1928.

WESTERN AUSTRALIA.

DEPARTMENT OF PUBLIC HEALTH.

STATE PSYCHOLOGICAL CLINIC.

ANNUAL REPORT

FOR THE

YEAR JUNE, 1927-28.

Presented to both Houses of Parliament by His Excellency's Command.

[THIRD SESSION OF THE THIRTEENTH PARLIAMENT.]

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THE STATE PSYCHOLOGICAL CLINIC.

ANNUAL REPORT FOR THE YEAR ENDING 30th JUNE, 1928.

1. INTRODUCTION.

I have the honour to submit the following Report upon the work of the State Psychological Clinic and associated activities.

The chief task which taxed our energies this year was the accumulation of data respecting the incidence of mental defect in Western Australia. The labour involved in an inquiry of such magnitude had been so great for the first year when the Clinic itself had to be equipped and organised, the scope of its activities defined, and a Mental Deficiency Act drafted. Nevertheless, at the instance of the Minister for Education, a preliminary survey of the school population had been made, in such fashion that further data could be added in following years to improve the accuracy of the tentative finding. A discussion of results obtained so far and of the significance of the index, 2.35 per cent., will be found in the section of this report devoted to our work for the Education Department.

Restandardisation of Tests.

Last year several important tests were re-standardised for Western Australia. Further work of this kind was carried out during the last twelve months. The special task of re-standardising the valuable Pressey Test of emotionality was only possible by virtue of the courtesy of the University authorities, who made available for this purpose some £15 of the grant for psychology. This investigation was so carried out as to form a concrete illustration, for students in Psychology, of the statistical methods employed in framing a mental test and in ascertaining its reliability and the limitations of its usefulness. This permanent illustration, comprising working papers, charts and correlation tables, proved its value when University students were considering the more technical aspects of psychology. Much time was saved, and statistical methods were more easily grasped. Incidentally, the investigation established the value of the Pressey *Fears* test as a means of identifying children who fail to progress satisfactorily in school, in spite of fair ability in a number of subjects. This group of children included emotionally immature individuals unlikely to adjust themselves adequately, later on, to everyday situations, unless remedial measures proved effective. (Such improvement can be looked for when the immaturity is due to psychogenic arrest, provided there is early recognition of the condition. When it is primary, no alleviation is possible. This fact makes recognition during the school period of paramount importance; for such individuals become social misfits, and prognosis is grave.)

University work.

The Course in experimental Psychology at the University was continued this year. Although the equipment is not yet adequate for the needs of laboratory courses, yet additions were made during the year that eased the situation. A large number of books dealing with psychology have been added to the library shelves, so that present students have a considerable advantage over their predecessors when preparing papers and abstracts.

The need for a third-year course was felt more strongly; and two students, finding that no further work was offering at this University, made arrangements to go to Europe and America for advanced work in this subject. While the travel overseas will be of great advantage to those students, it is a pity that only those fortunate enough to secure overseas scholarships, or in a position to afford the expense of study abroad, can satisfy the interest which they feel in the subject.

Of those who completed the year's work in November, 1927, two students gained distinction, and five passed.

Urgent need for provision for Epileptics.

In addition to the urgent needs voiced last year, we have to put forward an appeal for some provision for epileptic children, other than their accommodation in the Claremont Mental Hospital. A number of distressing cases have been in attendance at the Clinic during the past twelve months. Every institution for children has been approached. Several have strained a point, in view of the pitiful nature of the cases, in order to make trial of these afflicted defectives. Unfortunately, the responsibility is too heavy for institutions by no means over-staffed, lacking the especial conveniences desirable with epileptics, and anxious about the effect upon their other charges of the erratic behaviour so characteristic when seizures are frequent. After a few days or weeks, each of the most difficult children was sent home. Although epileptics are often intelligent and tractable in the periods when few seizures occur (and these periods may cover months), recurrence of fits often means morose, mischievous, destructive, and even cruel behaviour, for the time being. To minimise the severity and frequency of the attacks, certain drugs are helpful; but a *most important* preventive measure is pleasant occupation in congenial sheltered environment, where general health is carefully supervised, and where a competent staff notes the first sign of impending seizures and takes appropriate steps (a) to prevent interference with others and injury to self, and (b) to eliminate all factors likely to influence the patient adversely. In one home, a little boy of 4½ years was violently attacked by his epileptic brother of 11, during a sudden relapse. His parents are harassed and home life is spoiled for the other children. Yet the lad cannot be cared for anywhere in the State unless he is certified insane, at 11 years of age.

The number of epileptics for whom we are appealing is 23. If a suitable cottage were erected in the

bills, it would form the nucleus of later provision. No great expense need be entailed; but selection of a competent staff is essential.

Work within the Clinic.

Work within the Clinic has proceeded upon similar lines this year, though photographic work became necessary owing to the large number of cases dealt with and the difficulty of determining progress after an interval. In spite of the recognition last year that the staff was over-worked, and that for fully one-third of the time the Psychologist was engaged in routine tasks and calculations which a junior assistant could well perform, no additions have been made to the staff. Treatment of nervous and difficult individuals is an important feature of our work; and it should be realised that a jaded overworked staff is not a factor making for success.

The number of interviews, individual examinations and treatments has increased during the past year, although cases referred by the Child Welfare Department and by the Medical Officer of Schools have been somewhat fewer. The increased number of private cases more than made up for these decreases.

The demands upon the Clinic have been much greater than could be met. Only urgent cases have been accepted. Such limitation of service must continue until the staff is increased. The demand shows every indication of being a steady and even an increasing one. The Education Department has scarcely begun to avail itself of the facilities of the Clinic, though a large number of sporadic cases have been dealt with. No special classes have been organised, and no inspection of work with defectives has been undertaken. (Such service is given by the Tasmanian Clinic, where an assistant Psychologist has been appointed.) The Gaol has not instituted routine examinations, but a room is now in readiness where such examinations as are thought to be desirable by the prison authorities can be carried out satisfactorily. The School Medical Officers do not as a group refer cases to the Clinic as there is known to be such a long waiting list, though one of their number has been in the habit of doing so. The Children's Court has not adopted psychological examination as a routine procedure, though it is their practice to refer selected cases.

For all these departments, then, only a very small percentage of the work to be done is undertaken at the present time. With an increased staff, three times the present yearly output of work would be practicable, and even then the community need would be largely in excess of the services provided.

Cases of Superior Endowment.

There was a noteworthy increase in the percentage of children of superior endowment who were brought to the Clinic for educational and vocational guidance (1927, 2 per cent; 1928, 8 per cent.). This branch of our work is as yet little known; but it is likely to become as prominent a feature of the local programme as it is in Clinics overseas, where advice regarding courses to be followed and the type of discipline to be employed with these children, who are to be community leaders by and by, is considered to be of vital importance.

Try-out of Dr. House's technique.

