RESULTS

RESULTS

The refraction of 1854 children up to twelve years old showed that the number of cases with a difference in refraction between both eyes of more than one diopter is 263 cases

* So, the incidence of anisometropia (more than one diopter) is 14.185% (Table 1).

* Of the 263 anisometropes,there are 154 females (58.56%) and 109 males (41.44%), so, anisometropia is more common in females than males (Table 2).

* Of the total number of anisometropes, 52 cases (19.77%) have a consanguinity between their parents.

* Of the 263 anisometropic cases, there are:-
155 cases (58.94%) of the myopic type,
81 cases (30.80%) of the hypermetropic type,
27 cases (10.26%) of the mixed type.
so, myopic anisometropia is the most common, then, hypermetropic anisometropia, then ,mixed anisometropia (Table 3).

* From tables (4,5,6) we found that the higher number of anisometropes have a low diopteric difference.

Of the total 263 anisometropic children, the number of cases that were given their optical correction was 251 cases, the other 12 cases did not come to their correction.

Those 12 cases were:-

8 cases of the myopic type,

3 cases of the hypermetropic type, and

1 case of the mixed type.

* After giving the optical correction for the 251 anisometropic children, we detected 109 cases with amblyopia (43.43%).

So, amblyopia is present among 43.43 % of those anisometropic cases.

Those 109 cases were 55 of the myopic, 43 of the hypermetropic and 11 cases of the mixed anisometropia.

As shown in table (7), it is clear that amblyopia is higher among hpermetropic anisometropes (55.13%), less among mixed anisometropes

(42.31%) and least among myopic anisometropes (37.41%).

* According to the age, the highest number of amblyopes occurred at 12 years old (19 cases, 17.43%), and the lowest number of amblyopes occurred at 5 years old (3 cases, 2.75%). Table (8).

* Of the 109 anisometropic amblyopes, there are 57 males and 52 females who are nearly equal (Table 9).

* Of the 109 anisometropic amblyopes, 30 cases (27.52%) have a consanguinity between their parents.

* Of the 109 anisometropic amblyopes:-
  - 93 cases received training by the CAM visual stimulator, 82 cases of them continued the five sessions.
  - 16 cases were managed by occlusion, then training by the CAM visual stimulator, 12 cases of them continued the therapy.

* The 82 cases that continued the 5 sessions training by the CAM visual stimulator are as following: Tables (10),(16)

- Sex:-

  Females: 37 cases (45.12%).

  Males : 45 cases (54.88%).

- Binocular vision before training:-

  Suppression: 45 cases (54.88%).

  Fusion:37 cases (45.12%).

The number of cases that improved to 6/12 or more are 40 cases (48.78%).

The number of cases that improved in their binocular vision are 22 cases (26.83%).

Table (11) shows the improvement in visual acuity and binocular vision in relation to the age, it is clear that there is marked improvement at the young age.

Table (12) shows the mean value of cases improved in visual acuity and binocular vision in the two age groups:-

1st (5-8 years), the mean value of cases improved to 6/12 or more is 4.75 (63.33%), and of cases improved in binocular vision is 2.50 (33.33%).

2nd (9-12 years), the mean value of cases improved to 6/12 or more is 5.25 (40.38%), and of cases improved in binocular vision is 3.0 (23.08%).

It is clear that the improvement in the 1st group is better.

* The improvement in visual acuity and binocular vision in relation to the sex is shown in table (13). It is clear that females improved to 6/12 or more much better than males (51.35% and 46.67% respectively), and also improved in binocular vision more than males (27.03% and 26.67% respectively).

* The improvement in relation to the type of anisometropia:-

In the myopic anisometropic amblyopes the visual acuity improved to 6/12 or more in 59.52% of cases and the binocular vision improved in 28.57% of cases (Table 14).

In the hypermetropic anisometropic amblyopes the visual acuity improved to 6/12 or more in 27.27% of cases and the binocular vision improved

in 18.18% of cases (Table 15).

So, the myopic anisometropic amblyopes improve in their visual acuity and binocular vision much more than the hypermetropic anisometropic amblyopes when treated by the CAM visual stimulator.

* Of the 12 cases that received occlusion therapy, then training by the CAM visual stimulator, we found that only 3 cases (25%) improved in their visual acuity when trained by the CAM visual stimulator, but the binocular vision was the same as before CAM training, and the improvement in binocular vision which occurred after occlusion remained the same after CAM training, all of the 3 cases improved by one line only in the test chart which is minimal improvement.

