

# **OBSERVATIONS**

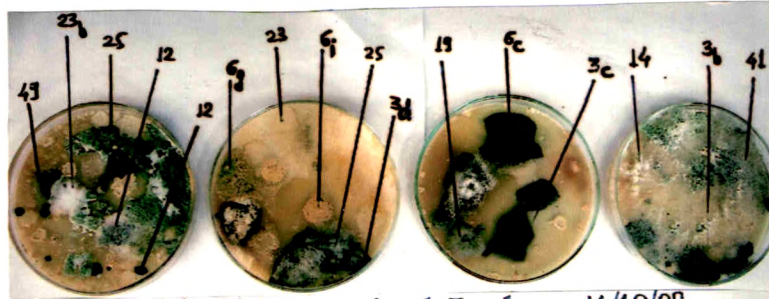
**EXPLANATION OF PLATE FIGURES 1-15.**

1. *Actinomyces israelii* (Harz.) Kruse.
2. *Allescheriella* sp.
- 3a. *Alternaria carthami* Chowdhury.
- 3b. *Alternaria helianthi* Tubaki. and Nishihara.
- 3c. *Alternaria macrospora* Zimm.
- 3d. *Alternaria passiflorae* Simmonds.
4. *Ampulliferina persimplex* Sutton.
5. *Arthrobotryum atrocephalum* Sutton.
- 6a. *Aspergillus alliaceous* Thom. and Church..
- 6b. *Aspergillus flavus* Link.
- 6c. *Aspergillus nanus* Mont.
- 6d. *Aspergillus rugulosus* Thom. and Raper.
- 6e. *Aspergillus sclerotiorum* Huber.
- 6f. *Aspergillus stelatus* Curzi.
- 6g. *Aspergillus unguis* (Emil-Weil and Gaudin.) Thom. and Raper.
- 6h. *Aspergillus ustus* (Bainier.) Thom. and Church.
- 6i. *Aspergillus versicolor* (Vuill.) Tiraboschi.
- 6j. *Aspergillus wenti* Wehmer.
7. *Baccilispora aquatica* Sv. Nilsson.
8. *Blastomyces dermatitidis* Gilchrist. and Stokes.
- 9a. *Candida albicans* (Robin.) Berkout.
- 9b. *Candida stellatoidea* Jones. and Martin.
10. *Catenophora pruni* Luttr.
11. *Chaetophoma confluens* ( Pers. Ex. fr.) Kummer.
12. *Cladochytrium replicatum* Karling.
- 13a. *Cladosporium chlorocephalum* (Fresen.) Mason. and M.B. Ellis.
- 13b. *Cladosporium herbarum* (Pers.) Link. ex.S.F. Gray.
- 13c. *Cladosporium spongiosum* Berk. and Curt.
14. *Colletotricum lindemutheanum* bei. der. Bohne. erreichte.
15. *Coniosporium memorandum* (Penz. and Sacc.) M.B.Ellis.
16. *Curvularia senegalensis* (Speg.) Subram.
17. *Custingophora olivacea* Stock.. Hennebert.
18. *Dendrospora erecta* Ingold.

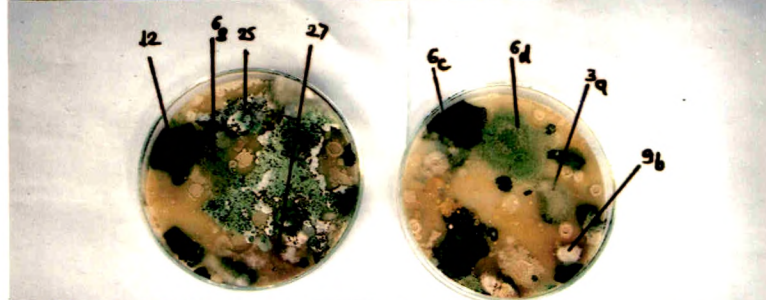
19. *Dichlaena* Dur. and Mont.
- 20a. *Drechsclera austreliensis* (Bugnicourt.) Subram. and Jain. ex. M.B.Ellis.
- 20b. *Drechsclera hawaiiensis* (Bugnicourt.) Subram. and Jain. ex. M.B.Ellis.
21. *Eidamella deflexa* (Berk.) Benjamin.
22. *Fulvia fulva* (Cooke.) Ciferi.
- 23a. *Fusarium solani* (Martius.) Saccardo.
- 23b. *Fusarium oxysporum* Schl. Ex. fries. f.
24. *Gymnoascus ressi* Barnetzki.
25. *Haplosporangium parvum* Emmons. and Ashbum.
26. *Histoplasma capsulatum* Darling.
27. *Humicola grisea* Traaen.
28. *Leptosporomyces galzinii*
29. *Madurella mycetomi* (Laveran.) Brumpt.
30. *Memnoniella echinata* (Riv.) Galloway
31. *Microsporium gypseum* ( Bodin.) Guiart. and Grigorakis.
32. *Mucor disperses* Oagem.
33. *Narasimhella rollandina* Pat.
34. *Nigrospora sphaerica* (Sacc.) Mason.
35. *Nowakowskiella elegans* (Nowak.) Schroeter.
36. *Oidiodendron griseum* Robak.
- 37a. *Penicillium verticillatum* Dangeard.
- 37b. *Penicillium* sp.
- 38a. *Periconia britanica* M. B. Ellis. Spec. nov.
- 38b. *Periconia kambakkamensis* Subram.
39. *Phialophora* sp.
40. *Pithomyces maydicus* (Sacc.) M. B.Ellis.
41. *Pseudotorula heterospora* Subram.
42. *Rhinocladiella callaris* ( Pers. Ex. S. F. Gray.) M.B. Ellis.
43. *Rhizopus stolonifera* (Ehrest.) Lind.
44. *Sarcinella* sp. Saccardo.
45. *Sporithrix schenckii* var. *luriei* Ajello. and Kaplan.
46. *Syringospora* blastospores
47. *Trichosporonoides oedocephalis* Haskins.
48. *Trimmatostroma betulinum* (Corda.) Hughes.

49. *Tripaspermum myrti* (Lind.) Hughes.
50. *Torula ellisii* Yadav. and Lal.
51. *Ulocladium botrytis* Preuss.
52. *Virgaria nigra* (Link.) Ness. ex.. S.F. Gray.
53. Mycelium with chlamyospores.
54. Mycelium with vesicle.

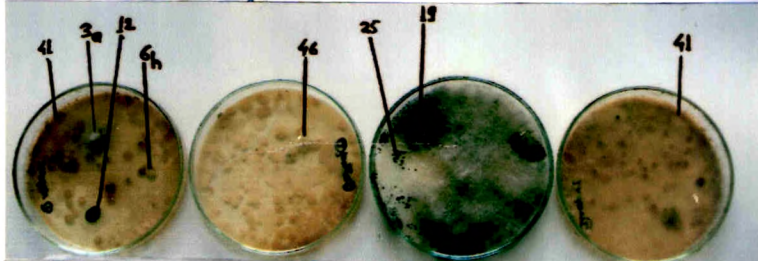
PLATE FIG.NO.1



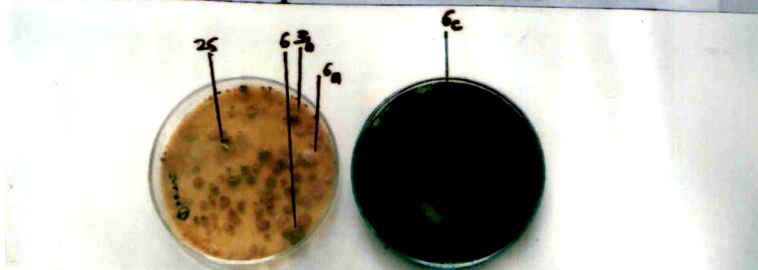
Civil Hospital-Indoor 11/10/06



Civil Hospital-Outdoor 11/10/06



General Hospital - Indoor 26/10/06



General Hospital - Outdoor 26/10/06

PLATE FIG.NO.2

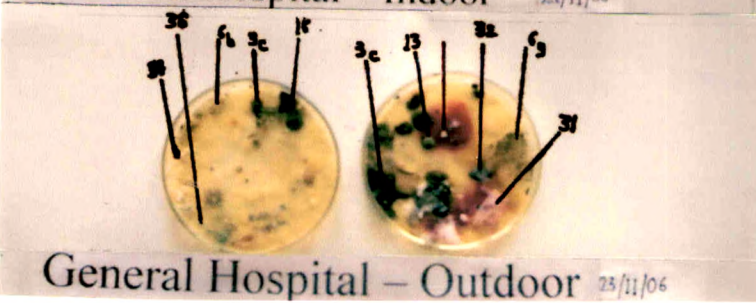
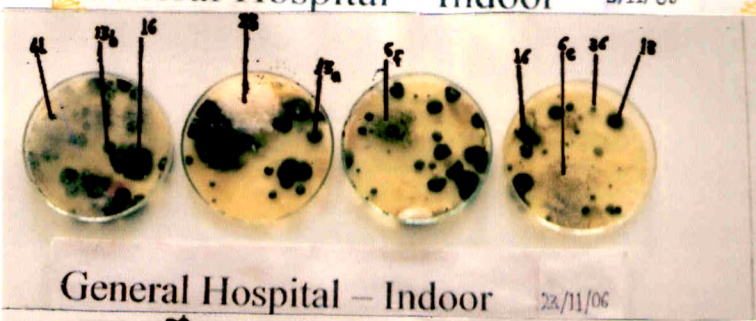
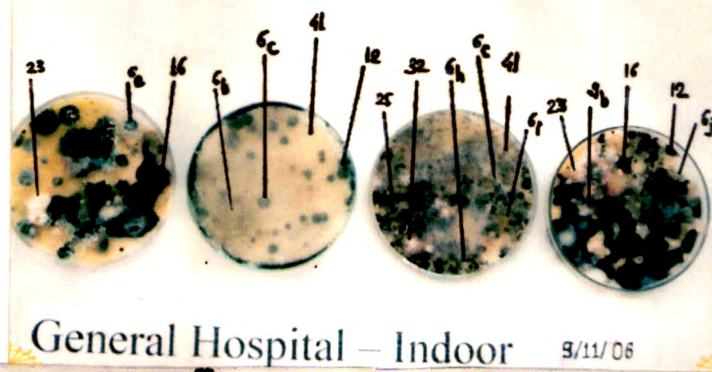
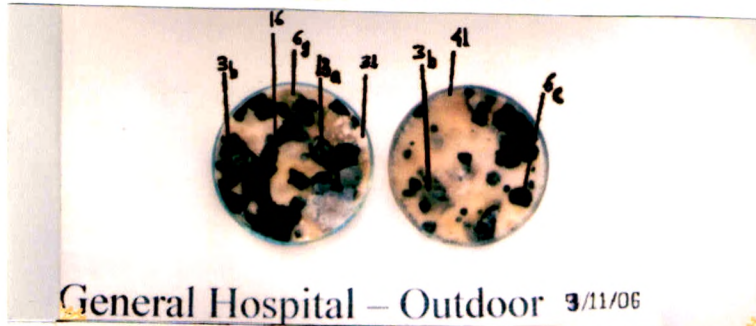
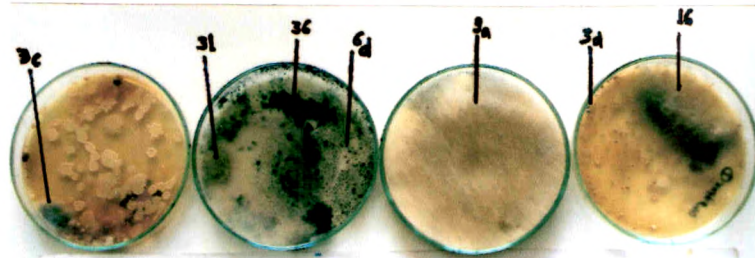
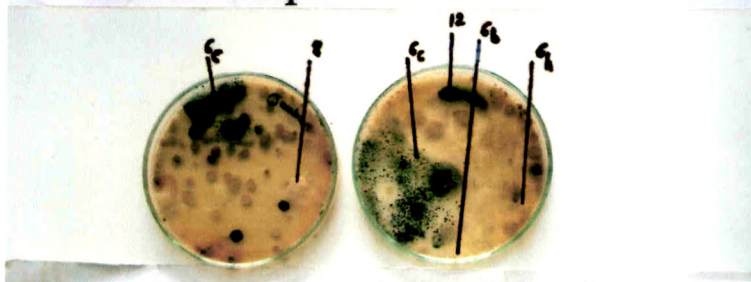




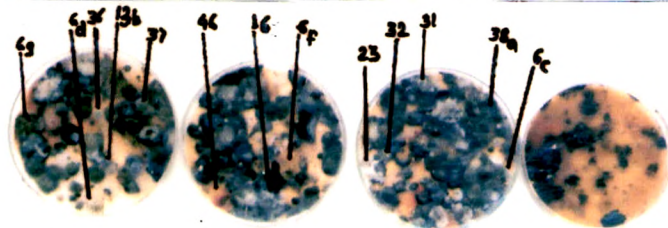
PLATE FIG.NO.3



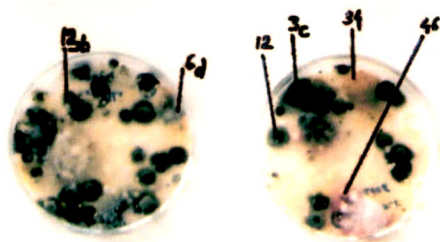
General Hospital – Indoor 3/12/06



General Hospital – Outdoor 3/12/06

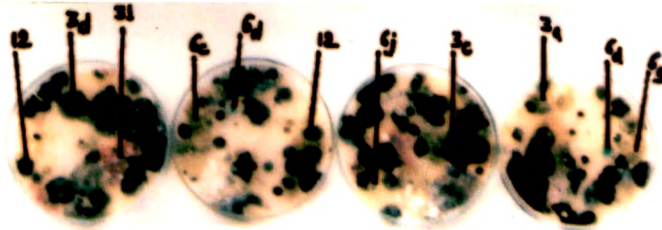


General hospital indoor

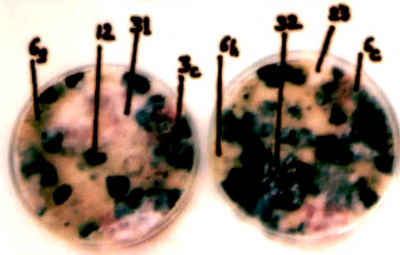


General hospital – outdoor 7/12/06

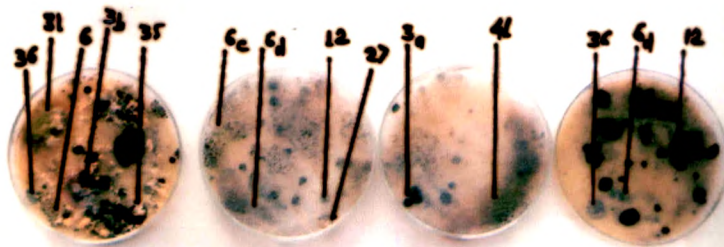
PLATE FIG.NO.4



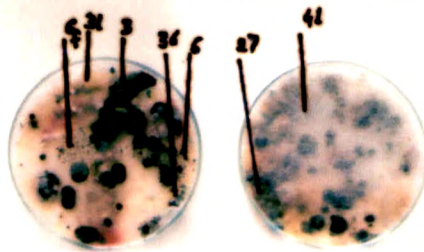
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General Hospital – Outdoor 21/12/06