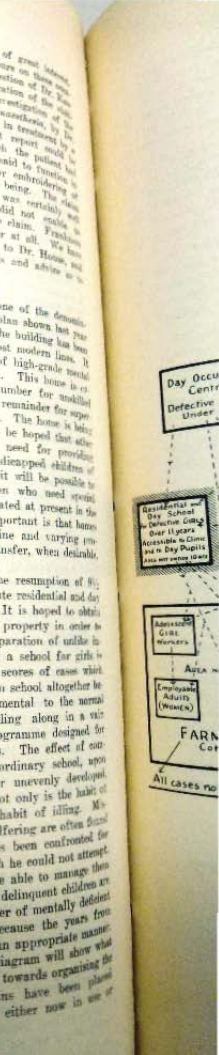
A piece of work which was of great interest, although it involved only a few hours on the part of various, was carried out at the suggestion of the Director Mess, with the cordial co-operation of the Psychiatrist. This was an investigation of the claim made in the *Journal of Anæsthesia* by Dr. E. House, that, at a certain stage in treatment by specified serum, only brief exact report would be given of any happening in which the patient had participated. Consciousness was said to return in such wise that no modification or embroidering of facts was possible, for the time being. The claim seemed to be well-attested, and was certainly worth a try-out. Three trials did not enable us either to confirm or to refute the claim. Failure alternated with refusal to answer at all. We have therefore submitted our results to Dr. House, and await with interest his comments and advice as to the technique employed.

Homes for Defectives.

We are glad to report that one of the demonstrational homes projected in the plan shown last year is now in course of erection. The building has been designed with care upon the most modern lines. It is intended to meet the needs of high-grade mental defectives of the Catholic faith. This home is expected to prepare a certain number for unskilled work in the community, and the remainder for supervised work upon a farm colony. The home is being erected for boys only. It is to be hoped that other denominations will realise the need for providing similar accommodation for handicapped children of their own faith. In this way it will be possible to accommodate far more children who need special training than can be accommodated at present in the Army Home. What is also important is that homes with different types of discipline and varying programmes will make possible transfer, when desirable, from one home to another.

I am also glad to report the resumption of 9½ acres of land suitable for a State residential and day school for handicapped girls. It is hoped to obtain several acres adjacent to this property in order to provide adequate space for separation of unlike individuals. The need for such a school for girls is acute. We have on our files scores of cases which have either been exempted from school altogether because their presence is detrimental to the normal children, or who are struggling along in a vain attempt to benefit by a programme designed for children with different powers. The effect of compulsory attendance at the ordinary school, upon minds which are immature or unevenly developed, cannot fail to be harmful. Not only is the habit of failure formed, but also the habit of idling. Mischievous tricks, truancy and pilfering are often found to develop when a child has been confronted for years together with tasks which he could not attempt, though the other children were able to manage them successfully. By no means all delinquent children are mentally deficient, but a number of mentally deficient children become delinquent because the years from six to 14 are not occupied in an appropriate manner.

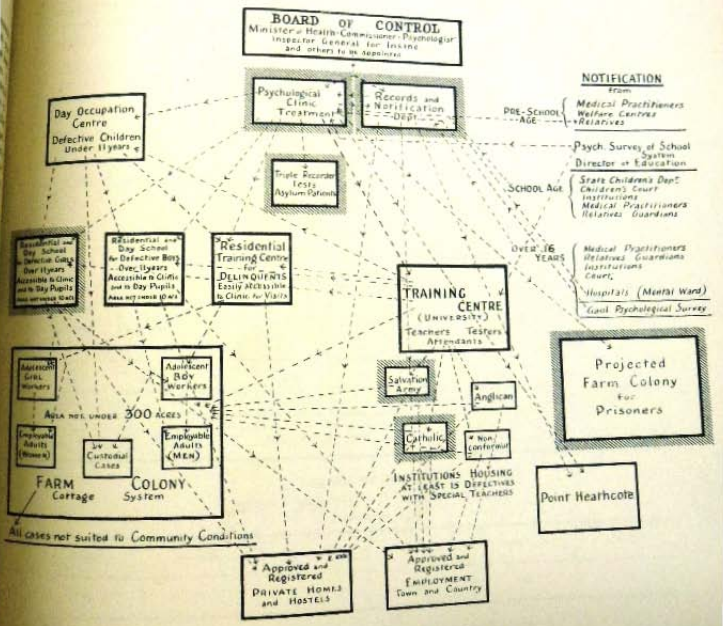
Reference to the attached diagram will show what steps have already been taken towards organising the Department. Shaded margins have been placed round the centres which are either now in use or being prepared.



DIAGRAM

TO SHOW ORGANISATION OF FULLY EQUIPPED DEPARTMENT

Portions with shaded border are now in use or under preparation.



Acknowledgments:

It is our very pleasant duty to acknowledge once more our indebtedness to the visiting doctors. The large increase in the number of cases dealt with by the honorary physician is proof of his generous response to the needs of the Clinic.

We have made full use of the privileges accorded us by the Perth Hospital, the Children's Hospital, the Perth Dental Hospital, and the Pathological Laboratory; and wish to thank the respective superintendents very heartily for their courtesy and kindly co-operation.

Our work for the Education Department and for the Court was made pleasant and relatively easy because of the interest manifested by the various officers with whom we had to deal, and because of their readiness to help us in every possible way.

This year various societies and individuals have come to our help in particular cases. I should like to express indebtedness to the Ugly Men for their generosity in contributing towards the cost of convalescence of a nervous patient. We are also indebted to the Matron of the M.C.I. Convalescent Home for her courtesy and help in regard to a girl of difficult disposition; and also to the Secretary and Matron of the Y.W.C.A. for similar help.

2—ACTIVITIES OF CLINIC.

Interviews.

This year, 395 parents, relatives and other guardians were interviewed personally by the Psychologist. Much valuable help was given by the parents in their description of the response of the patient to others in the home, to neighbours, and to playfellows. The individual's appetite, sleep, and general health were described, and this proved of great assistance in determining to what extent the behaviour difficulty was a permanent or temporary one. As before, guardians were found to be anxious to do the best for their charges. Many of their returned signals and again to report progress and ask further advice. Numerous letters were sent to parents at a distance to supplement suggestions made in the interview.

Lectures.

During the previous year lectures and addresses were given to some 13 associations. In this way it was hoped to reach a wider group than could be advised in single interviews. Because of pressure of work it was not possible to give the lectures asked for this year, though three societies were so insistent that lectures were given.

Leaflets.

It is greatly to be regretted that further pamphlets continuing the series already issued have not been prepared. The work entailed in compiling these publications is very considerable, and has perforce been omitted. As soon as an increase of staff is arranged for, further leaflets will be prepared.

Classification.

NUMBER OF CASES FROM VARIOUS SOURCES.

SUMMARY 1.

A.—Child Welfare Department.	B.— Medical Inspection.	C. Court Cases.	D.— Private Cases.	E.—Gael.	F.—School Survey.	G. Total.	H.—Additional individual measurements.	I.—Awaiting examination.
41 individuals	40 individuals	28 individuals	128 individuals	27 individuals	380 individuals	644 individuals	370	100 individuals
Girls. Boys.	Girls. Boys.	Girls. Boys.	Girls. Boys.	Adults (male)				
18% 82%	47% 53%	18% 82%	20% 80%	100%				

DEGREE OF DEFECT.

INDIVIDUAL EXAMINATION OF—A. B. C. D. and E. ABOVE.

Summary 2.

Bright.	Average.	Backward.	Morons.	Imbeciles.	Idiots.
22	76	56	86	43	14

AGE OF CASES EXAMINED INDIVIDUALLY—A. B. C. D. and E. ABOVE.

Summary 3.