Total number of cases refracted	Number of anisometropes more than one diopter	Percentage
1854	263	14.185%

Table (1) : The incidence of anisometropia of more than one diopter.

Sex	Number of cases	Percentage
Female	154	58.56 %
Male	109	41.44 %
Total	265	

Table (2) : Classification of anisometropic cases according to the sex.

Type of anisometropia	Number of cases	Percentage
Myopic	155	58.94 %
Hypermetropic	81	30.80 %
Mixed	27	10.26 %
Total	263	

Table (3) Classification of the 263 cases of anisometropia

Difference in diopters	Number of cases	Percentage
(-1.25 D) - (-2.0 D)	62	40.00 %
(-2.25 D) - (-3.0 D)	41	26.45 %
(-3.25 D) - (-4.0 D)	23	14.84 %
(-4.25 D) - (-5.0 D)	16	10.32 %
(-5.25 D) - (-6.0 D)	8	5.16 %
more than (- 6.0 D)	5	3.23 %
Total	155	

Table (4): Classification of myopic anisometropes according to the diopteric difference.

Difference in diopters	Number of cases	Percentage
(+1.25 D) - (+2.0 D)	43	53.09 %
(+2.25 D) - (+3.0 D)	24	29.63 %
(+3.25 D) - (+4.0 D)	11	13.58 %
more than (+ 4.0 D)	3	3.70 %
Total	81	

Table (5): Classification of hypermetropic anisometropes according to the diopteric difference.

Difference in diopters	Number of cases	Percentage
(1.25 D) - (2.0 D)	15	55.56 %
(2.25 D) - (3.0 D)	8	29.63 %
more than (3.0 D)	4	14.81 %
Total	27	

Table (6): Classification of mixed anisometropes according to the diopteric difference.

Type of anisometropia	Number of cases received optical correction	Number of amblyopes	Percentage of amblyopes
Myopic	147	55	37.41 %
Hypermetropic	78	43	55.13 %
Mixed	26	11	42.31 %
Total	251	109	43.43 %

Table (7) Percentage of amblyopia in different types of anisometropia.

Age (years)	Number of amblyopes	Percentage
5	3	2.75 %
6	6	5.50 %
7	14	12.84 %
8	18	16.51 %
9	14	12.84 %
10	18	16.51 %
11	17	15.60 %
12	19	17.43 %
Total	109	

Table (8) Age incidence of amblyopic anisometropes.

Sex	Number of amblyopes	Percentage
Female	52	47.71 %
Male	57	52.29 %
Total	109	

Table (9) Sex incidence of amblyopic anisometropes.

Age (years)	Number of cases	Sex		Binocular vision Before training		Diopteric Difference	Number of cases	Cases improved to 6/12 or more	Improvement of Binocular vision After training
		Female	Male	Suppresion	Fusion				
5	3	37	45			1.25-2.0D	19	40 (cases)	22 (cases)
		45.12 %	54.88 %						
6	5			45 (cases) (54.88%)	37 (cases) 45.12 %	2.25-3.0D	26	48.78 %	26.83 %
7	10					3.25-4.0D	14		
8	12					4.25-5.0D	13		
9	11					5.25-6.0D	6		
10	12					more than 6.0 D	4		
11	13								
12	16								

Table (10): showing analysis of the 82 cases that received training by the CAM visual stimulator.

Age (years)	Number of amblyopes	Number of cases improved to 6/12 or more	Number of cases improved in binocular vision
5	3	3 (100.00%)	2 (66.67%)
6	5	3 (60.00%)	1 (20.00%)
7	10	8 (80.00%)	4 (40.00%)
8	12	5 (41.67%)	3 (25.00%)
9	11	4 (36.36%)	3 (27.27%)
10	12	5 (41.67%)	3 (25.00%)
11	13	6 (46.15%)	3 (23.08%)
12	16	6 (37.50%)	3 (18.75%)
Total	82	40(48.78%)	22(26.83%)

Table (11) Showing the improvement in visual acuity and binocular vision in relation to the age.

Age group (years)	Mean value of amblyopes	Mean value of cases improved to 6/12 or more	Mean value of cases improved Bin. vision
(5- 8)	7.50	4.75(63.33%)	2.50 (33.33%)
(9-12)	13.00	5.25(40.38%)	3.0 (23.08%)

Table (12) showing the mean value of improvement in visual acuity and binocular vision in the two age groups (5-8 years) and (9-12 years).