General Hospital – Indoor 28/12/06



General Hospital – Outdoor 28/12/06



PLATE FIG.NO.5

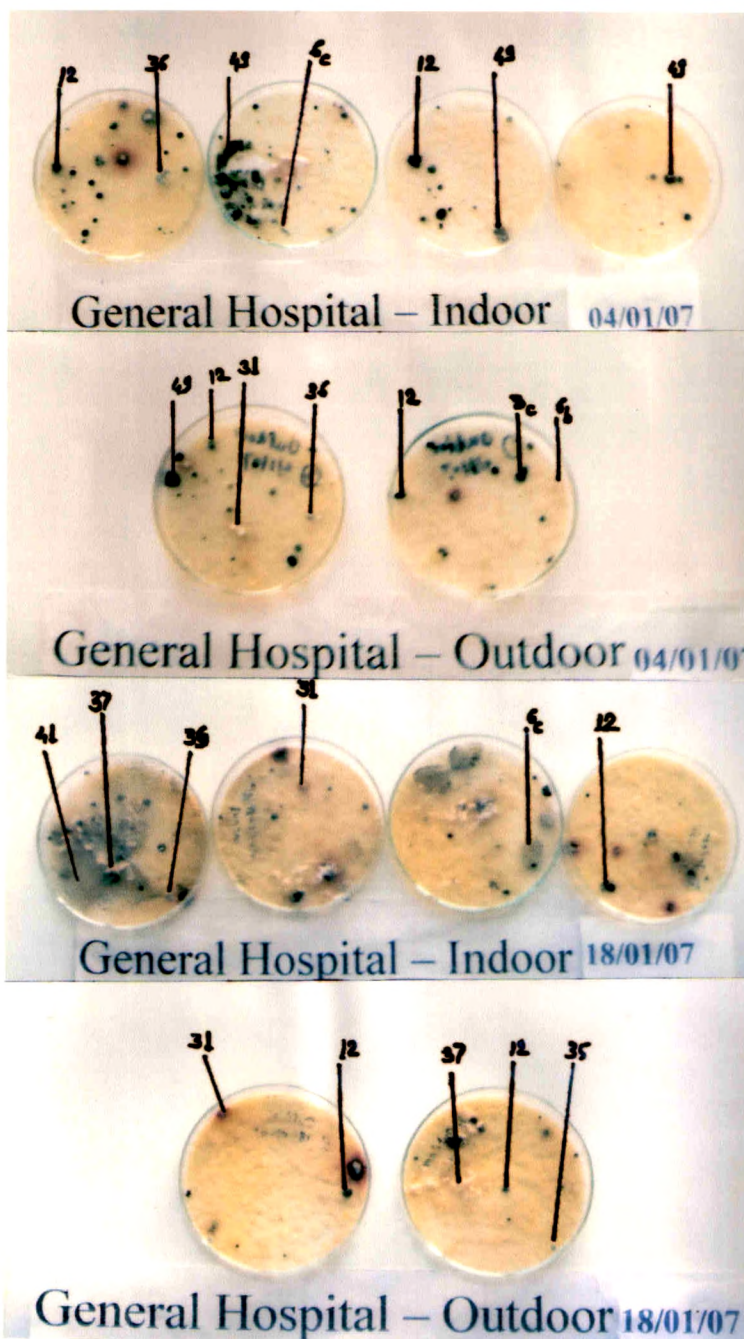


PLATE FIG.NO.6

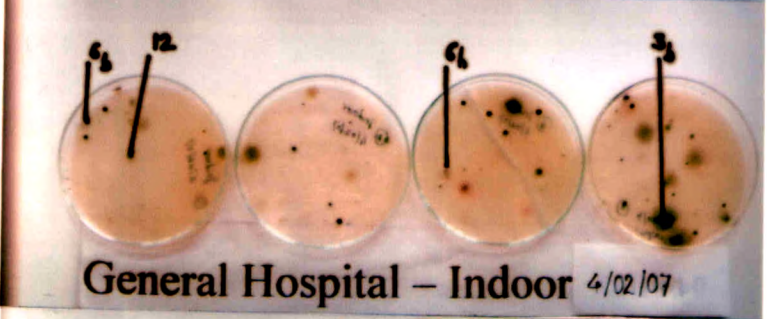
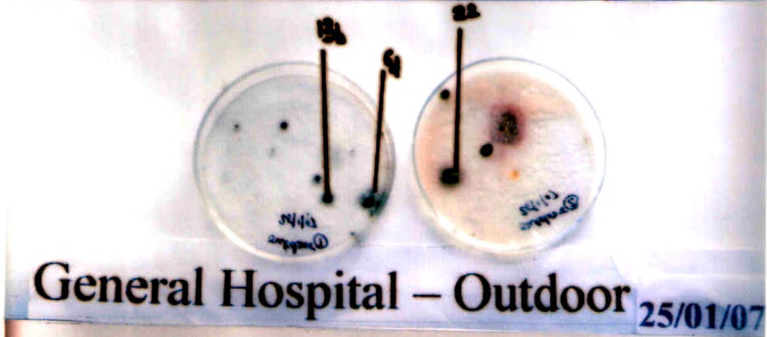
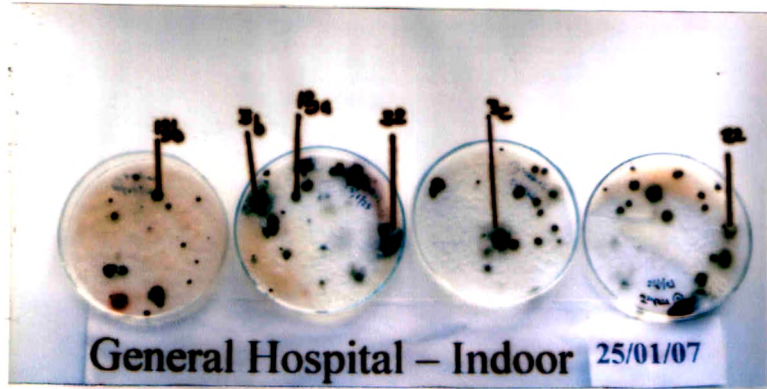
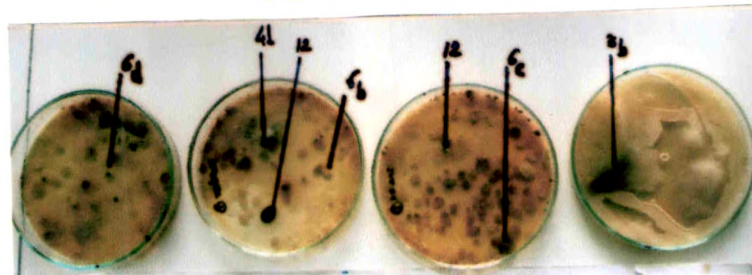
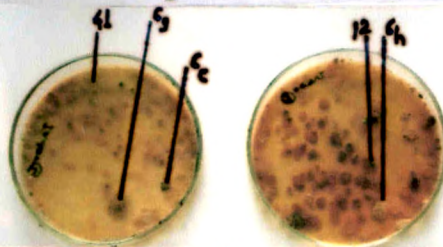


