al.* (135)
63. THE CLONING OF YEAST SUC2 GENE..... Li Yuyang *et al.* (137)
64. THE PATHOGEN OF RICE PURPLE SHEATH DISEASE
SAROCIADIUM SINENSE Chen Jidi Zhang Guochun (139)
65. RECENT STUDIES ON THE NITROGEN FIXATION...Hong Guofang (141)
66. DYNAMIC CHANGES OF INFORMATIONAL MACROMOLEC-

- ULES IN LEAVES OF HSIEN-TYPE HYBRID RICE DURING
THE COURSE OF THEIR SENESCENCE..... Wu Guangnan *et al.* (143)
67. THE PRESERVATION OF GERM PLASM RESOURCES.....
..... Zhang Hungmo (145)
68. IDENTIFICATION OF DNA SEQUENCES INVOLVED IN HOST
SPECIFICITY IN THE PATHOGENESIS OF *PSEUDOMONAS*
SOLANACEARUM STRAIN T2005..... Ma Qingsheng (147)
69. FUNGUS DISEASES OF RICE IN CHINA..... Sun Shuyuan (149)
70. CLONING OF THE K88_{ac} ANTIGEN GENE OF ENTEROTOX-
IGENIC *E. COLI*..... Zhang Linyuan (151)
71. STUDY OF TWIST DISEASE AND ITS PATHGENIC AGENT
OF *HYPOPHTHALMICHTHYS MOLITRIX* IN HANGZHOU
REGION OF ZHEJIANG PROVINCE..... Wu Baohua *et al.* (153)
72. NEW COTTON VARIETY "WAN"73-10..... Liu Chayu (155)
73. REGULATION OF MERCURIC RESISTANCE GENE EXPRES-
SION IN PLASMID R100.1..... Dai Xiuyu *et al.* (157)
74. A STUDY ON FORECASTING THE FLIGHT-DISPERSION OF
APHIDS ON CRUCIFEROUS CROPS..... Kuan Chihhu Li Wentsao (159)
75. ON THE ORIGATION AND EVOLUTION OF *SEQUOIA*
SEMPERVRENS..... Li Linchu (161)
76. A NEW SPECIES OF *DROSOPHILA* (*SOPHOPHORA*) FROM
CHINA (*DIPTERA*, *DROSOPHILIDAE*).....
..... Chen Huazhong Toyohi Okada (163)
77. INTERACTIONS AMONG HUMAN PERIPHERAL BLOOD
LYMPHOCYTES, ADHERENT CELLS AND SERUM IN THE
RESPONSE TO PHA *IN VITRO*..... Chou Kuangyen *et al.* (165)
78. EXTRACTION OF NATURAL CYTOTOXIC FACTOR FACUOR
FROM THE SERUM..... Yang Shuqing *et al.* (167)
79. PRELIMINARY STUDIES ON THE RELATIONSHIP BETWEEN
MICRONUCLEUS FORMATION AND CELL CYCLE*.....
..... Xue Kaixian *et al.* (169)
80. THE CRYSTALIZATIONS OF FRACTION I PROTEIN IN
LEAVES OF *BRASSICA NAPUS* AND *NICOTINA TOBACUM*
..... Ying Yanru *et al.* (171)
81. COMPARATIVE STUDIES ON G- AND C-BANDED CHROMO-
SOMES OF THREE SUBSPECIES OF STUM-TAILED MONKEY
(*MACACA SPECIOSA*) Chen Yifeng *et al.* (172)
82. CHARACTERIZATION OF A TRANSPOSON T_n 2981 IN
ESCHERICHIA COLI..... Chen Xiaokang *et al.* (175)