Age.	No. of Cases.
Up to 6 years...	20
7 years to 11 years	92
12 years to 16 years	114
Over 16 years	71

DISTRIBUTION OF INTELLIGENCE QUOTIENTS.

Individual Examinations.—A, B, C, D, and E above.

Summary 4.

I.Q.	Child Welfare Department.	Medical Inspection.	Children's Court.	Private Cases.	Gaol.	Total.
	%	%	%	%	%	%
...70 ...	31·7	22·5	24·6	30·0	22·2	25·1
70-89 ...	43·9	62·5	42·6	22·0	33·4	45·3
90-109 ...	24·4	15·0	24·6	36·5	40·7	26·2
Over 109 ...	...	...	8·2	12·5	3·7	3·4
						100·0

PERCENTAGES OF THE VARIOUS TYPES IN THE SEVERAL GROUPS—SEPARATED ACCORDING TO SEX.

Summary 5.

	Mental Defect. (Uncomplicated)		Mongoloid Type.		Macrocephalic.		Microcephalic.		Epileptic.		Psychotic.		Nervous Heredity.		Nervous Instability.	
	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
A ...	5	30	3	23	6	7	0	0	0	0	7½	2	7½	16	0	0
B ...	5	17½	0	0	5	15	0	2½	0	0	0	0	15	30	5	5
C ...	34	8½	0	0	21	14½	0	2	0	34	44	14½	63	29	22	9
D ...	24	12½	21	23	14	11½	3	3½	21	24	3	37	7	16	11½	9
E ...	0	7½	0	0	0	19	0	3½	–	0	–	14½	–	29	17	15

A.—Child Welfare Department. B. Medical Inspection. C.—Court Cases. D.—Private Cases. E.—Gaol.

Total number—A, B, C, D, and E above :—

Macrocephalic.		Microcephalic.		Mongoloid.	
F.	M.	F.	M.	F.	M.
8	41	4	7	4	6

PHYSICAL DEFECTS FOUND IN CASES EXAMINED INDIVIDUALLY.

Summary 6.

1.	Nose and Throat trouble ...	...	...	65	6.	Epilepsy	7
2.	Ear defects ...	...	...	12	7.	Paralysis	1
3.	Eye defects ...	...	...	36	8.	Heart trouble	1
4.	Dental defects ...	...	...	32	9.	Chest troubles	17
5.	Speech defects ...	...	...	23	10.	Malnutrition	12
							39

These figures include cases medically examined at the Gaol.

Summary 7.

Frequency of nervous and unsatisfactory behaviour.

	Child Welfare Department.	Medical Inspection.	Children's Court.	Private Cases.	Gaol.
Night terrors	4	4	8	30	
Enuresis	10	4	9	27	
Impulsiveness	...	6	9	8	
Cruelty	1	2	6	...	
Destructiveness	2	1	3	...	
Lying	3	...	6	4	
Thieving	2	6	20	...	
Truancy	8	5	36	...	
Maladjustment	...	2	14	...	
Sex	2	...	12	...	
Apathetic	1	2	20	...	
		7	...	...	

Summaries 2—6 include all Court Cases (62 adults) examined to June, 1928.

Medical and Psychiatric Examination.

Throughout the past twelve months the Honorary Physician to the Clinic has attended regularly every Thursday and has afforded valuable knowledge of the general health of individuals, whose behaviour was causing anxiety. In a number of cases toxic conditions were found to be present. In others constitutional causes had left their mark upon the nervous system.

A number of cases again displayed symptoms of difficulty over and above mental defect. These individuals were examined by the visiting Psychiatrist.

The recommendations of the Physician and the Psychiatrist were supplied to the guardians, or to the departments referring the cases. The following is the summary of attendances for this year and last:—

	1926-1927.		1927-1928.	
	Individual cases.	Total Attendances.	Individual cases.	Total Attendances.
Honorary Physician	83	102	186	243
Visiting Psychiatrist	60	72	50	76

Psychological examinations were carried out for the most part individually, but three groups were examined during the year. It has been found that less is known about children at the ages of 11, 13 and 15 than about children at any other age. No special tests have been standardised either in America or Britain for children of these ages, although norms have been prepared for the intermediate years. As our delinquent group includes numerous children of 13 and 15 years, it is important to sharpen the tools employed in the study of these individuals. In order to do that, control groups in the ordinary school have been examined. So far, we have collected performances from 224 11-year old children whom we regard as a pre-adolescent group.

Routine Examinations.

In many clinics overseas there are routine examinations that have not yet been provided in Western Australia. Amongst the most important of these are—

1. The examination of basal metabolism.
2. The study of endocrinal imbalance.
3. Urinalysis.
4. Examination of stained blood films and haemoglobin estimations.
5. Routine Wassermann Tests.
6. Spinal fluid examinations.

The following is adapted from an article by Dr. William Healy:—

It is essential in each case to rule out epilepsy, chorea, hysteria, psychosis, and other factors which are often active in producing behaviour suggestive of defect. Where we are dealing with defective delinquents the medical study of the individual is particularly important.

Dr. H. Gosline, Institute for Social Adjustment, Texas, says:—

My personal experience convinces me that every case should have a thorough endocrinal survey. While I hold no brief for the relationship between the vegetative nervous system, the glands of internal secretion, and mental functioning, the fact that 8% out of 1,500 cases showed abnormalities of growth is evidence enough, in my opinion, to warrant our paying more attention to this problem than we are now in most parts of the world.

Dr. M. Schlapp, Director, New York Children's Court Clinic, wrote as follows:—

From thousands of clinical studies we know that a very large number of criminal acts are committed by persons suffering from glandular and nervous disturbance. It would not be surprising if investigation revealed that one-third of all present convicts were suffering from glandular or toxic disturbance which produced emotional instability. It is important to remember that their troubles are in many cases amenable to treatment now fairly well understood.

3. a—REPORT OF VISITING PSYCHIATRIST.

The actual number of patients dealt with at the Clinic during the year was 50.

This group includes such varying conditions as subacute mania, dementia præcox, epilepsy, neurasthenia, as well as cases of uncomplicated mental defect.

In only two cases was it necessary to recommend transfer to a special hospital for mental cases. One of these patients has recovered and is now at home with relatives. It is understood that she is doing well.

The cases which presented themselves have been interesting in various ways. For example, a number of Wassermann Tests were done, in some cases with rather surprising positive results. It is concluded that it is highly desirable to do a routine Wassermann Test in every new case attending the Clinic.

A number of patients were subjected to a radiograph examination. Two cases showed definite evidence of old fracture.

The service of the staff of the Perth Public Hospital and of the Children's Hospital, in carrying out these special examinations, have been greatly appreciated. The staff of these institutions have been at times most willing helpers, and have rendered valuable assistance to the Clinic.

(Sgd.) J. BENTLEY, M.D.,
Inspector General of Insane.

b REPORT OF THE HONORARY PHYSICIAN.

During the past year I have attended at the Psychological Clinic on Tuesday mornings, and have medically examined children referred to me by Miss Stoneman.

243 examinations have been made of 186 individual patients. These figures are more than double those for the previous year ending 30th June, 1927, which were 102 examinations of 83 patients.