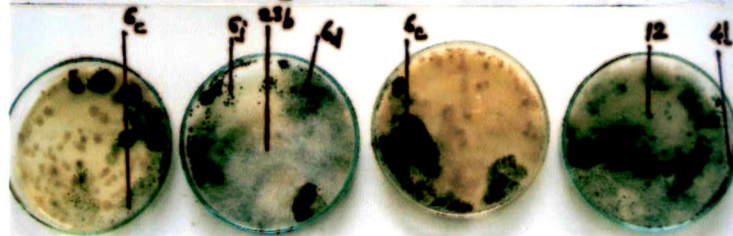
PLATE FIG.NO.7



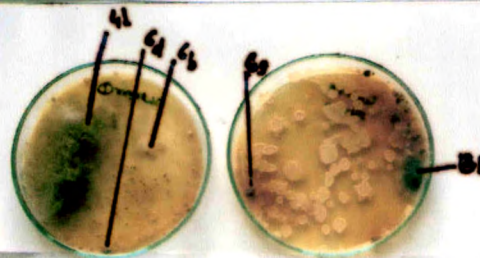
General Hospital – Indoor 15/02/07



General Hospital – Outdoor 15/02/07



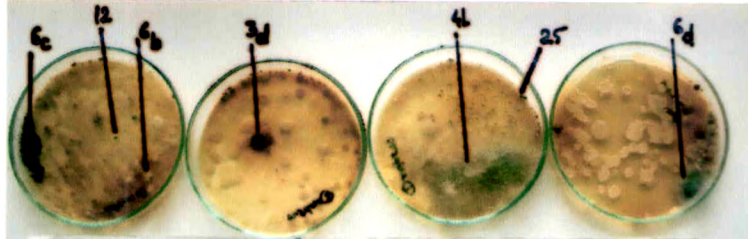
General Hospital – Indoor 08/03/07



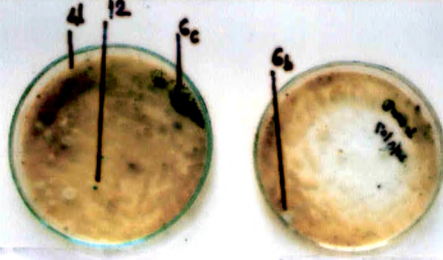
General Hospital – Outdoor 08/03/07



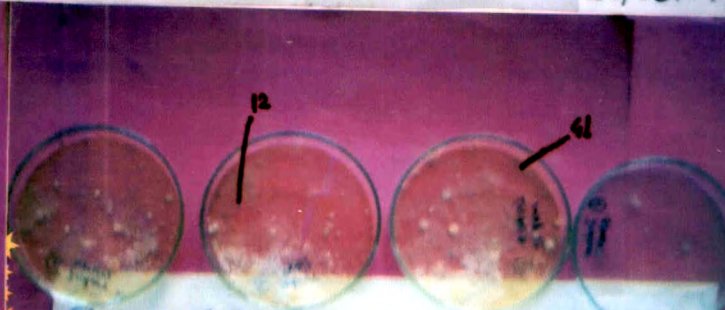
PLATE FIG.NO.8



General Hospital – Indoor 29/03/07



General Hospital – Outdoor 29/03/07

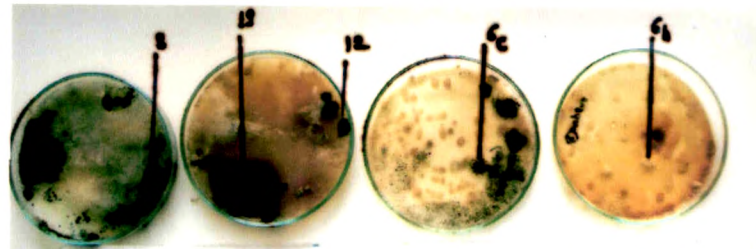


General Hospital – Indoor 07/04/07



General Hospital – Outdoor 05/04/07

PLATE FIG.NO.9



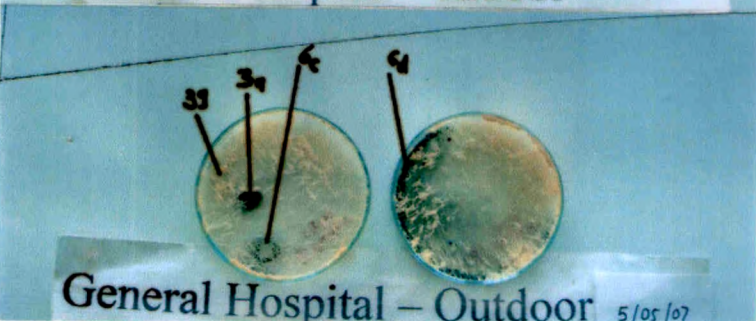
General Hospital – Indoor 26/04/07



General Hospital – Outdoor 26/04/07



General Hospital – Indoor 5/05/07



General Hospital – Outdoor 5/05/07



PLATEFIG.NO.10

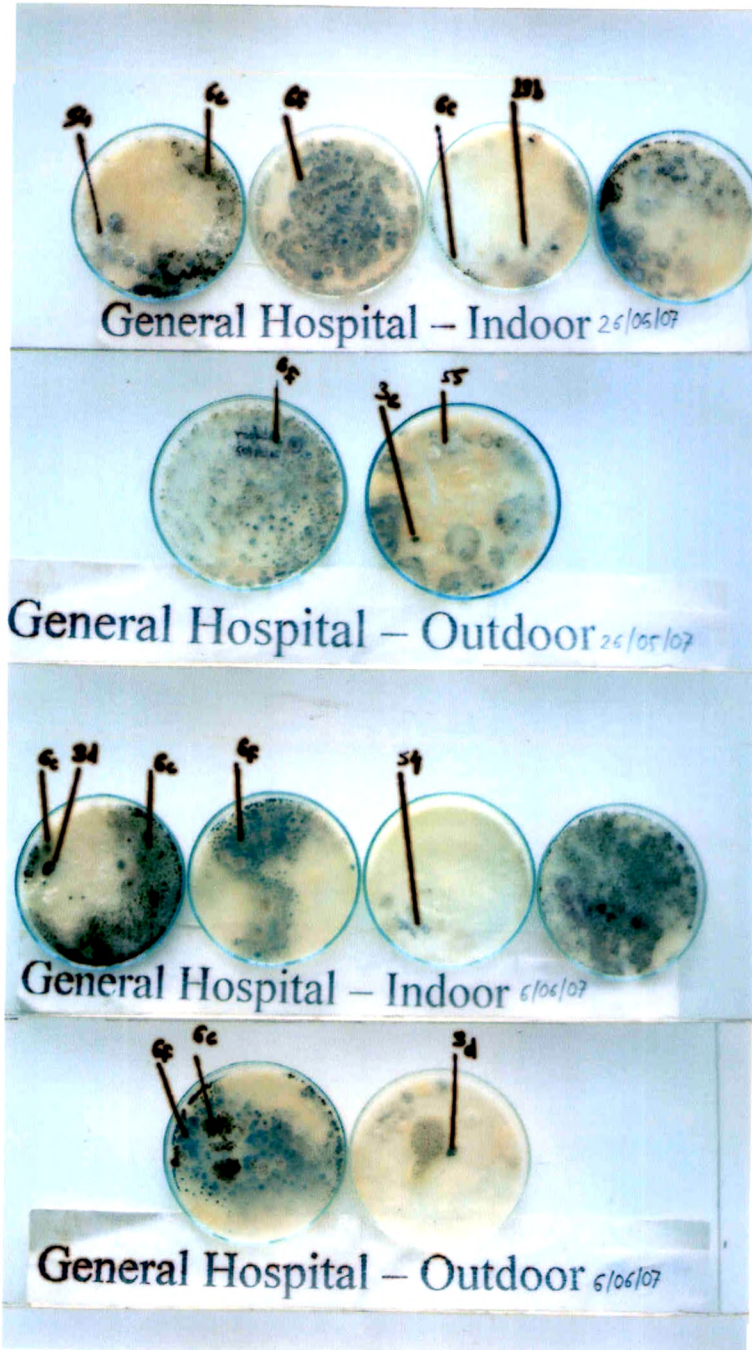




PLATE FIG.NO.11

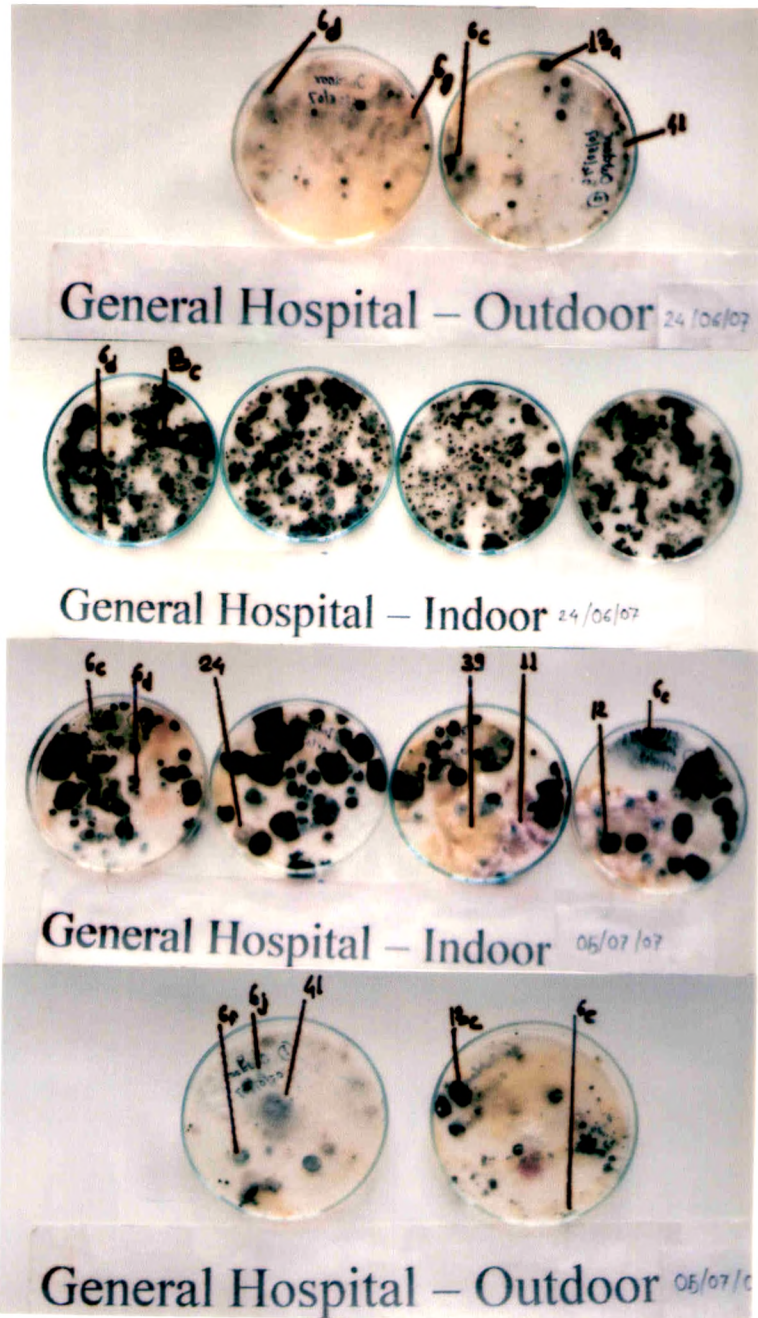


PLATE FIG.NO.12

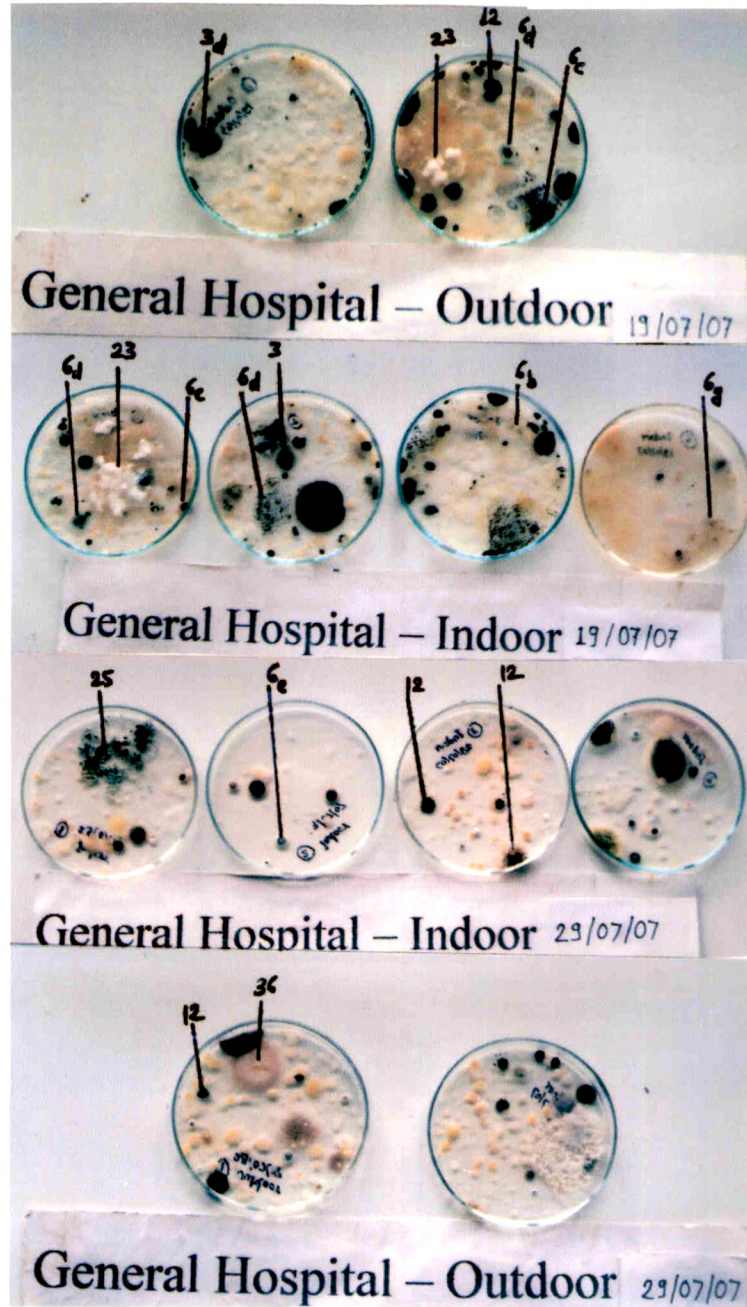
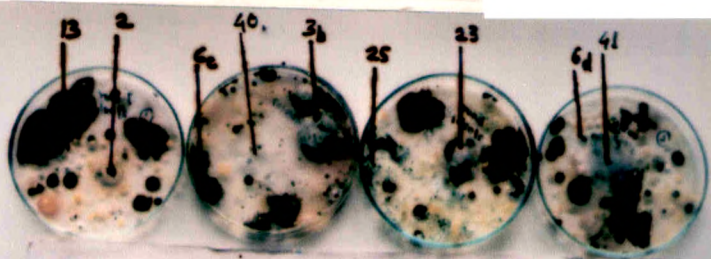
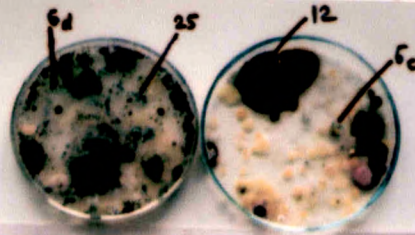




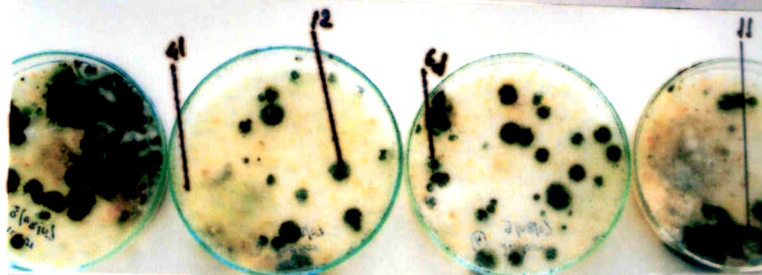
PLATE FIG.NO.13



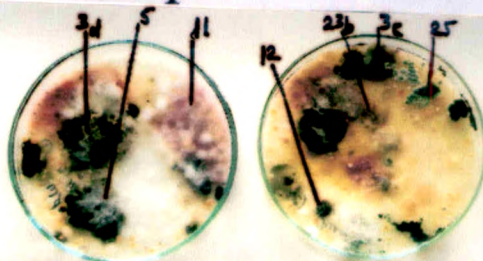
General Hospital – Indoor 02/08/07



General Hospital – Outdoor 02/08/07



General Hospital – Indoor 9/08/07



General Hospital – Outdoor 9/08/07

PLATE FIG.NO.14

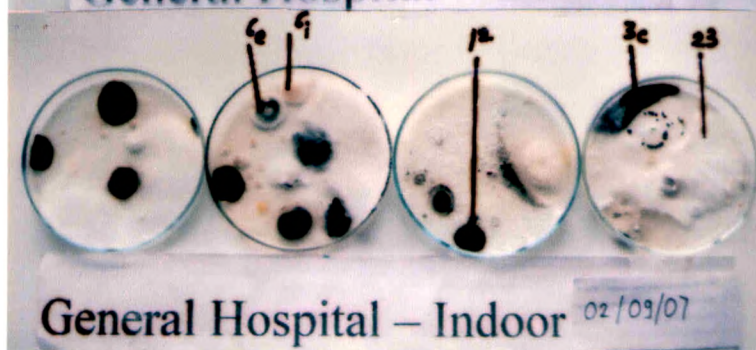
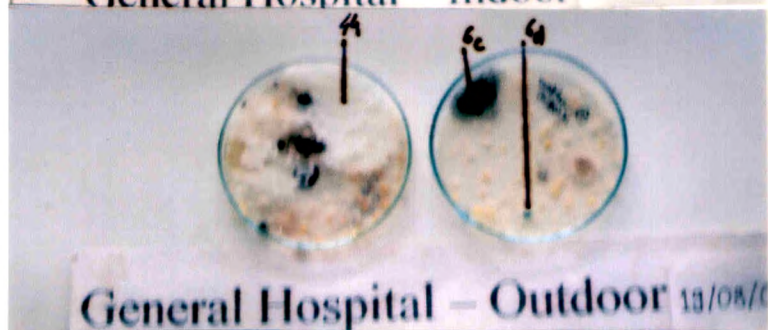
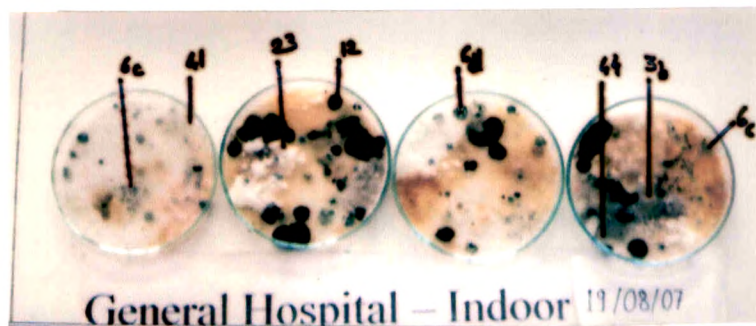
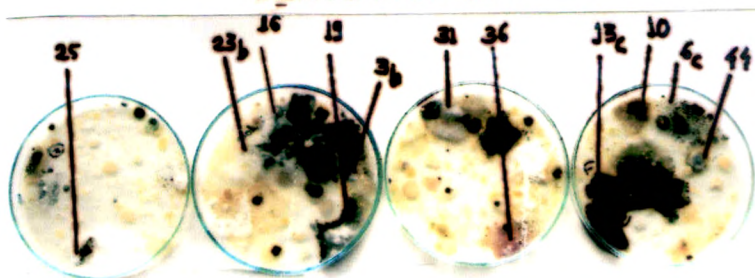
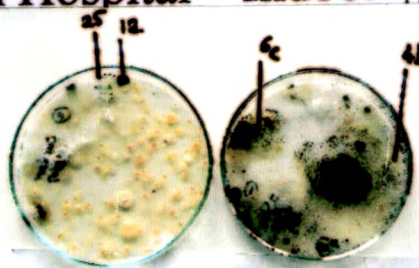