83. SYNAPTONEMAL COMPLEX FORMATION AMONG SUPERNUMERARY B CHROMOSOMES; AN ELECTRON MICROSCOPIC STUDY ON SPERMATOCYTES OF CHINESE RACCOON DOGS..... Shi Liming *et al.* (177)
84. GRANULOMA POUCH ASSAY (GPA) INDUCTION OF SISTER CHROMATID EXCHANGES AND 6-TG' *IN VITRO/IN VIVO* BY GOSSYPOL ACETATE*..... Tan Yongbu Ding Yinuo (179)
85. CLONING AND EXPRESSION OF TWO α -AMYLASE GENE FROM *BACILLUS STEAROTHERMOPHILUS* IN *E. COLI*..... Ren Daming *et al.* (181)
86. THE PARAMETERS FOR QUANTITATIVE ANALYSIS OF MUTATION RATES WITH CULTURED MAMMALIAN SOMATIC CELLS.....Fu Jiliang *et al.* (183)
87. STUDIES ON NK CELL-TARGET INTERACTIONS*..... Feng Meifu *et al.* (185)
88. TRANSPOSITION PROPERTIES OF TN2 IN *E. COLI*..... Wang Aoquan *et al.* (187)
89. GENE MAPPING ON MAIZE PACHYTENE CHROMOSOMES BY *IN SITU* HYBRIDIZATIONShen Daleng Madeling Wu (189)
90. USE OF HUMAN ERYTHROCYTE GHOSTS FOR TRANSFER OF ^{125}I -BSA AND ^{125}I -DNA INTO ANIMAL CELLS THROUGH CELL FUSION.....Li Changben *et al.* (191)
91. AMNIOTIC FLUID EXAMINATION FOR THE PRENATAL DIAGNOSIS OF ANOMALIES IN 521 CASES..... Chang Yuzhe (193)
92. A KARYOLOGICAL STUDY IN THE GENUS *LYCORIS*..... Huang Shaofu (195)
93. 47, XY, +18q-, +DM(DOUBLE MINUTE)KARYOTYPE WITH MULTIPLE ANOMALIES AND MENTAL RETARDATIONREPORT OF A CASE Jin Xiaolan Wu Wenyan (197)
94. RESTRICTION ENZYME CLEAVAGE MAP OF THE PLASMID PFD101 FROM *BACILLUS STEAROTHERMOPHILUS*.....Zhang Junkai *et al.* (199)
95. STUDIES ON THE HOMOCYSTEINEMIA AND CORONARY ARTERY DISEASE.....Zhou Jiemin *et al.* (201)
96. STUDIES ON THE NEUROMUSCULAR FUNCTION OF A FLIGHTLESS MUTANT 6148 IN *DROSOPHILA MELANOGASTER* Wang Denan *et al.* (203)
97. THE EVOLUTIONAL RELATIONSHIP OF TUPAI AS VIEWED FROM THE INTERSPECIFIC MOLECULAR HYBRIDIZATION

- OF HEMOGLOBIN..... Zhang Bei *et al.* (205)
98. ISOLATION OF HUMAN MINISATELLITE DNA PROBE AND
STUDY OF DNA 'FINGER-PRINTS' Hong Xiankang *et al.* (207)
99. ISOLATION AND CHARACTERIZATION OF OUABAIN
RESISTANT MUTANTS OF CHINESE HAMSTER CELL (Wg3-h)
..... Qi Ming *et al.* (209)
100. MITOCHONDRIAL DNA POLYMORPHISM IN CHINESE
..... Yu Minshu *et al.* (211)
101. REGIONAL ASSIGNMENT OF HUMAN ALCOHOL DEHYDR-
OGENASE (ADH) GENE TO 4pter 4q21..... Xu Yiling *et al.* (213)
102. THE DISTRIBUTION OF P ELEMENTS IN *D. MELANOGAS-*
TER ALONG THE COAST OF CHINA STUDIED BY DNA
HYBRIDIZATION METHOD..... Lai Fang *et al.* (215)
103. ESTABLISHMENT OF A HUMAN/CHINESE HAMSTER
HYBRID CLONE PANEL Xu Yun *et al.* (217)
104. CLONING AND EXPRESSION OF AN ALKALINE PROTEASE
GENE FROM *BACILLUS LICHENIFORMIS* IN *BACILLUS*
SUBTILIS He Chaogang *et al.* (219)
105. THE CELL-CYCLE DEPENDENT AND THE DNA-DAMAG-
ING AGENT-INDUCED CHANGES OF CELLULAR NAD
CONTENT AND THEIR SIGNIFICANCE Dai Yifan *et al.* (221)
106. MUTAGENIC EFFECTS OF N-METHYL-N'-NITRO-NITRO-
SOGUANIDINE (MNNG) AND ETHYL METHANESULFON-
ATE(EMS) ON CHLOROQUINE RESISTANCE IN *PLASMO-*
DIVM BERGHEI ANKA STRAIN Yao Shouan Guan Weibin (223)

面包酵母菌株BII的呼吸缺陷 突变的遗传性质*

陈士怡** B. 埃弗鲁西 E. 沃丹格

(国立科学研究中心遗传研究所和巴黎物化生物研究所)

在酿酒酵母 *Saccharomyces cerevisiae* 菌株B II 中,常常出现缺某些呼吸酶的“小菌落”,它们出现在营养繁殖过程,也同样出现在减数分裂过程中,前者叫作“营养小菌落”,后者叫作“分离小菌落”。突变型孢子出现的频率约为 44%,接近 1/2,令人怀疑是否这菌株是一对基因的杂种一代,即这突变性状受控于一孟德尔型突变基因。