Among physical defects requiring attention were the following:—

Nose and throat conditions	61
Ear conditions	10
Eye conditions	29
Dental troubles	23
Speech defects	7
Epilepsy	1
Paralysis	16
Heart troubles	30
Malnutrition	12
Chest conditions	3

Pathological specimens have been examined as required. Wassermanns. Tests was ordered in 28 cases with three positive results. It is proposed to increase gradually the number of such tests ordered until practically all cases passing through the Clinic have the blood examined in this way. This, however, throws a considerable amount of work on the Health Department. Without a routine Wassermann Test some cases of latent Congenital Syphilis will inevitably be missed.

Change of environment has been recommended in 23 cases.

I feel that the valuable work being done at the Clinic is gradually becoming better known amongst the medical profession, and that the necessary co-operation with the private practitioner is improving. The co-operation of *Health* Department, Children's and Perth *Hospitals*, and the *Dental Hospital* we have already, and many patients are sent to these institutions for treatment.

(Signed) R. H. CRISP, M.D.,
Honorary Physician to the Clinic.

REPORT OF NURSE-SOCIAL WORKER.

The work has two chief branches: within the Clinic, and outside it.

The outside work is steadily growing; and, because the homes concerned are scattered throughout many suburbs, it is difficult to see each case as regularly and as frequently as is desirable. 302 visits were paid during the year, and 147 personal inquiries were made at various schools, both State and private. I should like to thank the many teachers who provided me with important and helpful details regarding children's progress and behaviour.

The homes visited were very varied. Some were squalid and neglected, and apparently the parents were incapable of ordinary household management. Yet, even here, there was affection and anxiety to help the children, though there was very imperfect understanding of the real trouble. Other homes seemed happy and well cared for. It seemed surprising that unsatisfactory behaviour should be complained of in children having so many advantages as those of this group.

Only in five cases was there disinclination to carry out recommendations. One parent was a foreigner who could not understand why we were making inquiries. Another left the district and was lost trace of. Another mother refused to incur any expense, and she has had considerable trouble with the school authorities also because of her attitude. The remainder seemed harassed and too overworked to take special measures.

Within the Clinic physical measurements have been made of every case examined by the Physiologist or doctor. These measurements include height, weight, vital capacity, grip, and muscular movements. Patients to be medically examined were prepared for this examination, and cases sent with particulars gleaned from school and records attending to up for the information of the staff.

In conclusion, I should like to point out that there are no less than 302 names on my list for Clinic work; and a number of these children need remedial exercises. Even were the distances to be travelled far less than they are, this number would be too great for a single nurse. If thorough work is to be attempted, I respectfully urge the appointment of additional nurses.

(Signed) L. M. BAILEY,
Nurse-Social Worker.

4.—PSYCHOLOGICAL EXAMINATION OF DELINQUENTS.

a. Juvenile.
b. Adults.

a. We have studied a group of 61 cases from the Children's Court. The median age was 13 years seven months ± two years one month; the median intellect was 11 years one month ± one year 11 months, showing a general retardation of 1½ years in mental development. Thus the Intelligence Quotient for the group was 82 ± 13 instead of 100 ± 10.

These delinquent cases, therefore, differ from the normal, not only in that they are mentally backward, but that there is more variability than there would be in children of satisfactory behaviour. It is interesting to note that in *power to make a plan* (as tested by the Porteous Mazes) the group has a median credit of 11 years ± two years (compare this with the actual median age of the group—13½ years). In emotional maturity, poise and good sense, the median credit was 10 years ± two years four months. Note that the development of steadiness and self-control is inferior even to that of intellect.

b. A group of 27 prisoners in Fremantle Gaol was examined. The median age of the group was 22 years nine months ± one year 10 months; the median intellect was 13 years 11 months ± one year seven months; the median intelligence quotient was 86 ± eight. Thus the group was seven years older on the average than the Children's Court group, but only 2½ years older in intellect. The group has an intelligence quotient slightly nearer the average than the juvenile group, and has less variability. In both groups three-quarters of the cases have an intelligence quotient below 95. Among the adult prisoners, practical planning, as measured by the Porteous Mazes, gave a median capacity of 13 years ± one year. Their common sense, poise, and self-control gave a median credit of 10½ years ± three

years. It is in this direction that the adult prisoners have shown the least advance upon the juvenile group, and the least improvement in variability. Speed of reaction was investigated in the adult prisoners, the median credit being 14 years ± 2½ years, which, in the difficulty of this test only a small number of the juvenile group were examined in this respect, so we cannot make a comparison between the groups in this connection.

The cranial measurements of the gaol cases were remarkable in two respects: 1. The noticeable proportion of very large heads. 2. The fact that height of head was practically low as compared with measurement in any other direction. The following table shows a comparison between the Gaol group and a normal group of adolescent boys (Izett) in respect of cranial measurements:—

HEAD MEASUREMENTS.

COMPARISON BETWEEN PRISONERS AND OTHER YOUTHS.

—	Height.	Width.	Length.	Cranial Capacity.
Normal group of adolescent boys (Izett)	143 ± 4¼	147 ± 3	188 ± 3	1499 ± 53
Gaol group ...	144 ± 2¾	151 ± 3	194 ± 3¼	1540 ± 31

Inspection of the figures indicates that the greatest gains were in length and in width. It is amusing to recall the popular expressions employed to express imprudent or inadequate behaviour, "shallow-pated," and "fat-headed."

5.—SYLLABUS OF TRAINING.

for Teachers of Mentally Deficient Children.

As an outcome of a conference held in July, 1927, the State Psychologist was desired to prepare a syllabus of training which would be adequate for specially selected teachers in preparation for the work with the mentally deficient. The syllabus is appended.

Note 1.—It is not expected that the required lectures and demonstrations in the numerous crafts should make each teacher proficient in each of these branches. It is expected that this preparation will enable each teacher to supervise individual work, practice, and preparation in each of the crafts *between visits of special instructors.*

Note 2.—This course, covering six weeks' work, is prepared with the idea that only trained Kindergartners with at least three years' satisfactory practical experience, or trained teachers with at least three years' satisfactory work in the Lower school, would be considered eligible.

Note 3.—The specially selected group will consist of applicants who have been interviewed and found to be of suitable personality, and to have good attitude towards the work.

Note 4.—The course should be supplemented by theoretical and practical examination of the candidates.

Note 5.—In order to induce highly qualified teachers to specialise in this important work, it is suggested that salary increases should be provided as merited according to an increasing scale from time to time until a maximum salary, appreciably in advance of what the candidate would receive in the ordinary school after the same period of satisfactory work, is reached.

The Syllabus covers three main features—

(a) Lecture work.
(b) Demonstrations.
(c) Practical Work.

A suggested Time-table would be as follows:—

Lecture Work:—9.50 a.m. to 11.30 a.m. each day. (Giving 60 Lectures in all.)
Demonstrations:—11.30 a.m. to 1 p.m. daily. (Giving 60 Demonstrations in all.)
Practical Work:— 2.30 p.m. to 4 o'clock daily. (Providing for 30 periods of Practice.)

(a) Lecture Work.

Course A.

(a) The nature and cause of the chief types of defect.
(b) The various degrees of defect.
(c) Types of training for Low-grade, Middle-grade and High-grade cases.
(d) Types of discipline suited to various grades.
(e) A study of typical individuals in regard to physical handicaps, intellectual handicaps, temperamental handicaps, and recreational needs. (15 lectures.)

Lectures to be given by the State Psychologist.

Course B.