Sex	No. of cases	Cases improved to 6/12 or more	percentage	Cases improved in bin. vision	Percentage
Female	37	19	51.35%	10	27.03%
Male	45	21	46.67%	12	26.67%
Total	82	40	48.78%	22	26.83%

Table (13) Classification of improved cases according to the sex.

No. of cases	cases improved to 6/12 or more	Percentage	cases improved in binocular vision	Percentage
42	25	59.52%	12	28.57%

Table (14) The improvement in visual acuity and binocular vision among myopic anisometropic amblyopes.

Sex	No. of cases	Cases improved to 6/12 or more	percentage	Cases improved in bin. vision	Percentage
Female	37	19	51.35%	10	27.03%
Male	45	21	46.67%	12	26.67%
Total	82	40	48.78%	22	26.83%

Table (13) Classification of improved cases according to the sex.

No. of cases	cases improved to 6/12 or more	Percentage	cases improved in binocular vision	Percentage
42	25	59.52%	12	28.57%

Table (14) The improvement in visual acuity and binocular vision among myopic anisometropic amblyopes.

No. of cases	cases improved to 6/12 or more	Percentage	Cases improved in binocular vision	Percentage
33	9	27.27%	6	18.18%

Table (15) : The improvement in visual acuity and binocular vision among hypermetropic anisometropic amblyopes.

Table (16) Showing the analysis of the 82 cases that received training by the CAM visual stimulator.

Case No.	Age (years)	Sex	Consang.	Binocular vision W. 4d. Test	Refraction R.E.	Refraction L.E.	Amount OF Anisometropia	VA of amblyopic eye After Refraction	VA of amblyopic eye After Training	Binocular vision After Training
1	5	M	No	Rt.Supp.	- 2.50 ---------- -1.0 x 90	+ 1.50 ---------- +0.50 x 90	4 .75	6/60	6/12	Fusion
2	5	M	Yes	Fusion	+ 3.75	+ 2.25	1.50	6/12	6/6	Stereop
3	5	F	No	Fusion	+ 2.50 ---------- +0.50 x 135	+ 5.0 ---------- +1.0 x 90	2.75	6/18	6/12	Fusion
4	6	M	No	Fusion	- 3.0 ---------- -0.50 x 90	+ 1.75	5.0	6/18	6/9	Fusion
5	6	M	Yes	Fusion	+ 4.0	+ 5.0 ---------- +1.0 x 90	1.50	6/18	6/9	Stereop.
6	6	F	No	Fusion	+ 3.0 ---------- +1.0 x 90	+ 5.0 ---------- +1.0 x 90	2.0	6/18	6/9	Fusion
7	6	F	No	Fusion	+ 2.50	+ 5.50	3.0	6/24	6/18	Fusion
8	6	F	Yes	Rt. Supp	+ 5.0 ---------- +2.0 x 90	+ 2.0 ---------- +1.0 x 90	3.50	6/24	6/24	Rt. Supp.
9	7	M	Yes	Fusion	+ 1.50	- 1.25	2.75	6/18	6/6	Stereop.
10	7	M	No	Rt. Supp.	- 3.0	+ 2.0	5.0	6/24	6/12	Rt.Supp.
11	7	F	No	Fusion	- 2.50	+ 2.0	4.50	6/18	6/9	Fusion
12	7	F	No	Lt.Supp.	+ 1.50	- 3.0	4.50	6/24	6/12	Fusion
13	7	F	No	Rt. Supp.	- 5.0 ---------- -2.0 x 90	+ 1.0 ---------- -1.0 x 180	5.50	6/24	6/24	Rt.Supp.