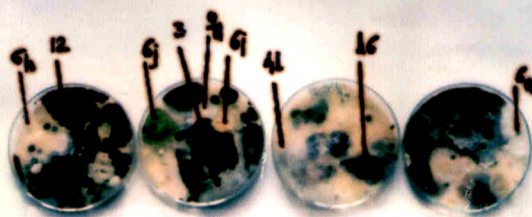
PLATE FIG.NO.15



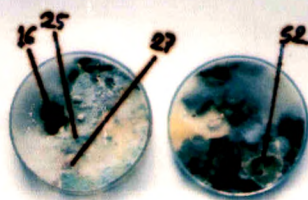
General Hospital – Indoor 17/09/07



General Hospital – Outdoor 17/09/07



General Hospital – Indoor 30/9/06



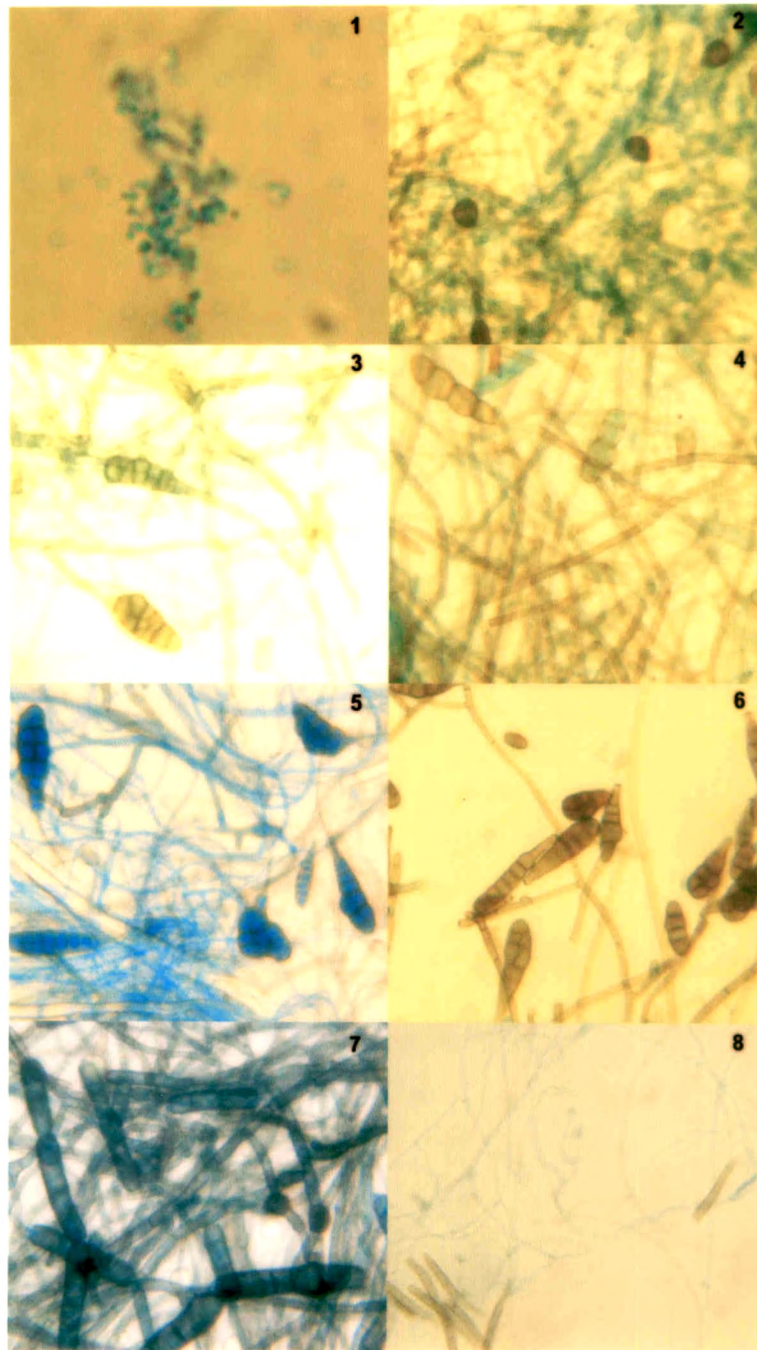
General Hospital – Outdoor 30/9/06

## EXPLANATION OF PLATE FIGS. 1-8.

- Plate Fig. 1. *Actinomyces israelii* (Harz.) Kruse.
- " " 2. *Allescheriella* sp.
- " " 3. *Alternaria carthami* Chowdhury.
- " " 4. *Alternaria helianthi* Tubaki. and Nishihara.
- " " 5. *Alternaria macrospora* Zimm.
- " " 6. *Alternaria passiflorae* Simmonds.
- " " 7. *Ampulliferina persimplex* Sutton.
- " " 8. *Arthrobotryum atrocephalum* Sutton.



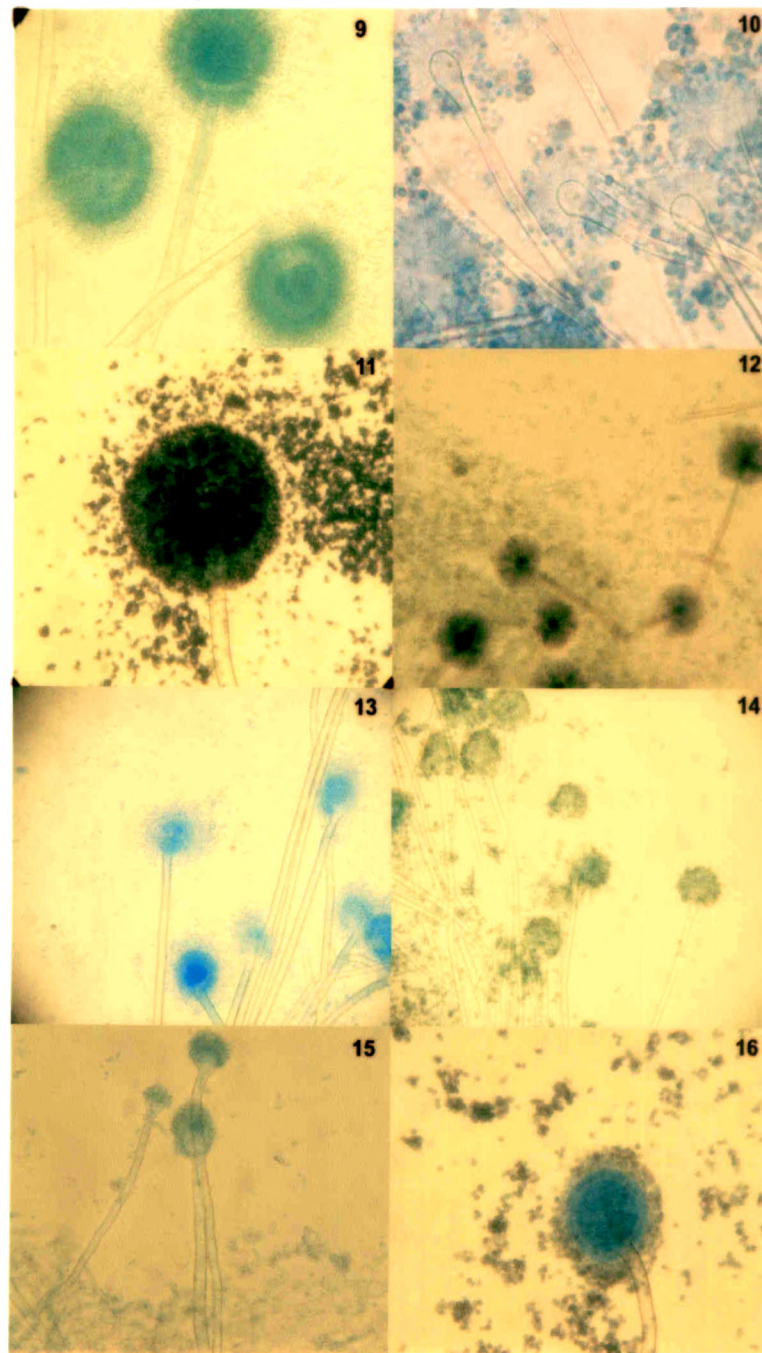
**PLATE FIG. NO. I (Gravity Petridish Method)**  
**Fig. No. 1 to 8**



**EXPLANATION OF PLATE FIGS. 9-16.**

- Plate Fig. 9. *Aspergillus alliaceous* Thom. and Church.
- " " 10. *Aspergillus sclerotiorum* Huber.
- " " 11. *Aspergillus nanus* Mont.
- " " 12. *Aspergillus versicolor* (Vuill.) Tiraboschi.
- " " 13. *Aspergillus ustus* (Bainier.) Thom. and Church.
- " " 14. *Aspergillus rugulosus* Thom. and Raper.
- " " 15. *Aspergillus wenti* Wehmer.
- " " 16. *Aspergillus unguis* (Emil-Weil. and Gaudin.)  
Thom. and Raper.

**PLATE FIG. NO. II (Gravity Petridish Method)**  
**Fig. No. 9 to 16**



## EXPLANATION OF PLATE FIGS. 17-24.

Plate Fig.17. *Aspergillus flavus* Link.

" " 18. *Aspergillus stelatus* Curzi.

" " 19. *Baccilispora aquatica* Sv. Nilsson.

" " 20. *Blastomyces dermatitidis* Gilchrist. and Stokes.

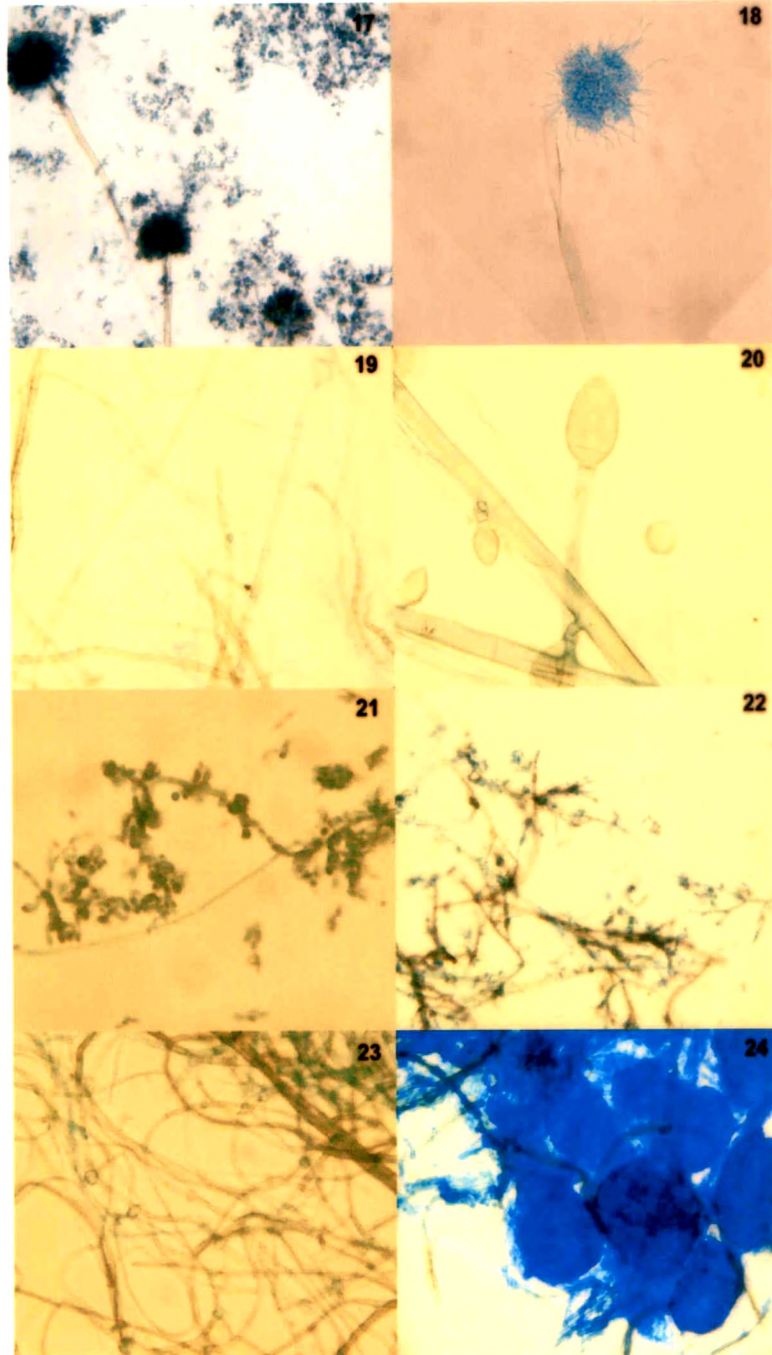
" " 21. *Candida albicans* (Robin.) Berkout.

" " 22. *Candida stellatoidea* Jones. and Martin.

" " 23. *Catenophora pruni* Luttr.

" " 24. *Chaetophoma confluens* (Pers. Ex. fr.) Kummer.

**PLATE FIG. NO. III (Gravity Petridish Method)**  
**Fig. No. 17 to 24**

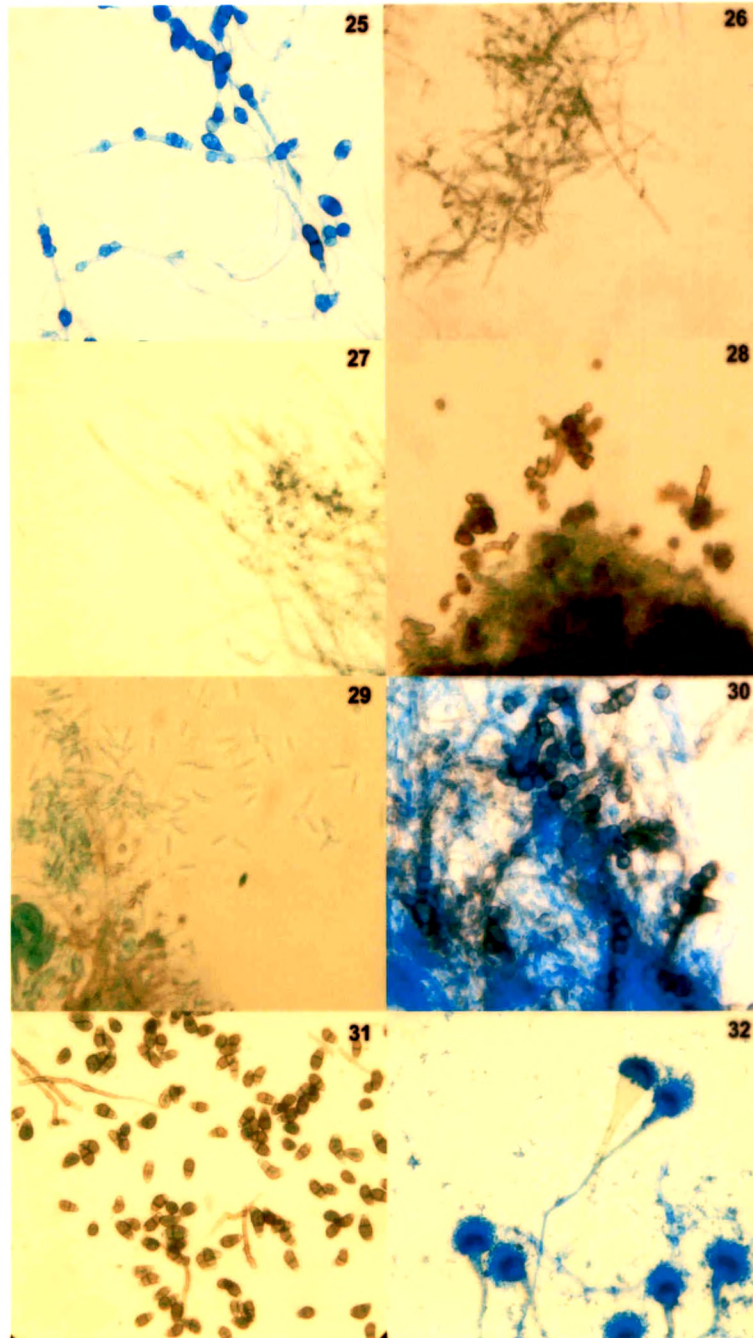


## EXPLANATION OF PLATE FIGS. 25-32

- Plate Fig.25. *Cladochytrium replicatum* Karling.
- " " 26. *Cladosporium chlorocephalum* (Fresen.) Mason. and  
M.B. Ellis.
- " " 27. *Cladosporium herbarum* (Pers.) Link. ex. S. F. Gray.
- " " 28. *Cladosporium spongiosum* Berk. and Curt.
- " " 29. *Colletotricum lindemutheanum* bei. der. Bohne.  
erreichte.
- " " 30. *Coniosporium memorandum* (Penz. and Sacc.)  
M.B.Ellis.
- " " 31. *Curvularia senegalensis* (Speg.) Subram.
- " " 32. *Custingophora olivacea* Stock. Hennebert.