(a) Apparatus and methods with High-grade cases.
(b) Apparatus and methods with Middle-grade cases.
(c) Apparatus and methods with Low-grade cases.
(d) Time-table arrangements.
(e) Continuity of treatment. Need for repetition.
(f) Importance of records of individual achievement and progress.
(g) How to make such records. Use of charts, mounting of photographs, etc.
(h) Importance of co-operation with relatives, attendants, and other teachers.
(i) Frequent conferences. Entries of information gained. (12 lectures.)

Lectures to be given by the State Psychologist.

Course C.

(a) Tendency to catarrh. (Nose drills, precautions, etc.)
(b) Frequency of digestive disturbances. (Train in mastication and daily routine.)
(c) Frequency of defective teeth. (Daily routine.)
(d) Frequency of ear defects. (Advice and consequent placement of child. If speech defects are also present, train the ear.)
(e) Tendency to eye weakness. (Advice. Act upon information received, and do not permit eye strain.)

(f) Muscular weakness. (Take precautions and special exercises as advised.)

(g) Tendency to heart weakness. (Cautions, re-drills, and out-door tasks.)

(h) Tendency to epilepsy. (Major and minor signs. Treatment at the time, and afterwards.)

(i) Frequency of nervous tics and neuroses. (Method of dealing with such cases.)

Lectures to be given by the Honorary Physician attached to the Psychological Clinic.

Course D.

(a) Speech training. Development of speech. Organs concerned in voice production.

(b) Remedial treatment for faulty voice production.

(c) Faulty pronunciation, articulation, stammering, stuttering, lisping, backward speech, etc.

(d) Speech defects due to severity of mental defect, coupled with physical handicap. Training in the use of significant gesture.

(e) Due to insufficient analysis of the difficulty and lack of appropriate training. Typical exercises.

(f) Differentiation between defects due to nervousness which are curable and those due to lack of appropriate training. Typical exercises. (Six lectures.)

Lectures to be borne out by demonstrations by special teacher of deaf children.

Course E.

Educational Theory.

(a) Revision of the chief tenets of Pestalozzi, Froebel, and Montessori.

(b) Visits to Kindergarten, Observation of Free Periods, Playgrounds.

(c) Course of Lectures and Demonstrations to be provided by Co-opted Lecturer to cover the songs, setting of tables, serving at table, the moving of chairs, closing of doors, general good manners; and associated lesson periods. (12 lectures.)

Course F.

Eurythmics.

(a) The value of eurythmics in the training of defectives.

(b) The imitation of, and appreciation of rhythms.

(c) The provision for success.

(d) The provision for individual effort. (Course to be illustrated by classwork.) (Six lectures.) (Three per week in the two weeks of the course.)

(b) Demonstrations.

Demonstrations of types of handwork of value in the education of mentally deficient children, and of methods of preparing typical articles.

Demonstration A.

(a) Care of, arrangement of, adornment of the home. (Simple tasks.)

(b) Kitchen equipment, bedroom equipment, dining-room equipment, and out-door equipment. (Simple articles.) (Eight periods.)

Demonstration B.

Woodwork.—From simple articles like sticks for the garden to toys and useful articles. (Six periods.)

Demonstration C.

Leather Work.—From simple articles like book-markers to bags. Cobbling. (Six periods.)

Demonstration D.

Wool and Paper Work.—Making woollen tassels, woollen balls. Stuffed rag dolls, and rag animal toys. Making paper heads, necklaces, and table mats. (Five periods.)

Demonstration E.

String, rope-making, and wire-work. Great variety of useful articles. (Five periods.)

Demonstration F.

Raffia and Cane-making. (Eight periods.)

Demonstration G.

Garden work. (Five periods.)

Demonstration H.

Book-binding or tinsmithing. (As practicable. (Five periods.)

Demonstration I.

Eatables. Sweets and other eatables for the Tuck shop. (Four periods.)

Demonstration J.

Eurythmics. (Four periods.)

Demonstration K.

Physical Culture. (If possible by Inspectress of Physical Culture.)

Finger work.

Wrist and ankle work.

Shoulder work.

Gait and general deportment.

As far as possible the course will introduce the various features in the form of play, rather than drill. (Four periods.)

6.—SPECIAL EDUCATION.

Type of Teacher.

No less an authority than Dr. H. H. Goddard considers that nowhere in the educational system is the difference between a good teacher and a poor one so important as in the case of defectives. Nowhere is the poor teacher capable of doing so much harm as with the mentally deficient. A teacher of defective children should understand them by virtue of first-hand experience, and by study (under instruction)

of the psychology of such individuals. Only such training can free the teacher from prejudices and grounds him *"to be led by the child* along his feeble-minded way." To attempt to lead him along the way of the normal child is to court failure.

Candidates for positions in the Special Schools should be successful teachers of normal children. Any teacher who on account of age or temperament is unable to change her point of view and acquire the attitude necessary for a teacher of defectives should not be selected for this work.

Goddard recommends the provision of good salary for special school work, so that teachers would have an inducement to prepare for it. Where zeal, enthusiasm and willingness to study the problems peculiar to special education are manifested, increases should be paid on a sliding scale until a maximum salary is reached, which is £100 higher than that of ordinary school work.

Few people realise the special ability, skill, and training required. Few realise the discouragements, difficulties and fatigue entailed by work in the Special School.

Separate Schools advised.

Where children are retarded in school merely because of lost time or illness, they should be placed with the intelligent but retarded children who are receiving special training to minimise their handicap. Groups of such children are found in the ordinary school and should be dealt with by the ordinary trained teacher.

Where children are mentally defective there is need for complete separation from the ordinary school classes and methods of instruction.

It is sometimes urged that parents will be unwilling to send their defective children to a separate school. This argument has been proved baseless. Where the Special School is a place in which something has been accomplished by the child, the parents have shown their eagerness to make use of it. An advantage which weighs much with parents is the relative immunity from teasing and victimisation when defectives are away from normal children.

Programme in Special School.

"Bookwork is almost entirely useless for special children. Work with them should be mainly practical for their minds do not readily deal with abstractions. As Goddard puts it, everything is abstract with them that does not concern those things that enter into their daily life and experience."

Grading should be as complete as numbers permit. The lowest grade children should be trained in simple habits, kept happy with simple action, rhythm, and games, and given special treatment to reduce their muscular handicaps.

Only the high grade cases, the morons, should devote time to reading, writing, and number work. Even among this group, there will be a number whose time can be spent more profitably. It should be remembered that manual work can be so systematised as to have high educational value. With adolescents who have attained their full mental capacity, definite vocational preparation should be undertaken.

Legislation.

The Mental Deficiency Act drafted last year has not yet been introduced, though the need for such legislation was stressed by the Advisory Board. Perhaps the fact that there is no legal impediment to marriage of feeble-minded persons in Western Australia is not realised or its significance is overlooked.

From information recently supplied by the Government Statistician we learn that marriages were contracted by a ward in this State by seven males under 30 years of age, and by nine females also under 30. These were all Western Australians by birth and two of the girls were only 15 years of age.

Compulsory education is of such long standing in Western Australia that few people old enough to attend school from 1909 on should be entirely illiterate. It is fair inference that the majority of the individuals so illiterate as to be unable to sign their names were so poorly endowed mentally as to be unable to profit by their opportunities.