14	7	M	No	Rt.Supp.	- 3.50 ---------- -0.50 x 90	+ 1.75	5.50	6/24	6/12	Rt.Supp.
15	7	F	Yes	Fusion	+ 2.50	+ 4.0 ---------- +0.50 x 45	1.75	6/18	6/9	Stereop.
16	7	F	Yes	Fusion	+ 2.75	+ 3.50 ---------- +1.0 x 45	1.25	6/12	6/6	Stereop.
17	7	F	No	Fusion	+ 4.50	+ 3.0	1.50	6/12	6/9	Fusion
18	7	M	No	Fusion	+ 3.50 ---------- +2.0 x 135	+ 2.0	2.50	6/18	6/18	Fusion
19	8	M	No	Fusion	+ 2.0	+ 0.50 ---------- -0.50 x 90	1.75	6/9	6/6	Stereop.
20	8	F	No	Fusion	- 0.50 ---------- -1.0 x 180	- 2.50 ---------- -1.50 x 180	2.25	6/24	6/9	Fusion
21	8	M	No	Alt.	+ 2.0	+ 0.25 ---------- -1.0 x 90	2.25	6/18	6/12	Fusion
22	8	M	No	Rt.Supp.	- 2.50 ---------- -0.50 x 120	+ 1.50 ---------- +0.50 x 120	4.50	6/24	6/18	Rt. Supp.
23	8	M	No	Lt. Supp.	+ 2.0	- 2.0 ---------- -1.0 x 180	4.50	6/60	6/36	Lt.Supp.
24	8	M	No	Lt.Supp.	+ 1.50 ---------- +0.50 x 90	- 7.0 ---------- -2.0 x 90	6.25	5/60	6/36	Lt.Supp.
25	8	M	No	Lt. Supp.	+ 2.0	- 3.0 ---------- -1.0 x 90	5.50	6/36	6/18	Lt.Supp.
26	8	F	No	Fusion	+ 4.0	+ 2.50	1.50	6/24	6/12	Fusion

27	8	F	Yes	Fusion	+ 2.75 +0.50 x 90	+ 4.0 +2.50 x 90	2.25	6/24	6/18	Fusion
28	8	M	No	Lt.Supp.	+ 2.0	+ 5.50	3.50	6/36	6/36	Lt.Supp.
29	8	M	No	Lt.Supp	+ 2.0	+ 7.0	5.0	5/60	6/60	Lt.Supp.
30	8	M	Yes	Fusion	+ 1.50 +0.50 x 90	+ 2.50 +150 x 90°	1.50	6/18	6/9	Stereop.
31	9	F	No	Fusion	- 2.0 -1.0 x 45	+ 1.0 -1.0 x 135	3.0	6/18	6/12	Stereop.
32	9	M	No	Fusion	+ 1.75	0 -2.0 x 180	2.75	6/24	6/12	Fusion
33	9	F	Yes	Fusion	+ 1.50 +0.25 x 90	- 1.25	2.875	6/18	6/12	Fusion
34	9	M	No	Lt.Supp.	+ 2.25	- 2.50	4.75	6/24	6/18	Lt.Supp.
35	9	F	No	Rt.Supp.	- 5.0 -1.50 x 90	- 0.50 -1.0 x 90	4.75	6/36	6/18	Rt.Supp.
36	9	M	No	Lt.Supp.	+ 1.0	- 4.50	5.50	6/60	6/12	Fusion
37	9	F	No	Fusion	+ 6.0 +1.50 x 180	+ 4.50 +1.0 x 180	1.75	6/18	6/18	Fusion
38	9	F	Yes	Rt.Supp.	+ 5.50 +1.0 x 90	+ 3.0	3.0	6/24	6/24	Rt.Supp.
39	9	F	No	Lt.Supp.	+ 2.0	+ 5.0 +0.50 x 90	3.25	6/36	6/36	Lt.Supp.
40	9	M	Yes	Rt.Supp.	+ 5.50 +1.50 x 90	+ 2.50 +0.50 x 90	3.50	6/36	6/24	Fusion

41	9	M	Yes	Lt.Supp	+ 2.50	+ 6.50	4.0	6/60	6/60	Lt.Supp.
42	10	F	Yes	Fusion	+ 1.75	0 -0.50 x 90	2.0	6/18	6/18	Fusion
43	10	M	No	Fusion	- 0.75 -1.0 x 90	+ 1.50 +0.50 x 90	3.0	6/18	6/12	Stereop.
44	10	M	No	Fusion	+ 2.0	- 1.50	3.50	6/18	6/12	Stereop.
45	10	M	No	Fusion	- 1.50	+ 2.0	3.50	6/18	6/9	Fusion
46	10	M	No	Lt.Supp	+ 1.75	- 2.0	3.75	6/36	6/18	Lt.Supp.
47	10	M	No	Lt.Supp.	+ 2.0	- 4.50	6.50	6/60	6/24	Lt.Supp.
48	10	F	Yes	Lt.Supp.	+ 1.0 +1.0 x 120	- 4.0 -1.0 x 120	6.0	6/36	6/36	Lt.Supp.
49	10	M	No	Fusion	+ 4.75 +1.50 x 90	+ 3.75 +1.0 x 90	1.25	6/18	6/12	Fusion
50	10	F	No	Lt.Supp.	+ 2.50 +1.0 x 90	+ 5.0 +1.0 x 90	2.50	6/24	6/18	Fusion
51	10	M	Yes	Lt. Supp.	+ 2.50	+ 4.75	2.25	6/24	6/24	Lt.Supp.
52	10	F	No	Rt.Supp.	+ 6.0	+ 2.0	4.0	6/60	6/60	Rt.Supp.
53	10	M	No	Fusion	+ 1.50	+ 2.50 +1.50 x 45	1.75	6/18	6/12	Fusion
54	11	F	No	Fusion	- 0.50	+ 1.50	2.0	6/12	6/6	Stereop.
55	11	F	Yes	Fusion	- 2.0 -2.0 x 90	- 1.0	2.0	6/18	6/9	Fusion