**PLATE FIG. NO. IV (Gravity Petridish Method)**  
**Fig. No. 25 to 32**

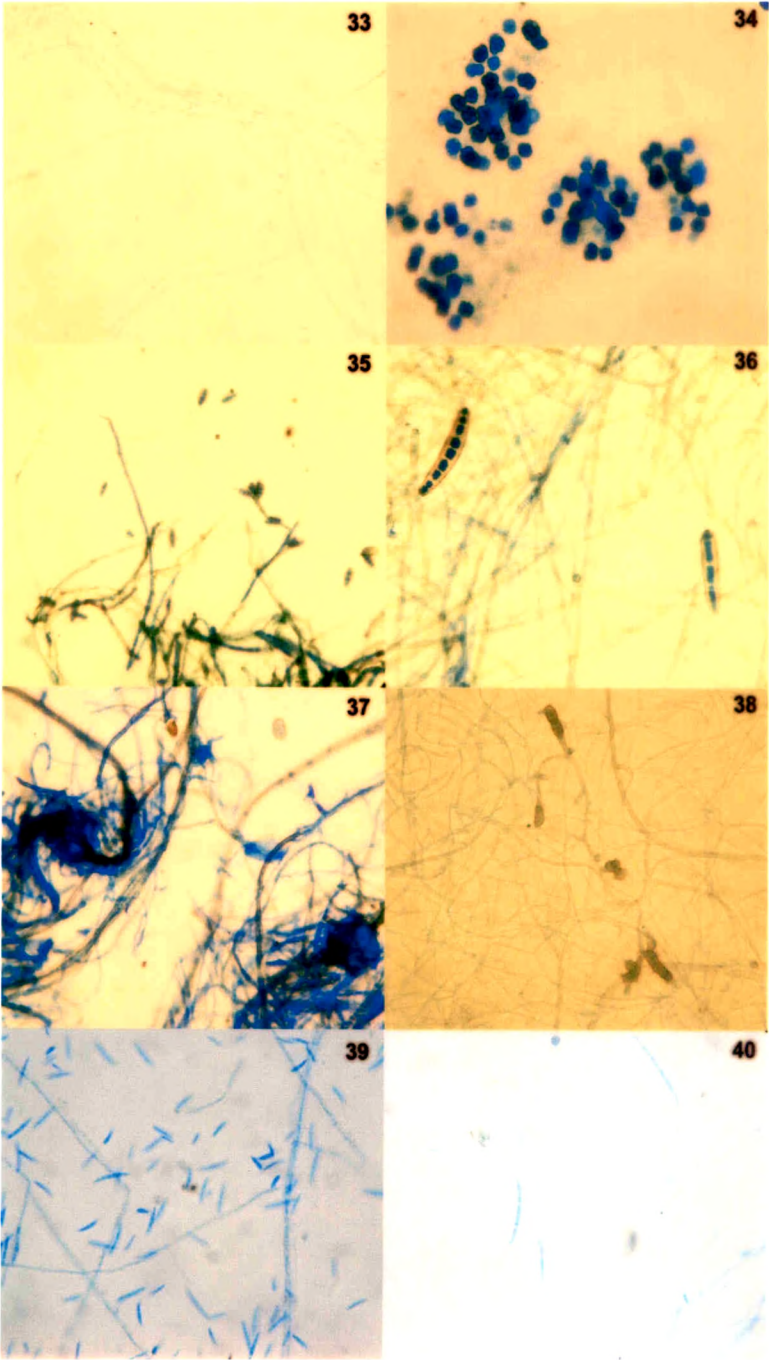


**EXPLANATION OF PLATE FIGS. 33- 40.**

- Plate Fig.33. *Dendrospora erecta* Ingold.
- " " 34. *Dichlena* sp. Dur. and Mont.
- " " 35. *Drechsclera austreliensis* (Bugnicourt.) Subram. and  
Jain. ex. M.B.Ellis.
- " " 36. *Drechsclera hawaiiensis* (Bugnicourt.) Subram. and  
Jain. ex. M.B.Ellis.
- " " 37. *Eidamella deflexa* (Berk.) Benjamin.
- " " 38. *Fulvia fulva* (Cooke.) Ciferi.
- " " 39. *Fusarium solani* (Martius.) Saccardo.
- " " 40. *Fusarium oxysporum* Schl. ex. fries. f.

**PLATE FIG. NO. V (Gravity Petridish Method)**

**Fig. No. 33 to 40**



**EXPLANATION OF PLATE FIGS 41-48.**

Plate Fig.41. *Gymnoascus ressi* Barnetzki.

" " 42. *Haplosporangium parvum* Emmons. and  
Ashbum.

" " 43. *Histoplasma capsulatum* Darling.

" " 44. *Humicola grisea* Traaen.

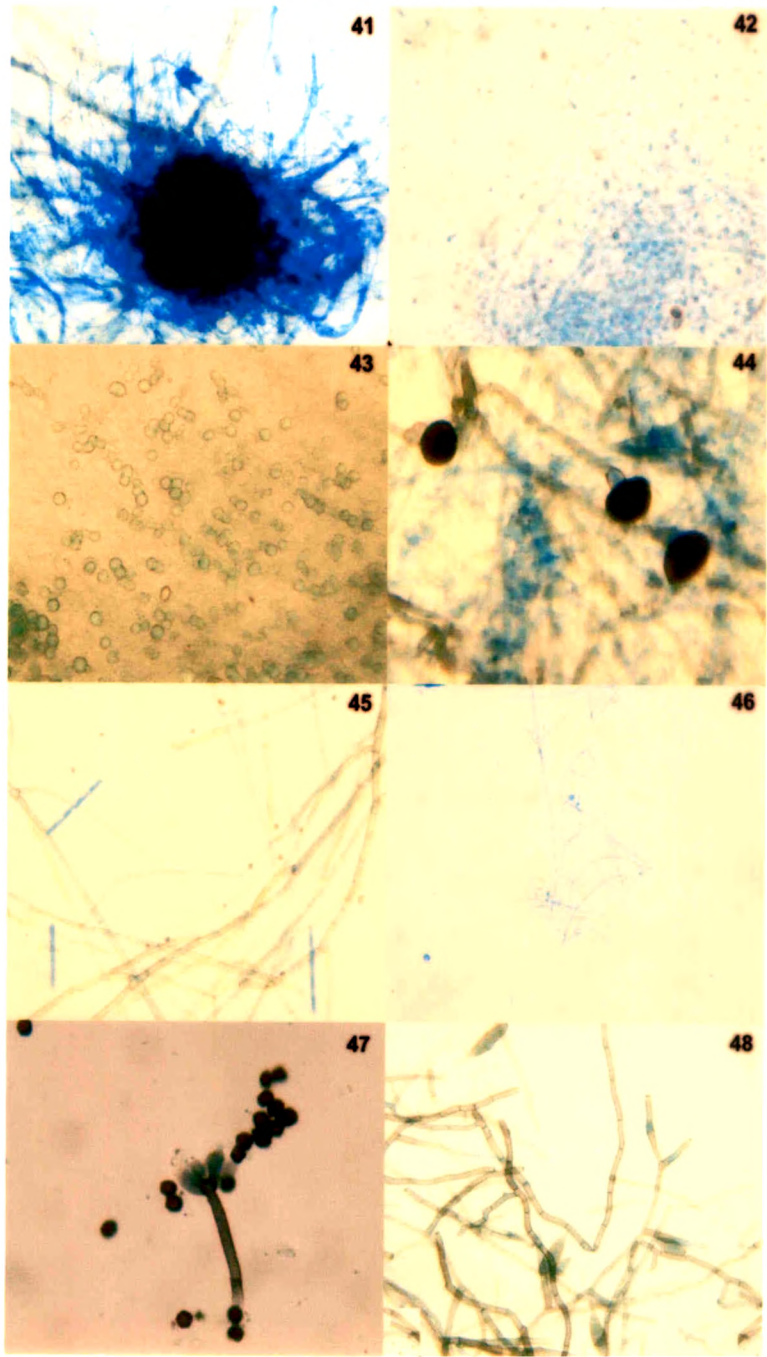
" " 45. *Leptosporomyces galzinii*

" " 46. *Madurella mycetomi* (Laveran.) Brumpt.

" " 47. *Memnoniella echinata* (Riv.) Galloway.

" " 48. *Microsporum gypseum* ( Bodin.) Guiart and  
Grigorakis.

**PLATE FIG. NO. VI (Gravity Petridish Method)**  
**Fig. No. 41 to 48**



## EXPLANATION OF PLATE FIGS 49-56.

Plate Fig.49. *Mucor disperses* Oagem.

" " 50. *Narasimhella rollandina* Pat.

" " 51. *Nigrospora sphaerica* (Sacc.) Mason.

" " 52. *Nowakowskiella elegans* (Nowak.) Schroeter.

" " 53. *Oidiodendron griseum* Robak.

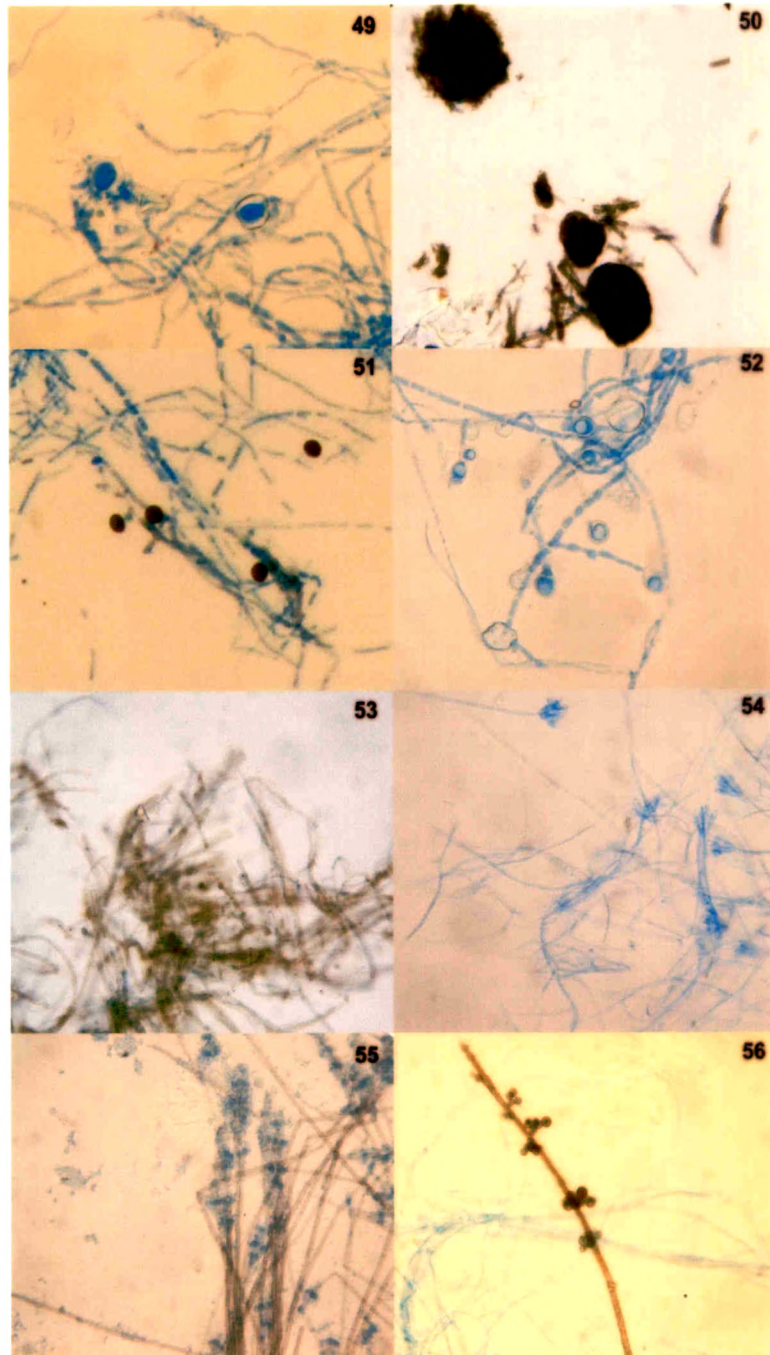
" " 54. *Penicillium verticillatum* Dangeard.

" " 55. *Penicillium* sp.

" " 56. *Periconia britanica* M.B.Ellis.



**PLATE FIG. NO. VII (Gravity Petridish Method)**  
**Fig. No. 49 to 56**



**EXPLANATION OF PLATE FIGS 57-64.**

Plate Fig.57. *Periconia kambakkamensis* Subram.

" " 58. *Phialophora* sp.

" " 59. *Pithomyces maydicus* (Sacc.) M.B.Ellis.

" " 60. *Pseudotorula heterospora* Subram.

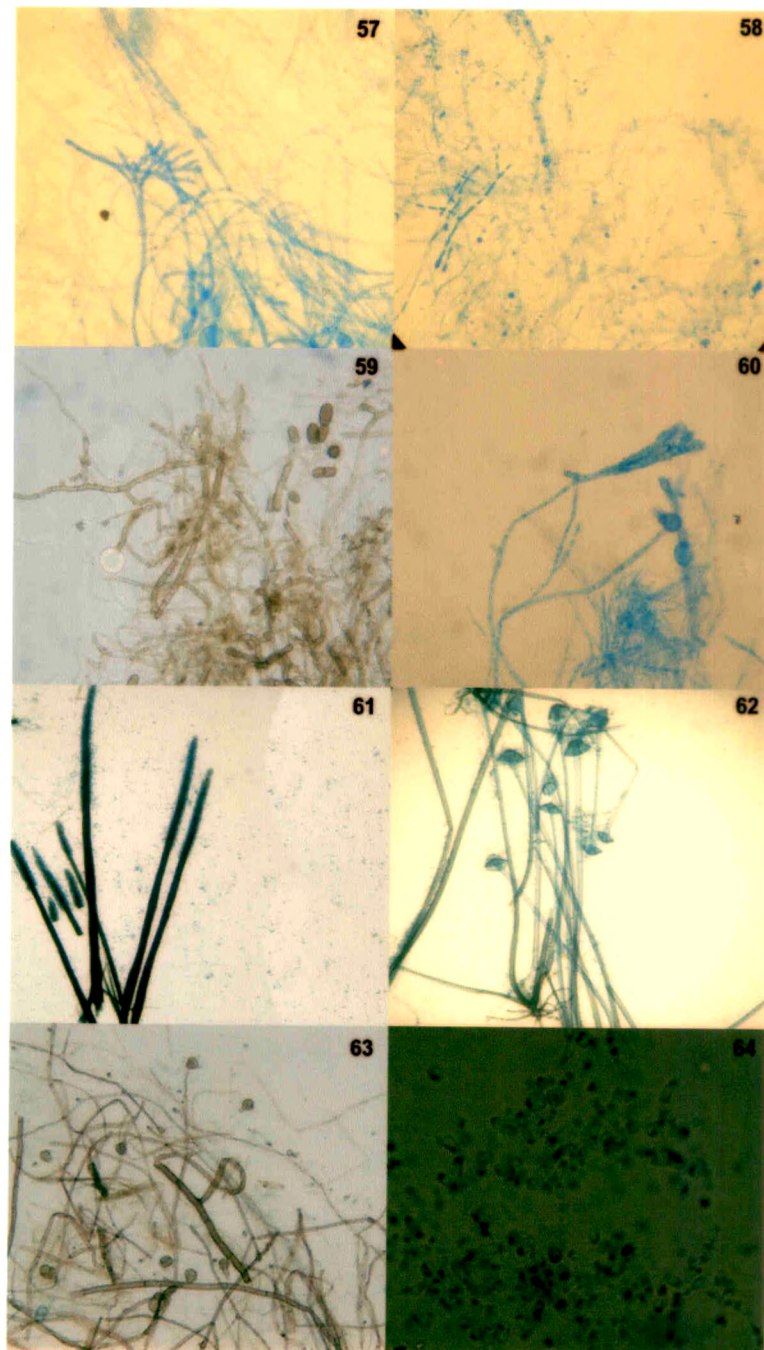
" " 61. *Rhinocladiella callaris* ( Pers. Ex. S. F. Gray.) M.B.  
Ellis.