One local mother, who is feeble-minded, has given birth to her ninth child. The eldest who is still in her teens is already a mother. The brightest of the nine is 18 months below average for his age. Two of the others have been before the court. This case does not stand alone.

8.—EQUIPMENT OF CLINIC.

During the year minor additions were made to the test material at the Clinic. One valuable addition was a camera suited for portraiture, which will be used with cases under treatment in order to have a record of progress achieved.

A number of recent text-books on psychology and its modern applications have been placed upon the shelves.

We are still greatly in need of an adequate supply of performance tests specially designed to test vocational fitness.

9.—SUMMARY OF WORK FOR CHILDREN'S COURT.

There was marked preponderance of boys over girls in the total delinquent group: 82 per cent. as against 18 per cent.

Forty per cent. of the cases came from homes where there had been unsatisfactory relations between parents, resulting in constant quarrelling, separation, divorce, or open immorality. The discipline in such homes is far from satisfactory as there is mutual interference, inconsistency and double standard.

6½ per cent. were immigrants, and 5 per cent. were of mixed race.

Family history in a number of cases revealed the presence of such conditions as:—

a. Epilepsy in parent or sibling, in 13 per cent. of cases.
b. Tuberculosis in 9.8 per cent. of cases.
c. Insanity in 6.5 per cent. of cases.
d. Feeble-mindedness in 6.5 per cent. of cases.
e. Marked alcoholism in 5 per cent. of cases.
f. Heart disease in 5 per cent. of cases.

When scrutinising the performances of delinquent individuals, it became apparent that tests of equal

difficulty, according to standard scales prepared for ordinary children, were not performed with equal ease by these children.

The table below enumerates tests in the various year-groups which were rarely succeeded with, though others in the same year-groups were performed satisfactorily:—

Stanford Revision of Binet-Simon Scale.

Year 7—Tying the bow-knot.
Year 8—Giving similarities.
Year 9—Telling the date.
Year 10—Drawing designs from memory.
Year 12—Making a superior plan.
Giving similarities.
Repeating digits in reverse order.
Year 14—Differences between President and King.
Arithmetical problems.

10.—SUMMARY OF WORK FOR CHILD WELFARE DEPARTMENT.

This department has the care of a very large number of children under 18 years of age, of whom the great majority are fortunately normal. It is difficult for officers who deal mainly with ordinary boys and girls to understand the slow, uncertain progress of the poorly endowed, and the special conditions and methods which are essential if even that slow improvement is to occur. It is difficult, too, for them to appreciate the inadequacy of some boys' conduct during reformatory periods, as a reason to prevent more satisfactory behaviour in children who may come into conflict with the law. When a wider understanding of these matters prevails we shall doubtless be able to ensure upon more definite grounds upon proper arrangements in institutions and State Wards who are defective or delinquent.

We are still unable to obtain routine information as to important matters affecting State Wards who have been certified as mentally defective or unstable. It is earnestly hoped that some satisfactory arrangement may be found in the near future which will ensure notification of impending discharges or leave, of absconding (even for a single day), of serious illness or injury, and of offence within the institution. We are indebted to individual officers of the Department for many courtesies, which we gladly acknowledge.

Forty-one individuals were examined (girls 15 per cent., boys 85 per cent.), as against 66 individual (girls 27 per cent., boys 73 per cent.) for the previous year. The following tables show the percentages of the various types and the distribution of Intelligence Quotients for the group:—

PERCENTAGES OF THE VARIOUS TYPES.

Mental Defect (Uncomplicated).	Mongoloid Type.	Macro cephalic.	Micro-cephalic.	Epileptic.	Psychotic.	Nervous Heredity.	Nervous Instability.
% 32	% 7½	% 7	% ...	% ...	% 10	% 17½	% 6

DISTRIBUTION OF INTELLIGENCE QUOTIENTS.

I.Q.	%
Below 70	31·7
70–89	43·9
90–109	24·4
Over 109	...

Perhaps the attached diagram will assist the departments we serve. It is designed to illustrate our need of all information bearing upon a given patient, in regard to whom advice is sought.

11.—SUMMARY OF WORK FOR THE EDUCATION DEPARTMENT.

"Seaforth" Special School.

More cases have been examined during the past year at the instance of this Department, one pleasant feature being the proper organisation of psychological examination of children in the Backward Section at "Seaforth." Such routine examination had been pressed for from the beginning by the Head Master and recommended by the Psychologist. By the end of June, appointments had been made for the examination of all boys then in the Backward Section, and also for a number in the ordinary school who were not making satisfactory progress.

As the children attending the Special classes at "Seaforth" return home, others fill the vacancies thus created. It has now been arranged that such newcomers shall be given a psychological examination within a month of admission to the school.

Cases referred by the Head Master, Special School, "Seaforth," were distributed as follows:—

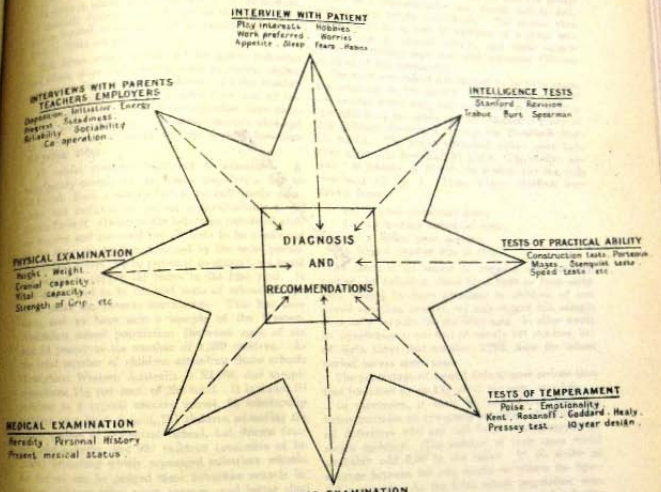
Imbecile.	Feeble-minded.	Borderline.	Average.
10*	12	12	9

*Two low-grades were included.

Group Tests.

Group Tests have been carried out in three schools: Mayland, Senior, Perth Boys' and Perth Girls', and the Head Teachers were supplied with information as to the success of each child examined.

In addition, special measurements (individual) were made in each of the above schools and also at Thomas Street Senior State School. We cannot speak too highly of the helpfulness and courtesy of the Head Teachers and their Assistants. Considerable labour was involved in supplying us with estimates of ability, reliability, and steadiness of each examinee. This was cheerfully undertaken, and the



PSYCHOLOGICAL EXAMINATION

Diagram to show

Sources of Information required

information provided us with an exceedingly useful criterion of the value of those tests which were on trial as group tests.

The labour involved in preparing an estimate of the incidence of mental defect has already been referred to. Following are the details of the investigation:—

Estimation of percentage of school children so mentally defective as to need provision in separate schools.

In order to obtain an approximation to the number of mentally defective individuals in the community it was decided to estimate the percentage of defectives in State schools.

This figure would exclude all low-grade imbeciles and idiots, since such glaring cases of mental defect are exempt from school attendance. As the number of cases of idiocy is much smaller than that of imbeciles, and as there are fewer imbeciles than cases of less serious amentia, the approximation obtained by a school survey would only be slightly less than the actual index.