56	11	M.	No	Fusion	- 2.0 -0.50 x 180	+ 0.50 +0.50 x 90	3.0	6/12	6/9	Fusion
57	11	F	No	Fusion	- 2.0 -1.50 x 135	+ 1.0	3.75	6/18	6/9	Fusion
58	11	F	Yes	Lt.Supp.	+ 1.50	- 2.75	4.25	6/36	6/18	Lt.Supp.
59	11	F	Yes	Rt.Supp.	- 5.0	+ 1.0	6.0	6/60	6/24	Rt.Supp.
60	11	M	No	Rt.Supp	- 8.0	+ 1.0	9.0	4/60	6/60	Rt.Supp.
61	11	M	No	Lt.Supp.	+ 3.0	+ 5.0	2.0	6/24	6/24	Lt.Supp.
62	11	M	Yes	Lt.Supp.	+ 2.75	+ 5.25	2.50	6/36	6/36	Lt.Supp.
63	11	F	No	Lt.Supp.	+ 2.75 +0.50 x 135	+ 5.0 +2.0 x 45	3.0	6/60	6/36	Lt.Supp.
64	11	F	No	Lt.Supp	+ 2.75	+ 6.0	3.25	6/24	6/18	Fusion
65	11	M	No	Fusion	+ 1.50	+ 3.50	2.0	6/12	6/9	Fusion
66	11	M	No	Lt.Supp.	+ 1.50	+ 4.0 +0.50 x 180	2.75	6/24	6/12	Fusion
67	12	M	No	Fusion	0 -3.0 x 90	+ 0.50	2.0	6/18	6/18	Fusion
68	12	M	No	Fusion	+ 1.25	- 1.0 -0.50 x 90	2.50	6/18	6/9	Fusion
69	12	F	Yes	Fusion	- 1.0 -1.0 x 180	+ 1.50	3.0	6/18	6/12	Fusion
70	12	F	No	Lt.Supp.	+ 2.0	- 1.0	3.0	6/24	6/12	Fusion

71	12	F	No	Rt.Supp.	- 1.50	+ 2.0	3.50	6/24	6/9	Fusion
72	12	M	No	Lt.Supp.	+ 1.50	- 2.0 ---------- -1.0 x 90	4.0	6/60	6/24	Lt.Supp.
73	12	M	No	Lt.Supp.	+ 1.0 ---------- +0.50 x 180	- 3.0 ---------- -1.0 x 180	4.75	6/60	6/18	Lt.Supp.
74	12	F	No	Rt.Supp.	- 6.0 ---------- -2.50 x 180	- 0.50 ---------- -1.0 x 135	6.25	6/60	6/60	Rt.Supp.
75	12	M	Yes	Fusion	+ 2.50	+ 3.50 ---------- +1.50 x 135	1.75	6/18	6/18	Fusion
76	12	M	No	Lt.Supp.	+ 2.0 ---------- +1.0 x 135	+ 5.0 ---------- +1.0 x 45	3.0	6/36	6/36	Lt.Supp.
77	12	M	No	Rt.Supp.	+ 5.50	+ 2.50	3.0	6/36	6/24	Rt.Supp.
78	12	M	No	Rt.Supp.	+ 5.50 ---------- +1.50 x 180	+ 2.75 ---------- +1.0 x 180	3.0	6/36	6/36	Rt.Supp.
79	12	M	No	Rt.Supp.	+ 5.50 ---------- +1.50 x 90	+ 2.75	3.50	6/60	6/60	Rt.Supp.
80	12	F	No	Rt.Supp.	+ 7.0 ---------- +1.0 x 180	+ 3.0	4.50	6/60	6/60	Rt.Supp.
81	12	F	No	Rt.Supp.	+ 3.50	+ 1.0	2.50	6/24	6/12	Fusion
82	12	F	Yes	Fusion	+ 4.0	+ 1.0	3.0	6/18	6/12	Fusion

Table (17): Showing the analysis of the 12 cases that received occlusion, then training by the CAM visual stimulator.