" " 62. *Rhizopus stolonifera* (Ehrest.) Lind.

" " 63. *Sarcinella* Saccardo.

" " 64. *Sporothrix schenckii* var. *lurieii* Ajello. and Kaplan.

PLATE FIG. NO. VIII (Gravity Petridish Method)  
Fig. No. 57 to 64

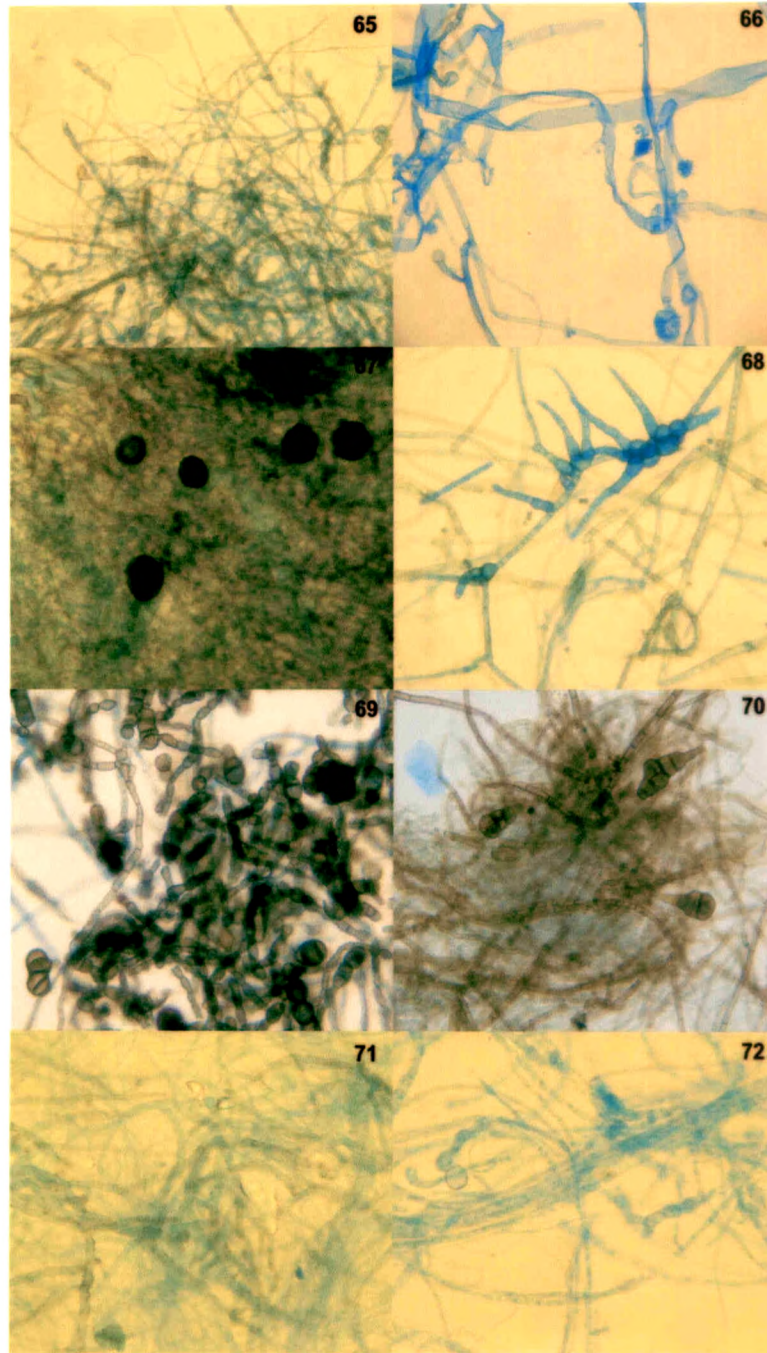


## EXPLANATION OF PLATE FIGS 65-72.

- Plate Fig.65. *Syringospora* blastospores
- " " 66. *Trichosporonoides oedocephalis* Haskins.
- " " 67. *Trimmatostroma betulinum*(Corda.) Hughes.
- " " 68. *Tripaspermum myrti* (Lind.) Hughes.
- " " 69. *Torula ellisii* Yadav and Lal.
- " " 70. *Ulocladium botrytis* Preuss.
- " " 71. *Virgaria nigra* (Link.) Ness. ex. S.F. Gray.
- " " 72. Mycelium with chlamydospores



**PLATE FIG. NO. IX (Gravity Petridish Method)**  
**Fig. No. 65 to 72**



## EXPLANATION OF PLATE FIGS 1-8.

Plate Fig.1. *Alternaria*

" " 2. *Aspergillus*

" " 3. *Bispora*

" " 4. *Chaetomella*

" " 5. *Corynespora*

" " 6. *Curvularia*

" " 7. *Haplosporella*

" " 8. Insect scale



**PLATE FIG. NO. I (Tilak Rotorod Sampler Method)**

**Fig. No. 1 to 8**



## EXPLANATION OF PLATE FIGS 9-17.

Plate Fig.9. *Nigrospora*

" " 10. *Pestalotia*

" " 11. *Pithomyces*

" " 12. Pollen grain

" " 13. *Rhizopus*

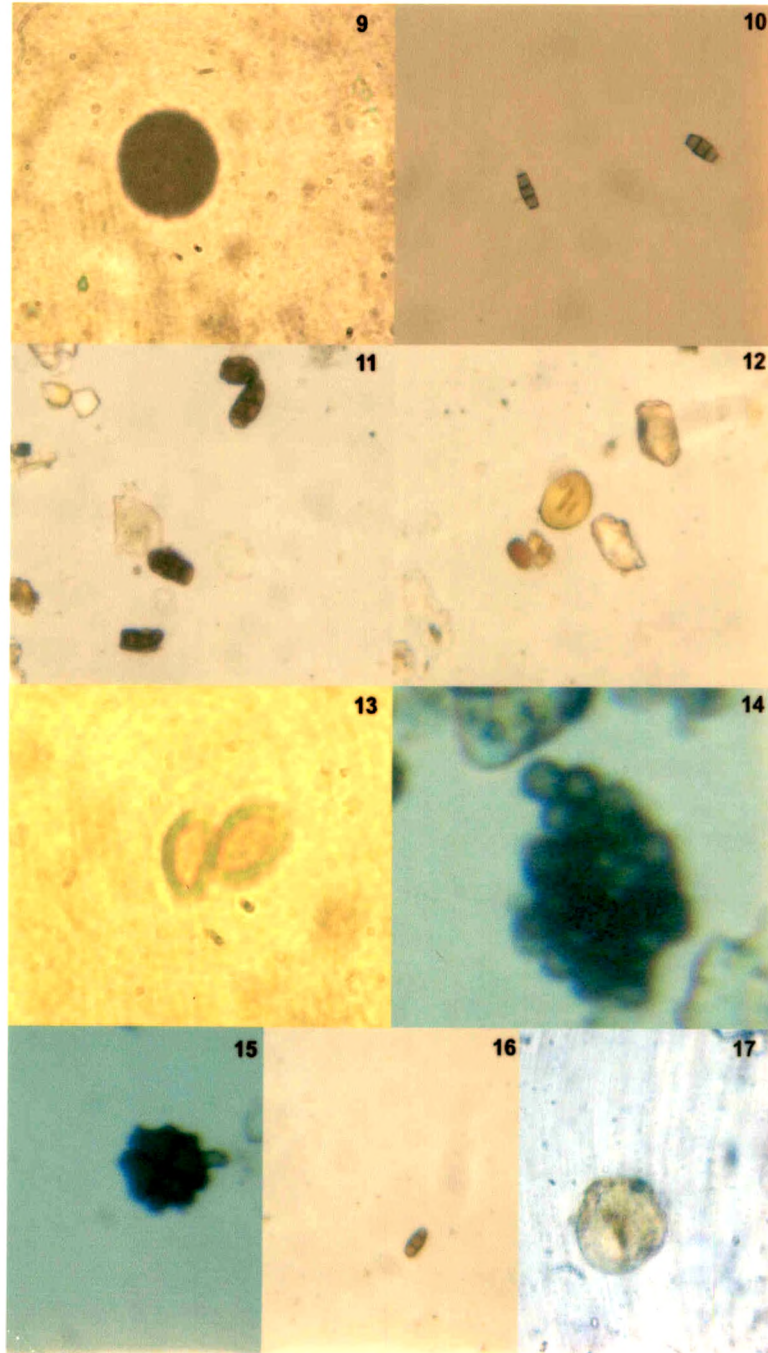
" " 14. smut spore

" " 15. *Spegazzinia*

" " 16. *Spondylocladiella*

" " 17. Uredospore

PLATE FIG. NO. II (Tilak Rotorod Sampler Method)  
Fig. No. 9 to 17



**Table No. 1: Monthly meteorological records of Satara Taluka (Year 2006-2007).**

Month	Year	Temperature °C		Rainfall (mm.)		Humidity	
		Max.	Min.	Mm.	Days in month	Max.	Min.
October	2006	31.3	19.9	43.0	10	95	37
November	2006	30.7	18.4	42.1	13	95	46
December	2006	30.6	13.3	–	–	90	42
January	2007	31.5	13.6	0.3	01	89	31
February	2007	32.3	14.5	–	–	86	25
March	2007	36.2	18.4	–	–	83	29
April	2007	38.2	22.1	32.7	04	81	22
May	2007	36.7	23.2	5.6	03	73	29
June	2007	30.2	22.9	368.2	18	98	50
July	2007	27.4	22.1	329.3	31	98	55
August	2007	26.9	21.7	214.6	27	98	67
September	2007	31.5	13.6	0.300	22	97	59







Table No. 3: Month-wise occurrence of different Fungi in indoor and outdoor in percentage during Oct. 2006 to Sep. 2007.

Sr.	Mycopollutants	Oct.-06		Nov.-06		Dec-06.		Jan.-07		Feb.-07		Mar.-07		Apr.07		May.-07		Jun.-07		Jul.-07		Aug.-07		Sept.-07						
		I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O					
	<b>Actinomycetes</b>																													
1	<i>Actinomyces</i>													0.04																
	<b>Mastigomycotina</b>																													
1	<i>Cladochytrium</i>																		0.1	0										
2	<i>Nowakowaskiella</i>		0		0.1																			0.1	0					
	<b>Zygomycotina</b>																													
1	<i>Mucor</i>		0.1	0.1	0	0.1	0.1	0	0	0.1	0	0	0	0	0	0								0	0.1					
2	<i>Rhizopus</i>	0	0	0.1	0	0.1	0	0	0	0.1	0	0.2	0	0	0.1	0.3	0.1				0	0.1	0	0.16	0	0.2	0.1			
	<b>Ascomycotina</b>																													
1	<i>Chaetophoma</i>				0	0																		0.01	0	0				
2	<i>Dichlaena</i>	0																												
3	<i>Eidamella</i>													0.02							0	0								
4	<i>Gymnoascus</i>																			0	0									
5	<i>Narasimhella</i>																				0				0.05	0				
	<b>Deuteromycotina</b>																													
1	<i>Allescheriella</i>																													
2	<i>Alternaria</i>	0.2	0.1	0.5	0.3	0.4	0											0.2	0.1	0.13					0.01		0.2	0.1		
3	<i>Ampulliferina</i>			0.1	0.1																									
4	<i>Aspergillus</i>	0.4	0.3	1.4	0.4	1.2	1	0.2	0	1.1	0.3	0.6	0	0	0	6.8	3.5	2	0.7	4.4	1.6	1.47	0.3	1.3	0.5					
5	<i>Arthrobotryum</i>																						0.04							
6	<i>Bacillispora</i>																						0.04	0						
7	<i>Blastomyces</i>					0.1	0																0.02	0	0.1	0.1				
8	<i>Candida</i>					0		0.1	0												0				0	0				
9	<i>Catenophora</i>									0	0																			
10	<i>Cladosporium</i>	1.6	0.4	4.9	3.1	2.7	1	0.3	0.2	3.1	1	2.5	1	0	0	0.1	0	1.87	1	2.1	0.6	4.21	0.7	7.6	4.6					
11	<i>Colletotrichum</i>					0		0.3																						
12	<i>Coniosporium</i>							0	0														0.01							
13	<i>Curvularia</i>			0.2	0.2	0.3	0																				0.2	0		
14	<i>Custingophora</i>																						0.02							
15	<i>Dendrospora</i>					0	0	0	0																		0.1			

Sr.	Mycopollutants	Oct.-06		Nov.-06		Dec-06.		Jan.-07		Feb.-07		Mar.-07		Apr.07		May.-07		Jun.-07		Jul.-07		Aug.-07		Sept.-07	
		I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O	I	O
16	<i>Drechsciera</i>	0	0			0	0			0	0	0	0	0	0	0	0	0	0	0	0	0.14	0	0	0
17	<i>Fulvia</i>																								
18	<i>Fusarium</i>	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.02	0	0.4	0.1
19	<i>Haplosporangium</i>	0.2	0					0.1	0.1																
20	<i>Histoplasma</i>																								
21	<i>Humicola</i>					0.1	0															0.02	0		0
22	<i>Leptosporomyces</i>																								
23	<i>Madurella</i>																								
24	<i>Memnoniella</i>							0	0	0.1															
25	<i>Nigrospora</i>	0	0	0.3	0.1	0	0																	0.3	0.2
26	<i>Oidodendron</i>																								0
27	<i>Penicillium</i>	0.2	0	0	0			0.1	0.1																1.3
28	<i>Periconia</i>							0																	0.2
29	<i>Phialophora</i>					0.5	0			0															
30	<i>Pitomyces</i>																								0.1
31	<i>Pseudotorulla</i>																								
32	<i>Rhinocladiella</i>																								0.1
33	<i>Sarcinella</i>							0	0																
34	<i>Sporothrix</i>																								
35	<i>Syringospora</i> <i>blastospores</i>																								
36	<i>Trichosporonoides</i>																								
37	<i>Trimmatosoma</i>							0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	<i>Tripaspermum</i>																								
39	<i>Torula</i>			0.2	0.1			0.1	0.1																
40	<i>Ulocladium</i>									0															
41	<i>Virgaria</i>																								
42	Mycelium with chlamydospores			0.2	0.3	0.1	0																		
43	Mycelium with vescicle																								0
44	Sterile Mycelium			0		0.2	0	0.1	0.1	0.1	0.1	0					0	0			0.5	0.1	0.27	0.2	0.3

**Table No. 4: Season-wise occurrence of different groups of fungi and bacteria (colonies), during October 2006-September 2007 around the hospital.**