All school children could not be examined. A satisfactory sample of the school population had to be tested. Such a sample had to be sufficiently numerous and inclusive to permit generalisations to be drawn from it. Owing to the laborious nature of such an inquiry and the need for all tests to be conducted by the same examiner and scored by the same person (to obviate errors due to personal equation), we could not expect to supply the index in the first year. It was determined so to conduct tests of school groups as to make the records cumulative. This has been done, and we have now a sample of the Western Australian school population (between ages of six and 14 years) to the number of 1,299 children. As the total number of children attending State schools throughout Western Australia is 52,000, our sample constitutes 2½ per cent. of the total. It includes 63 children at a typical country school, 93 scholarship children at a High School, 161 children attending the upper classes of a Central School, but drawn from city and suburbs, and 981 children (exclusive of infants) attending widely separated suburban schools. As far as can be judged these suburban schools included children from poor, average, and better class areas. (It is our intention to add further data to those already compiled in order to confirm the figure obtained so far.)

A somewhat arbitrary standard of mental defect had to be employed when testing groups of children and the critical Intelligence or Performance Quotient adopted was 70. In the total of 1,229, there were 33 individuals whose I.Q. was below 70, that is 2.5 per cent. The following table shows the distribution:—

64—Rural school	.. ..	6
93—High School	.. ..	0
161—Central School	.. ..	4
981—Suburban Schools	.. ..	23
1,299		33

The percentage, 2.5 per cent., is larger than has been obtained elsewhere, and a little thought suggests a reason. The group included some children of eight, nine and ten years of age who had much less facility in reading and writing than older children. They were perforce concerned with the very words of the test as well as with the instructions as such.

It was desirable to eliminate incidental errors of this kind, especially as nearly half the cases were less than 11 years of age. If a new sample were to be obtained of children who had been at school for five or six years, and so had had opportunities to master the technical difficulties of reading and writing, it would still be necessary to secure that the group should be a representative one, should include dull, average, and bright individuals. The easiest plan appeared to be to test all children of a given convenient age in several schools, and these schools should be widely separated and represent different sections of the community.

The most convenient age seemed to be 11½ years, the usual age in Standard 5. By allowing a range of six months either way, and examining every child in the schools of the given age we obtained a group of 224 children distributed through the Standards from 2B to 6A. The group contained rather more boys than girls (125 boys and 99 girls). The median age was 138 months ± 3; but the median age for girls was only 137 ± 3. These 11-year children were drawn from—

(a) a good residential area;
(b) an average industrial area;
(c) a rather poor quarter.

The largest number was in (b).

As there is no reason to suppose that amentia (which, by definition, dates from birth or from early age) should be more prevalent in children of one school age than another, we may regard this sample as equally valuable for the other ages. In other words its significance is not that of merely 224 children, but of eight times that number, 1,792, since the school period covers eight years.

The percentage of mental defect, more serious than that indicated by an I.Q. of 70 per cent., was 1.8.

In conclusion, it must be remembered that this figure excludes all low-grade imbeciles, all idiots, and all defectives who are still further handicapped by major epilepsy. The number of such cases would probably add 0.5% to the index. If we strike an average between the two results we obtain the figure 2.2 per cent. As the total school population comprises some 52,000 children, the number of defective individuals for whom special education is urgently necessary is about 1,500. How long is the progress of about 50,000 normal boys and girls to be delayed and impeded by the attempt to force 1,500 handicapped children to do the impossible?

12.—SUMMARY OF WORK FOR PRISON AUTHORITIES.

During the year, a small room at the Gaol was furnished and equipped for the purpose of such psychological examinations as were desired by the prison authorities.

As a first step it was proposed to examine a sample of all inmates. In order to avoid selection all prisoners under a given age were to be examined. In this way there would be no discrimination according to the nature of the offence.

In all, 27 prisoners were examined; and all but two were below the age of twenty-six.

Psychological examination showed only five of the group to be feeble-minded, though four were found to be abnormal. Although only five could be classed as feeble-minded, the group as a whole was well below average in intellect. 100 ± 15 is the index of average intellect. In this group of 27 only 12 had intelligence quotients as high as this.

Of the group with average intellect or better, only three had average poise, foresight and self control. The remainder were more like children in this respect. Of the 15 whose intellect was somewhat duller than average, four had adult poise, two had adolescent poise, and the remainder had the forethought of children. In power to make a plan and in speed of reaction, the group with average intellect was distinctly better than the duller group. Of the four regarded as abnormal, only one was of average intellect. Of the other three, one is a sex pervert, has ideas of grandeur and is feeble-minded; the two others are abnormal as the result of serious inflammatory condition of the brain in earlier life. (One of these still displays facial paralysis.)

It was interesting to classify the prisoners as—(1) West Australian born; (2) Eastern Australians; (3) Overseas individuals. West Australians, 12; Eastern Australians, 3; Overseas individuals, 12. In the West Australian group, four had average intellect or better, and eight were among the duller ones.

As to the offences for which prisoners had been committed, it was noticed that there was much similarity between the West Australian group and the Overseas group. In each group, there was one instance of wilful murder and one of manslaughter; in each, one for forgery and a number of cases of theft.

The general health of the group is being investigated by the Gaol Medical Officer, and it is probable that the incidence of septic conditions of mouth and throat will be very similar in this group to that of the Children's Court group.

Of the Western Australian group of 12, no less than nine had been in prison at least once before, and many had a long record in the Children's Court. Of the Overseas group, six had served an earlier sentence in Western Australia, and it is extremely probable that a considerable number had served sentences overseas.

It is difficult to escape the conclusion that a number of cases who have been undeterred by the penalties imposed by the Children's Court will be undeterred by the sentences imposed by the higher court. It seems questionable whether this State should be mulcted periodically for the expense of arrest, trial and maintenance of this considerable percentage. Now that there is a prison farm, perhaps our legislators, advised by the Bench, will modify the laws in order to minimise such unproductive expenditure.

13.—SUMMARY OF PRIVATE CASES.

29 per cent. of the cases were adult, of whom one-third were women.

The group included imbeciles and feeble-minded of all grades, though 16 per cent. were of average intellectual endowment. These cases were chiefly individuals of unstable nervous constitution, and several needed drastic change of environment and occupation.

80 per cent. of all private cases were school children or adolescents, and half the number were backward because of unsatisfactory adjustment or progress rather than for lack of intelligence. Indeed, 20 per cent. of cases were exceptionally well endowed, and these came for educational and vocational guidance. It will be interesting to follow the careers of these gifted boys and girls.

15 per cent of the cases needed change of environment.

21 per cent. of the cases needed special school programme.

Nervous heredity was found in 20 per cent. of the cases.

As was the case last year, there has been considerable pleasure attaching to the work with private cases, because the parents concerned sought information themselves, and were interested to have recommendations and advice. They came prepared to act upon suggestions made, and returned freely to report progress. Country cases wrote where attendances were out of the question. We have a gratifying number of letters telling of improvement.

14.—RESTANDARDISATION OF OVERSEAS TESTS.

(Continued from 1927.)

Discussions of the performances of the Pre-adolescent Group.