Case No.	Age	Sex	Consa-ng.	Binocular vision W.4.d. Test	Refraction R.E.	Refraction L.E.	Amount of Aniso-met. (D.)	V.A. of amblyopic eye: After Refract.	After Occlusion	Period of occlusion	After CAM Training	Binocular vision after treatment
1	6	F	Yes	Fusion	+ 3.0 / +1.0 x 90	+ 5.0 / +1.50 x 90	2.25	6/18	6/9	(6 wks)	6/9	Fusion
2	7	F	No	Fusion	+ 2.50 / +1.0 x 90°	+ 1.0	2.0	6/18	6/12	(4 wks)	6/12	Fusion
3	8	M	Yes	Lt. Supp.	0 / -1.0 x 135°	- 3.0 / -2.0 x 45°	3.50	6/24	6/18	(5 wks)	6/18	Lt.Supp.
4	8	F	No	Rt.Supp.	+ 4.50	+ 2.50	2.0	6/24	6/18	(5 wks)	6/12	Fusion
5	9	F	No	Rt.Supp.	- 1.0	+ 2.0	3.0	6/24	6/12	(8 wks)	6/9	Fusion
6	9	F	No	Fusion	+ 3.50 / +2.0 x 90°	+ 2.25 / +0.50 x 90°	2.0	6/18	6/12	(5 wks)	6/12	Fusion
7	10	F	Yes	Rt.Supp.	- 2.0 / -1.50 x 90°	+ 2.0	4.75	6/60	6/18	(8 wks)	6/18	Rt.Supp.
8	10	M	No	Lt.Supp.	0 / -1.0 x 90°	- 5.0 / -2.50 x 90°	5.75	6/60	6/18	(7 wks)	6/18	Lt.Supp.
9	10	M	No	Lt.Supp.	+ 2.25	+ 5.0	2.75	6/24	6/18	(4 wks)	6/18	Fusion
10	12	M	No	Rt.Supp.	+ 0.50 / -2.0 x 90°	+ 1.50	2.0	6/36	6/18	(6 wks)	6/12	Fusion
11	12	F	No	Lt.Supp.	+ 1.0	- 2.50 / -1.0 x 90°	4.0	6/60	6/24	(5 wks)	6/24	Lt.Supp.
12	12	M	No	Lt.Supp.	+ 2.0	- 3.50	5.50	6/60	6/18	(8 wks)	6/18	Lt.Supp.

DISCUSSION

DISCUSSION

In this work the refraction of 1854 children up to twelve years old showed that the incidence of anisometropia of more than one diopter is 14.185 % (Table 1) which is different from the incidence reported by other investigators.

Mc Neil (1955), found that the incidence of anisometropia is 8.93% which is lower than our incidence. This is because he considered anisometropia as a difference of 2 diopters or more in a spherical or spherocylinderical error and 1.50 diopters or more in an astigmatic error.

The incidence reported by Gawdat (1976), was 0.908% as he considered anisometropia as a difference of more than 4 diopters between the refraction of both eyes.

Ingram et al. (1979), reported that the incidence of anisometropia is 7.0%. Again they considered anisometropia as a difference of one diopter in the spherical or cylinderical difference between both eyes.

We think that our incidence is higher than the incidences reported by other investigators for the following reasons:-

* The different opinions in considering the definition of anisometropia among the authors as stated before.
* The number of cases studied in each report was variable:-
  - MeNeil (1955), studied 1220 cases.
  - Gawdat (1976), studied 1401 cases.
  - Ingram et al. (1979), studied 186 cases.
* Consanguinity between the parents is more common in our community than other countries and as stated by Duke Elder (1970), that the aetiology of anisometropia is clearly genetically determined.

This idea is supported by our result that 19.77% of the anisometropic children studied in this work have a consanguinity between their parents.