Sr.No.	Group / Class	Rainy season		Winter season		Summer season	
		I	O	I	O	I	O
1	Actinomycetes	3	-	-	-	8	2
2	Mastigomycotina	10	4	-	-	-	-
3	Zygomycotina	38	21	33	19	56	21
4	Ascomycotina	12	6	1	1	4	-
5	Deuteromycotina	2097	804	1199	623	1220	597
6	Bacteria	4122	3815	2818	1898	3946	2810

**Table No. 5: Month-wise occurrence of different colonies of fungi and bacteria during October 2006-2007. (Inside hospital).**

Sr. No	Month	Oct -06	Nov -06	Dec -06	Jan -07	Feb -07	Mar -07	Apr -07	May -07	Jun -07	Jul -07	Aug -07
1.	Fungi	185	557	411	82	322	276	50	640	290	548	475
2.	Bacteria	528	1261	678	351	2025	685	1062	174	1269	1311	1130



**Table No. 6: Month-wise occurrence of different colonies of fungi and bacteria during October 2006-2007. (Outside hospital).**

Sr. No	Month	Oct -06	Nov -06	Dec -06	Jan -07	Feb -07	Mar -07	Apr -07	May -07	Jun -07	Jul -07	Aug -07	Sept -07
1.	Fungi	68	328	183	72	109	134	24	353	127	171	111	428
2.	Bacteria	182	757	771	188	1647	208	814	141	1154	1325	1030	306

**Table No.7: Average month-wise occurrence of genera of fungi outside and inside the hospital.**

Oct -06	Nov -06	Dec -06	Jan -07	Feb -07	Mar -07	Apr -07	May -07	Jun -07	Jul -07	Aug -07	Sept -07
253	885	595	154	431	410	74	993	417	718	586	1274

**Table No. 8: Season-wise occurrence of bacteria (colonies) during October 2006- September 2007.**

Winter season		Summer season		Rainy season	
Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor
2818	1898	3946	2810	4122	3615

**Table No. 9: Month-wise data of patients visited in the hospital during October 2006 to September 2007**

Month	Asthma		Skin disease		Allergy	
	Total	%	Total	%	Total	%
Oct.	16	0.23	477	6.86	21	0.30
Nov.	29	0.41	408	5.87	17	0.24
Dec.	21	0.30	270	3.88	1	0.01
Jan.	22	0.31	270	3.88	2	0.02
Feb.	15	0.21	640	9.20	4	0.05
March	44	0.63	665	9.56	2	0.02
April	11	0.15	732	10.53	1	0.01
May	8	0.11	255	3.66	4	0.05
June	7	0.10	570	8.20	2	0.02
July	15	0.21	723	10.40	1	0.01
August	9	0.12	813	11.69	11	0.15
Sept.	23	0.33	836	12.02	5	0.07

**Table: 10. Different characters of bacterial samples collected from hospital.**

Sr.	Size	Shape	Margin	Elevation	Consistency	Opacity	Color	Gram Character	Motility
1	3mm	Circular	Regular	Convex	Dry	Opaque	Red	+ rods	Motile
2	2mm	Circular	Regular	Flat	Moist	Opaque	Yellow	- cocci	Non motile
3	3mm	Circular	Irregular	Convex	Moist	Opaque	Yellow	+ rods	Motile
4	4mm	Circular	Irregular	Convex	Moist	Semitransparent	Yellow	- cocci	Non motile
5	1mm	Circular	Irregular	Convex	Moist	Semitransparent	Yellow	+ cocci	Non motile
6	3mm	Circular	Regular	Flat	Moist	Opaque	Orange	- cocci	Motile
7	1mm	Circular	Irregular	Convex	Moist	Opaque	Orange	+ rods	Non motile
8	4mm	Circular	Regular	Convex	Moist	Semitransparent	White	- cocci	Non motile
9	1mm	Circular	Regular	Flat	Moist	Transparent	White	- rods	Motile
10	2mm	Circular	Regular	Flat	Moist	Opaque	Pink	- rods	Motile
11	8mm	Circular	Irregular	Flat	Dry	Opaque	Brown	- rods	Motile

**Table N0. 11: Biochemical characters of different samples of bacteria from hospital.**

Sr.	Mannitol	Glucose	Lactose	M.R.	V.P.	Urease	Citrate
1	+	+	-	+	-	+	+
2	+	-	-	+	-	+	-
3	+	-	-	+	-	-	-
4	+	-	-	+	-	+	+
5	-	+	+	-	+	+	+
6	-	-	-	-	+	+	+
7	-	+	-	-	-	+	+
8	-	-	-	-	-	+	+
9	+	-	-	+	-	+	+
10	+	+	-	+	-	+	-
11	+	+	-	+	-	+	+

- Acid and gas production in sugar fermentation.
- No gas production in sugar fermentation.
- + Positive for a test.
- Negative for a test.



**DESCRIPTION OF SPORES OBSERVED (AS PER GRAVITY  
PETRIDISH METHOD).**

- 1) *Actinomyces*-Consists of the radiating system of branching, hyphae described as "spidery". As the colony develops it becomes white, sub-spherical. Spores 0.5-1.0  $\mu$  in diam. Pathogenic in man causing actinomycosis.
- 2) *Allescheriella*- Conidia solitary, dry, simple, spherical, obovoid, reddish-brown, smooth, thick walled, aseptate. Conidia 14-28x 11-19  $\mu$ .
- 3) *Alternaria*-Conidia straight, cylindrical rounded at the ends, mid-pale olivaceous or golden-brown, smooth with 5-6 transverse septa and occasionally one or more longitudinal or oblique septa, 45-145 x 10-30  $\mu$ , thick in the broadest part. Dermatophytic and allergic.
- 4) *Ampulliferina*- Conidia catenate, cylindrical with truncate ends except the terminal conidium, which is rounded at its apex, 1-septate, brown, smooth, 10-12x 4-5  $\mu$ .
- 5) *Arthrobotryum*- Conidia ellipsoidal, cylindrical, fusiform, truncate at base, very pale brown with several transverse septa.
- 6) *Aspergillus*- Conidia one celled, globose, oval, 3-4x 2-3  $\mu$ . Conidia smooth, thin-walled, hyaline or colored. Pathogenic to man causing aspergillosis and allergy.
- 7) *Baccillispora* - Conidia oval, cylindrical, one septate, hyaline, granular, 14-28x 3-6  $\mu$ .
- 8) *Blastomyces*- Conidia are smooth-walled, slightly oval, and 2 to 10  $\mu$ , pathogenic to man causing blasomycosis.
- 9) *Candida*- Conidia hyaline, 1-celled, ovoid forming chains by budding, pathogenic in man causing candidiasis.
- 10) *Catenophora*- Conidia hyaline, 1-celled, ellipsoid, produced on lateral sterigmata.
- 11) *Chaetophoma*- Pycnidia dark, small, globose to irregular without ostiole in dense or loose clusters, seated on an olive colored subiculum; conidia hyaline, 1-celled, very small, ovoid.
- 12) *Cladochytrium*- Zoospores contain a single orange globule and bear a single posterior flagellum.

- 13) *Cladosporium*- Conidia (blastospores) dark, 1 to 2 celled, variable in shape and size, ovoid to cylindrical and irregular. Some typically lemon shaped, with 0-3 septa or occasionally more septate, 6-14x 4-9  $\mu$ m, distal or terminal ones spherical 3.5-7- $\mu$ m diam, pathogenic in man causing cladosporiosis and allergic diseases.
- 14) *Colletotrichum*- Conidia hyaline, 1-celled, oblong.
- 15) *Coniosporium*- Conidia in long chains, ellipsoidal, sub-spherical, muriform, pale to mid dark-brown, smooth 15-63x 10-34  $\mu$ m.
- 16) *Curvularia*-Conidia usually straight but occasionally slightly curved, clavate 2-septate, 30-50 x 18-28  $\mu$ m in broadest part, mid to dark-brown with the basal cell, sometimes the cell above it paler than the others, smooth. Dermatophytic and allergic.
- 17) *Custingophora*- Conidia simple, oblong, rounded at the ends, hyaline, smooth, 1-celled. Conidia 2-3x 1-1.5  $\mu$ m.
- 18) *Dendrospora*- Conidia (aleuriospores) terminal, single branched, several celled, each consisting of main axis with several secondary and tertiary branches arising irregularly, hyaline.
- 19) *Dichlaena*- Ascospores hyaline, subglobose, uniguttulate.
- 20) *Drechslera*- Conidia solitary, some times catenate, simple, straight, clavate, cylindrical, rounded at the ends, ellipsoidal, obclavate, straw colored to olivaceous-brown, mostly smooth, 13-40 x 6-11  $\mu$ m. Dematophytic.
- 21) *Eidamella*- Appendages with numerous deflexed lateral branches, one or more short, hyaline, spiral branchlets, produced terminally from hyphae surrounding central ascigerous mass.
- 22) *Fulvia*- Conidia catenate, chains frequently branched, simple, cylindrical with rounded ends, mid pale-brown to olivaceous- brown, smooth, septate, Conidia 12-47x 4-10  $\mu$ m.
- 23) *Fusarium*- Conidia (phialospores) hyaline, variable, macroconidia several-celled, slightly curved ends, typically canoe-shaped; micro conidia 1-celled, oblong.
- 24) *Gymnoascus*- Ascocarps lack a definite peridial wall. Appendages not well defined; free ends of peripheral hyphae spine like with short, apiculate, curved lateral.

- 25) *Haplosporangium*- Conidia more or less globose, saprophytic or pathogenic on animals.
- 26) *Histoplasma*- Macroconidia are spherical, 8 to 14  $\mu\text{m}$  in diam. The surface of the macroconidium is covered with many evenly spaced spines. Microconidia are spherical, the walls of the spore are smooth, spiny or barley roughened, 2-4  $\mu\text{m}$  in diam. Pathogenic to man causing histoplasmosis.
- 27) *Humicola*- Conidia, globose to subglobose, dark brown, one celled, 12-17  $\mu\text{m}$  in diameter. Dermatophytic and allergic.
- 28) *Leptosporomyces*-Conidia single, straight, cylindrical, hyaline, 3-4 septate, 36-62x 3-6  $\mu\text{m}$ .
- 29) *Madurella*- Sclerotia are produced, which are pseudoparenchymatous, being formed of polygonal cells about 10  $\mu\text{m}$  in diameter. Sclerotia reach diameters of 750  $\mu\text{m}$ . Pathogenic in man causing madurmycosis.
- 30) *Memnoniella*- Conidia catenate, simple spherical, dark-brown to black. Conidia 3.5-5  $\mu\text{m}$  diam.
- 31) *Microsporium*- Microconidia are numerous, thick walled with rough surface (echinulate), markedly distorted in shape, 2.5-3x 4-6  $\mu\text{m}$ . Macroconidia broadly spindle shaped with moderately thick walls and 4 to 6 septa to 25- 60x 7.5- 16  $\mu\text{m}$ , cause dermatomycosis of animals and man (tinea capitis).
- 32) *Mucor*- Sporangia terminal, globose, large collumellate, encrusted, pigmented, often finely echinulate and multi-spored; Spores globose, ellipsoidal, large non-striated, tuberculate. Pathogenic in man causing mucormycosis.
- 33) *Narasimhella*- Ascospores lenticular, with equatorial branch.
- 34) *Nigrospora*- Spores 1-celled, depressed, globose, quite round with the exospore, jet-black, opaque and shiny. Spores are 14-20  $\mu\text{m}$  in diameter. Dermatophytic and allergic.
- 35) *Nowakowskiella*- Zoosporangia are pear shaped with a sub sporangial swelling and granular or hyaline contents.
- 36) *Oidiodendron*- Conidia catenate, dry, separating readily, simple, cylindrical, doliform, spherical, hyaline, grayish green, brown or olivaceous-brown, smooth 1-celled, 2-3.5x 1.5-2  $\mu\text{m}$ .

- 37) *Penicillium*- Conidia variable in shape, elliptical, globose, smooth, entirely hyaline or sometimes colored, 3-3.5x 2-2.5  $\mu$ . Pathogenic in man causing penicillosis and allergic.
- 38) *Periconia*- Conidia catenate, simple, spherical or sub spherical, oblong pale-brown, verruculose, 1-celled.
- 39) *Phialophora*- Conidia aggregated in slimy heads, semi-endogenous, simple, straight, ellipsoidal, and rounded at the ends, colorless smooth, 1-celled, 3-7x 1.5-2.5  $\mu$ .
- 40) *Pithomyces*- Conidia solitary, dry, simple, detached through fracture of the denticle, a part of which often remains attached to the base of the conidium, ellipsoidal, clavate, limniform, obovoid, oblong, rounded at the ends, pyriform, straw colored, smooth, echinulate, with 1 or more oblique or longitudinal septa, dermatophyte causing skin diseases in human beings and allergic.
- 41) *Pseudotorula*- Conidia are of two types, phragmospores and scolecospores. Phragmospores dark-brown in color, elliptical, 2-5 septate, constricted at one or more septa, thick walled, 11-24x 5.6- 7  $\mu$ . Scolecospores long whip-like, brown darker below, paler above, finely verrucose, many-septate, constricted at septa, erect, straight, 125-450x 4-6  $\mu$  in the middle and 2.8-3.5  $\mu$  at the tip.
- 42) *Rhinoclatiella*- Conidia simple, ellipsoidal, cylindrical, clavate, pale-brown or olivaceous-brown, smooth, 1-celled, 4-8x 1.5-2.5  $\mu$ .
- 43) *Rhizopus*- Spores irregularly rounded, angular, striate, grayish, 14x11  $\mu$ . Pathogenic in man causing mycosis and allergic.
- 44) *Sarcinella*- Conidia solitary, dry, simple, sub-spherical, dark-brown or reddish-brown, smooth, muriform, deeply constricted at septa 20-28x 16-24  $\mu$ .
- 45) *Sporothrix*- Conidia (sympodulospores) hyaline, 1-celled, globose. Asteroid bodies are seen, 3-5  $\mu$  in diam., that is bordered by radiate substance, which forms a covering of approximately 10 $\mu$  thickness. *S. schenckii* causes sporotrichosis in humans.
- 46) *Torula*- Conidia dry, in branched chains arising from the surface of the upper half of the very characteristic conidiogenous cells, cylindrical with

rounded ends, ellipsoidal, olivaceous-brown, smooth, with 1 or several transverse septa usually strongly constricted at the septa, 20-70 x 5-9  $\mu$ .

**47) *Trichosporonoides***- Conidia are hyaline, arthrospores also formed, conidia hyaline, 1-celled, yeast like state also present.

**48) *Trimmatostroma***- Conidia dry, simple, branched, lobed, straight, cylindrical, rounded at the apex, ellipsoidal, clavate, pyriform, sub-spherical, pale to dark brown, smooth, with transverse and often longitudinal or oblique septa, 12-38x 4-10  $\mu$ .