在正常菌落(“大”, B-15), 从这株选出的营养小菌落(小, B-15-P4)和分离小菌落(小, B26)这三株间,进行两个可能的杂交,所得结果如下:

(a) B-15 大菌落和 B-26 分离小菌落杂交,产生正常大菌落的二倍体细胞,形成子囊包含两“大”的孢子和两“小”的孢子。这说明分离小菌落性状是由于一单一的孟德尔式隐性基因所决定。

(b) 营养小菌落 B-15-P4 和分离小菌落 B-26 杂交,也同样产生正常大菌落的二倍体细胞,也形成包含两“大”两“小”的孢子的子囊。

所以,在这个杂交中,两个突变细胞的融合导致重建一个正常的细胞。这首先表明,两个表型相同的细胞,在这个杂交中,掩盖着不同的基因型。其次, 这明这两个菌株除基因对之外还有别的因素。

这些结果导出下列的解释:营养小菌落不同于“大”的或正常的是由于遗失了细胞质因素,它在形成呼吸酶中是必需的;分离小菌落同正常的相异是由于一个隐性基因,它的存在使细胞质因素失活。

为了验证这个假设,进行了七个不同形式杂交,特别是验证其推理,即营养小菌落和“大”的正常的具有同样的基因型。这些杂交的子囊中的分离子,其基因型正如上述假设所预期的。然而,也观察到一些例外的表型。这些表型的进一步分析,仍然导致自我繁殖的细胞质因素的假说。

总之,本工作的初步结论,在酵母细胞中某些呼吸酶的合成,同时需要一细胞质中自我繁殖的因素和一显性基因。

* HEREDITY, Volume 4, Part 3, pp.337—351, Dec. 1950.

** 现在杭州大学生物系

NATURE GENETIQUE DES MUTANTS A DEFICIENE RESPIRATOIRE DE LA SOUCHE B-II DE LA LEVURE DE BOUANGERIE*

Chen Shihyi Boris Ephrussi Helene Hottinguer

(Institut de Génétique du C.N.R.S. et Institut de Biologie physico-chimique, Paris)

1. In the strain "Boulangerie II" of *Saccharomyces cerevisiae* mutants often appear which lack certain respiratory enzymes ("little colony" or "little"). They arise in the course of vegetative reproduction ("vegetative littles") as well as following meiosis (segregational littles). The frequency of the mutant spores is about 44 per cent, i.e. so close to $1/2$ that the question was raised as to whether the strain is heterozygous for a gene pair, and the mutant character controlled by a mendelian gene.

2. A study of the two crosses possible between a normal clone ("big," B-15), a "vegetative little" (B-15-p4) derived from it, and a "segregational little" (B-26), has given the following results:

(a) The cross of "big" B-15 with the "segregational little" B-26 gives rise to normal diploid cells which form asci containing 2 "big" and 2 "little" spores.

Consequently, the character "little" is due to a single mendelian recessive gene in the "segregational littles."

(b) The cross between the "vegetative little" B-15-p4 and the "segregational little" B-26 also gives normal diploid cells, the asci from which likewise contain 2 "big" and 2 "little" spores.

Thus, in this cross, the fusion of two mutant cells leads to the reconstitution of a normal cell. First of all this shows that the two phenotypically identical cells used in the cross conceal different idiosyncrasies. Secondly it demonstrates that the two strains differ from each other by something other than the gene pair whose segregation takes place in the F_1 asci.

3. These results have led to the following interpretation: the "vegetative littles" differ from the "big" or normals by the loss of a cytoplasmic factor which is necessary for the synthesis of certain respiratory enzymes; the "segregational littles" differ from normals by a single recessive gene in the presence of which the cytoplasmic factor is inactive.

4. Seven different kinds of crosses were undertaken in order to test this hypothesis, and in particular its corollary, according to which the "vegetative littles" and the "big" have the same genotypes. The genotypes of the segregants in the asci of these crosses were found to be those predicted by the above hypothesis. However, some exceptional phenotypes were observed, study of which has again led to the postulation of a self-reproducing cytoplasmic factor.

5. As a whole, the present work leads to the conclusion that the synthesis of certain respiratory enzymes in yeast requires the simultaneous presence of a self-reproducing cytoplasmic factor and a dominant gene.

* HEREDITY, Volume 4, part 3 pp.335-137 December 1950