We found that anisometropia is more common in females than males (58.56% and 41.44% respectively) Table (2).

This is supported by Gawdat (1976), who found that the incidence of females to males is 69.78 % and 30.22% respectively which is near to our findings.

We could not report the exact incidence of anisometropic amblyopia because many of the anisometropic cases (12 cases) did not return back to prescribe glasses for them. But we may say that out of the 1854 children, the number of anisometropic amblyopes was 109 cases (5.88%).

Downing (1945), reported that the incidence of uniocular amblyopia without strabismus is 1/70 (1.43%) which differs from our findings.

Adelstein and Scully (1967), on the the other hand, reported its presence in 4% of children which is close to our incidence.

We think that our incidence is higher because there is lack in the very early discovery of anisometropia which requires a routine ophthalmic examination of all children at preschool age in order to avoid the development of amblyopia by early detection of cases.

This work showed that the occurrence of amblyopia among hypermetropic anisometropes is much higher than its occurrence among myopic anisometropes (55.13% and 37.42% respectively). Table (7).

This is because the myopia is rarely present in early childhood but develops later so that the eyes have acquired some degree of association, possibly owing to the fact that the child can see close objects clearly thus preventing disuse even when the myopia is present at birth.

In the hypermetropic anisometropes, on the other hand, normal binocular function is less likely to develop, perhaps because the refractive error is at its maximum in early age when binocularity should be developing (Jampolsky et al., 1955).

We found that anisometropic amblyopia is more common in males than females (52.29% and 47.71% respectively), but we think that this difference is very little and is of no significance and we can say that anisometropic amblyopia occurs nearly equal in males and females (Table 9).

This work showed that 27.52% of anisometropic amblyopes have consanguinity between their parents. So, the occurrence of cases with consanguinity among anisometropic amblyopes is higher than ordinary anisometropes (27.52% and 19.77% respectively). This may indicate that not only the aetiology of anisometropia is genetically determined but also the genetic factor has a definite role to play in the occurrence of amblyopia.

The training of the amblyopic eye of each of 82 anisometropic amblyopes by the CAM visual stimulator showed that 40 cases (48.78%) achieved visual acuity 6/12 or more (Table 10).

Campbell and his co-workers (1978), reported

that out of 50 cases, 73% achieved 6/12 or more,which is higher than our cases because most of the cases treated by Campbell and his co-workers had previously undertaken conventional or minimal occlusion.

Willshaw et al. (1980), reported that 73% of the children who had received no previous amblyopia therapy achieved 6/12 or more by training of the amblyopic eye by the CAM visual stimulator.

El-Sayed and Sobhy (1981), reported that 75% of the twenty children studied showed considerable improvement in the visual acuity of the amblyopic eyes when trained by the CAM visual stimulator, but their cases included only a difference in refraction of 1.0 - 2.50 diopters in spherical or one diopter in cylinderical power.

We think that our percentage of success in the training by the CAM visual stimulator is lower than the percentages reported by other investigators for the following reasons:-

* We have a large number of cases (82 cases).
* All the cases received the training were of anisometropic amblyopes. So, the amount of diopteric differences was variable (extending up to more than 6 diopters), which would be reflected on the depth of amblyopia and subsequently on the visual acuity improvement after training.
* Our amblyopic cases included 33 cases of hypermetropic anisometropic amblyopes, and we showed that the percentage of improvement to 6/12 or more among hypermetropic amblyopes is 27.27 % (Table 15) which is different from the percentage among myopic amblyopes (Table 14) which is 59.52 %.

We found that females improve in visual acuity and binocular vision more than males (Table 13):-

- 51.35 % for visual acuity and 27.03 % for binocular vision among females.
- 46.67 % for visual acuity and 26.67 % for binocular vision among males.

We think that the reason for this is that females obey the instructions as wearing their spectacles, concentrate with the grating stimulation more than males.

In order to see if the training by the CAM visual stimulator improves the visual acuity of the amblyopic eye after occlusion therapy, we found that only 3 cases out of 12 cases had further improvement in their visual acuity by only one line in the test chart which we consider as a minimal improvement.

We think that training of the amblyopic eye by the CAM visual stimulator gives improvement in the visual acuity which is not more than occlusion therapy alone but its value lies in that it is a short term therapy during which we have control and good observations of the cases under training, whereas on the other hand, occlusion therapy alone causes discomfort and psychological distress for children specially at school age and we have no control on keeping the sound eye occluded.