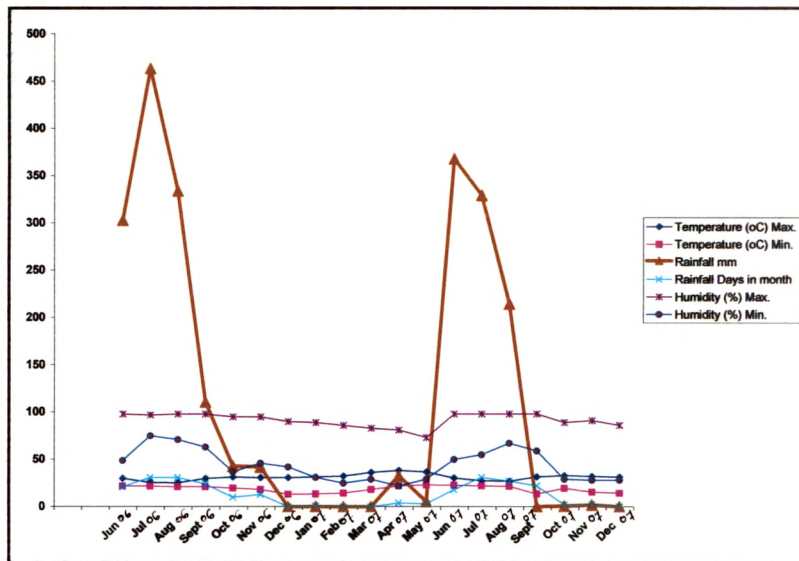
**49) *Tripaspermum***- Conidia solitary, dry, branched, usually made up of a ellipsoidal, subulate, multiseptate arms, pale to olivaceous-brown, smooth, conidia with stalk cell, 4-8  $\mu$  at the base, 1-2  $\mu$  at tapering, 1-4 septate.

**50) *Ulocadium***- Conidia dry, simple, broadly ellipsoidal and obovoid, clavate, sub-spherical but not obclavate, pale to dark blackish-brown, smooth with transverse and usually also longitudinal or oblique septa, 13-30 x 6-19  $\mu$ . dermatophytic and allergic.

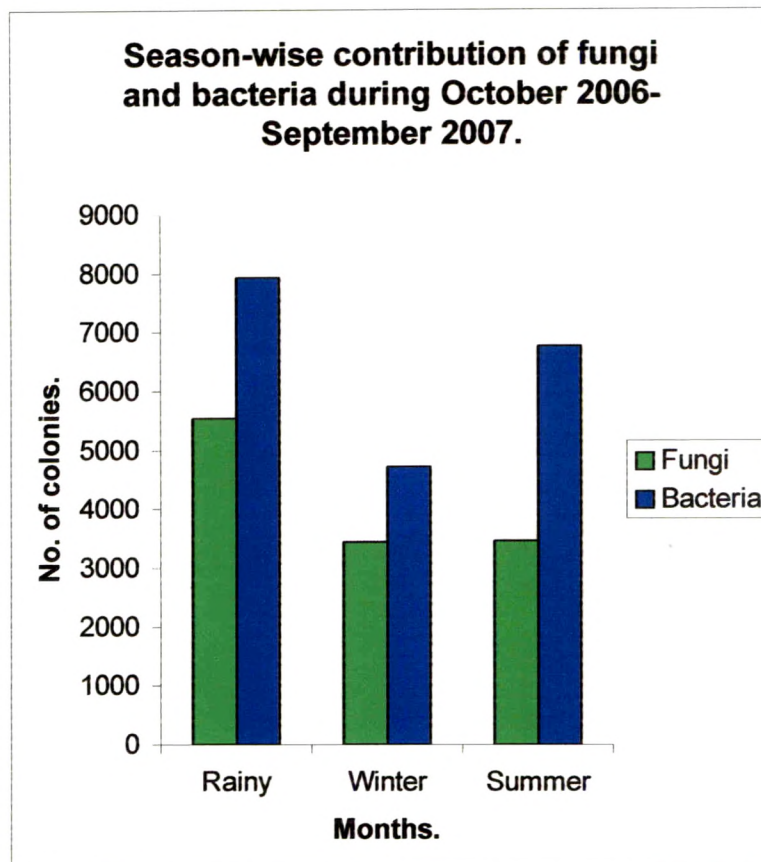
**51) *Virgaria***- Conidia dry, simple, reniform, pale to mid brown, smooth, 1-celled, 4-6x 2.5-4  $\mu$ .



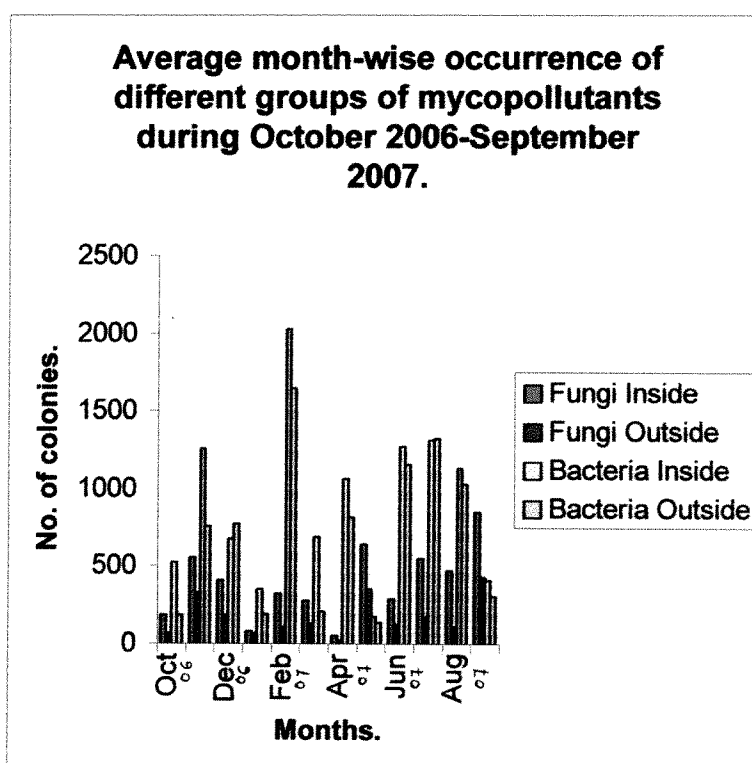
**Histogram 1: Monthly meteorological records of Satara Taluka (Year 2006-2007).**



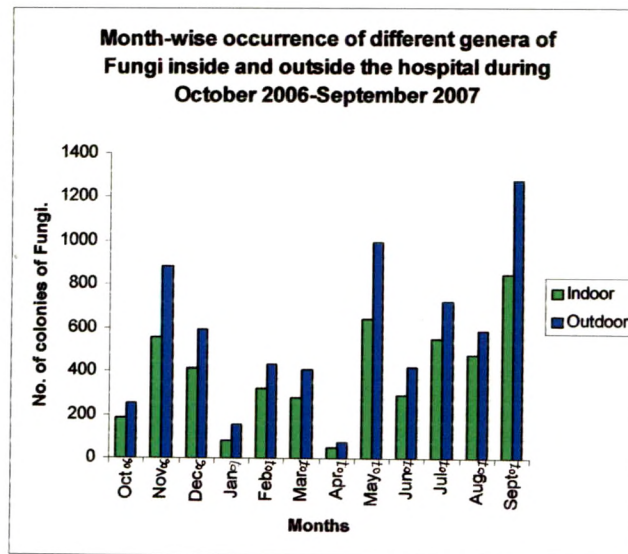
**Histogram 2: Season-wise contribution of fungi and bacteria during October 2006-September 2007.**



**Histogram 3: Month-wise contribution of fungi and bacteria (together) during October 2006-September 2007 inside and outside the hospital.**

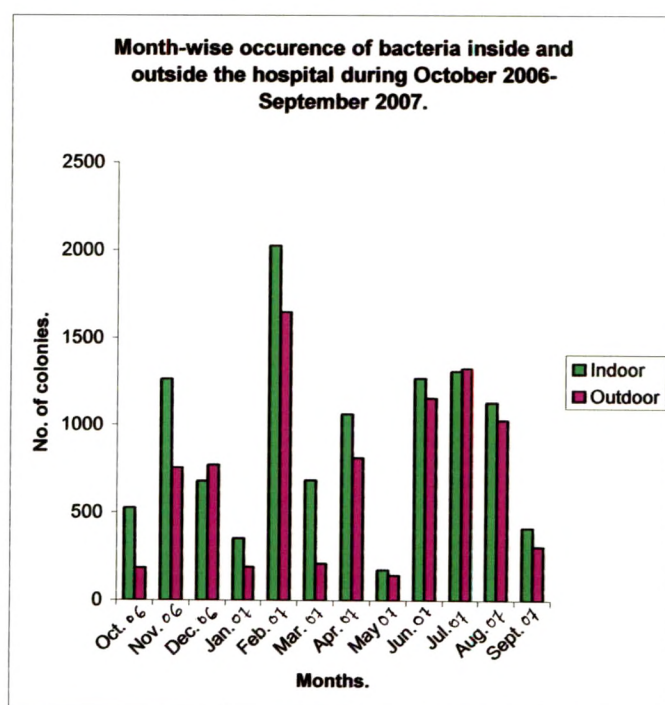


**Histogram 4: Month-wise contribution of different genera of fungi inside and outside the hospital during October 2006-September 2007.**



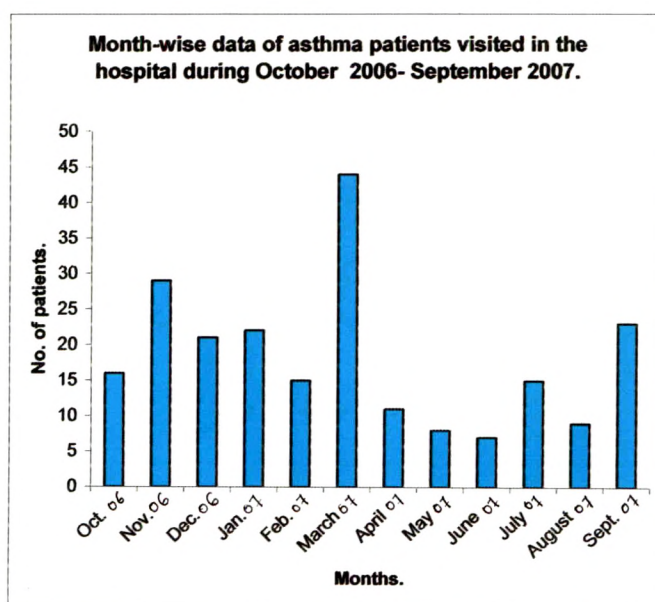
15848

**Histogram 5: Month-wise occurrence of bacteria inside and outside the hospital during October 2006- September 2007.**

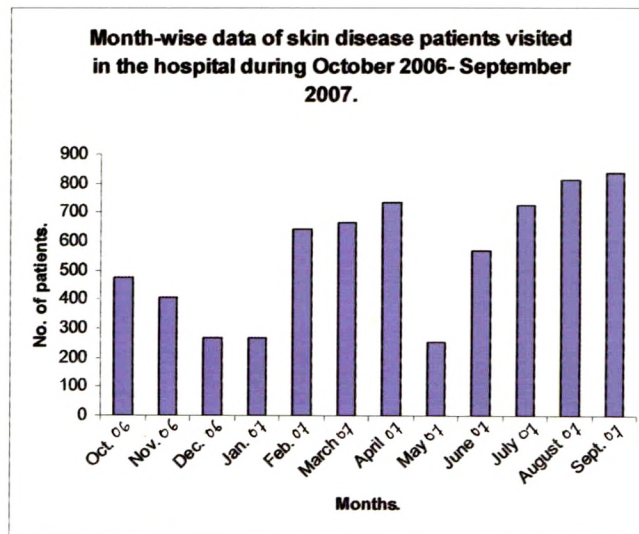




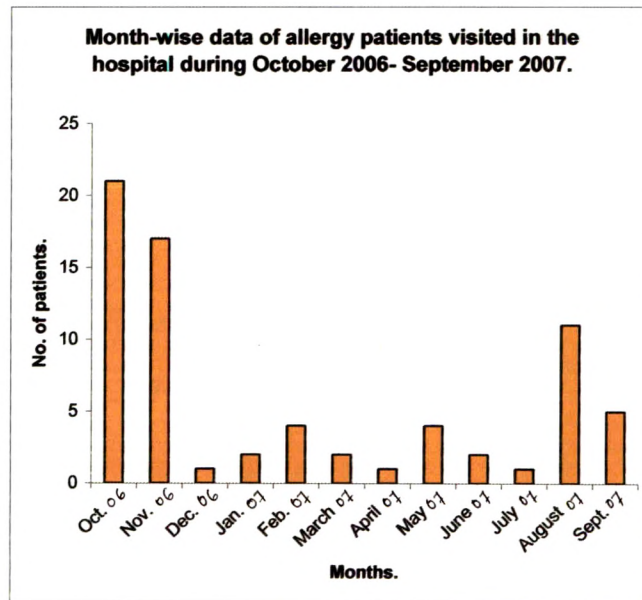
**Histogram 6: Month-wise data of asthma patients visited in the hospital during October 2006- September 2007.**



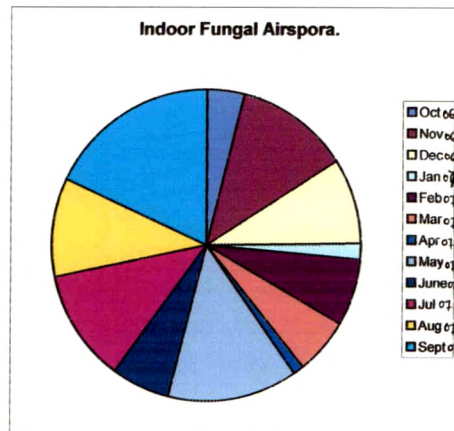
**Histogram 7: Month-wise data of skin disease patients visited in the hospital during October 2006- September 2007.**



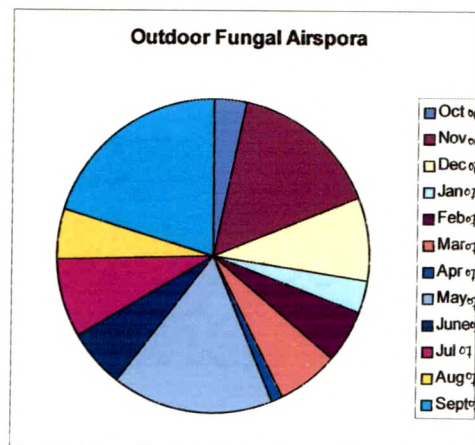
**Histogram 8: Month-wise data of allergy patients visited in the hospital during October 2006- September 2007.**



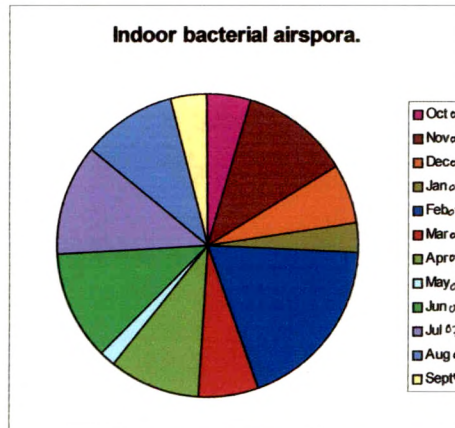
**Pie-chart 1: Indoor fungal airspora.**



**Pie-chart 2: Outdoor fungal airspora.**



**Pie-chart 3: Indoor bacterial airspora.**



**Pie-chart 4: Outdoor bacterial airspora.**