As the chief revision of the Binet scale (Stanford) does not set aside any special tests for 11-year olds, though it gives tests for 10-year and 12-year olds, it was thought wise to obtain some norms for Western Australian boys and girls. The group consisted of 186 children in the State School. Of this number 81 were girls. The tests employed were taken from various sources and included:—

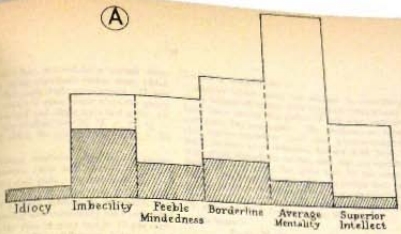
1. Terman vocabulary.
2. Burt reasoning.
3. Story completion.
4. Healy picture completion.
5 & 6. Two Pressey emotion tests.
7, 8 & 9. Burt's tests—analogies, opposites, and synonyms.

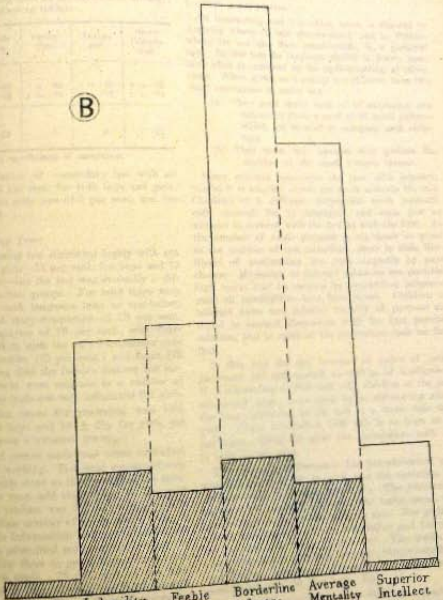
(a) 1.—*Terman vocabulary*:

Median performances for girls—34 words. (6 = S.I—Q.R.)

Median performances for boys—37 words. (6½ = S.I—Q.R.)

When this result appeared, we then correlated vocabulary and age for boys and girls separately and found that there was a high correlation of .77 with girls and only .66 with boys. The median age for girls was one month younger than that for the boys, but the range of ages was the same. This pre-adolescent period is evidently a time when the growth in vocabulary is marked with girls. As any period of rapid growth intensifies differences between good and poor workers the high correlation of .77 may thus be explained. In boys, though increases in vocabulary are being made, the rate is not so rapid. It may be that boys made more rapid progress earlier. (their median score was three words higher than the





DRISTRIBUTION OF LEVELS OF MENTAL FUNCTIONING

Ⓐ *Private cases only*
Ⓑ *All individual Psychological examinations.*
Adults, *shaded.* Children, *not shaded.*

girls median), and had arrived at a period when their gains were being stabilised rather than added to. The reasons for such high correlations (77 per cent. and 69 per cent.) is made clear when the group is divided into younger and older boys and girls. Of the 99 younger, the median was 32, $Q_1 = 28$, $Q_3 = 36$, and of the 69 older, the median was 38, $Q_1 = 34$, $Q_3 = 44$.

Correlation between vocabulary and Burt's reasoning test and Pressey's fears tests showed a marked difference for boys and girls. In each case the correspondence was higher for boys than girls. Thus the percentage of factors common to successful performance of reasoning and vocabulary tests amounted to 66 per cent. in the case of girls and to 73 per cent. in the case of boys. This difference between boys and girls is emphasised when we note the figures for other language tests such as synonyms and analogy, as shown in the following table:—

—	Vocabulary.	Synonyms.	Analogies.	Story Completion.
Reasoning* Girls ...	$r = \cdot 80$	$r = \cdot 65$	$r = \cdot 65$	$r = \cdot 63$
Boys ...	$r = \cdot 73$	$r = \cdot 70$	$r = \cdot 73$	$r = \cdot 74$
Difference in favor of boys ...	·13	·5	·8	·11

* Pearson co-efficients of correlation.

Average correlation of vocabulary test with all other tests was 65 per cent. for both boys and girls, but the median for girls was 64.5 per cent. and for boys 66.5 per cent.

2.—Burt Reasoning Test:

The Burt Reasoning test correlated highly with age in both boys and girls—75 per cent. for boys and 73 per cent. for girls—but the test was evidently a different one for the two groups. For boys there were correlations with such language tests as vocabulary and analogies and story-completion of 73 per cent. or over, with synonyms of 70 per cent., with fears of 72 per cent. With girls the only correlations over 70 were with opposites (75 per cent.) and fears (70 per cent.), showing that the factors making for success among the boys were common to a number of tests in which they were not very influential for girls.

Median—Median score for reasoning was $13\frac{1}{2} \pm 3\frac{1}{2}$ for boys and $14 \pm 2\frac{1}{2}$ for girls, yet the girls were a younger group.

The number of errors made was some indication of the manner of working. The score concerned only the number correctly done so that to obtain the number attempted we must add the number of incorrect items. The boys median was $3\frac{1}{2}$ (2 = S.I—Q.R.). For girls the median number of errors was 4 ($1\frac{1}{4}$ = S.I—Q.R.). This information indicates that 50 per cent. of the girls attempted more examples than the boys, thus enabling them to get a higher final score in spite of errors made. 75 per cent. of the girls made four errors or less, whereas the third quartile for boys was six errors. The plotting of errors for boys and girls with high and low scores give two pictures of working that are in marked contrast. The numerous group of boys working slowly and inaccurately is not paralleled among the girls.

3.—Story completion:

Factors which made for success in completing a story correlated higher with language tests among the boys than among the girls—78 per cent. against 67 per cent. for synonyms. The performance between tests involve more common factors with boys than with girls, though in neither case was the correlation high (56 per cent. for girls and 68 per cent. for boys). It is rather interesting to notice that an opposite relation exists between story completion and finding of opposites where correlation for girls was 70 per cent. and for boys only 66 per cent.

Medians—

Boys, 20 ($Q_1 = 13$, $Q_3 = 31$);
Girls, 25 ($Q_1 = 10$, $Q_3 = 36$).

4.—Picture-completion:

An interesting test for which much is claimed in America where it was standardised, and in Britain where its use has been considerable, is a pictorial save what is involved in the understanding of directchief operations to carry out.

(a) They must study each of 10 situations, and determine from a card of 60 small pictures which are wanted to complete each situation.

(b) They must note against each picture the number of the small picture chosen.

Many children commence the task with interest; but, as it is lengthy, errors are made towards the end. Children of a different disposition work methodically through the 10 situations, and seem just as anxious to succeed with the last as with the first. As the number of small pictures is six times as great as the number of test situations, there is little likelihood of performing the task correctly by pure chance. Moreover, as inferior solutions are possible, high scores may be secured by suspending judgment until all possibilities have been noted. Children of inferior poise and inferior tenacity of purpose are found to content themselves with the first possible solution, and in spite of the instruction look no further.

In this way the test becomes an index of poise judgment and self-control, as well as of intelligence. It is interesting to find that with children at the pre-adolescent stage, boys seem to be developing along the lines demanded by the test at a faster rate than girls. Their correlation with age is as high as 68 per cent., while for girls the correlation with age is only 55 per cent.

The median performance for pre-adolescent girls was 32, for boys 36; in each case the variation was large and the S.I—Q.R. was $12\frac{1}{2}$. The relationship between the test and others of the series seems more pronounced with Pressey's Fears test. For girls the correlation between picture-completion and fears was 08 per cent., for boys 71 per cent. The lowest correspondence was obtained between picture-completion and finding opposites. For girls the co-efficient of correlation was .56, for boys .63.

It is worth remarking that whatever complex of mental functioning subserves picture-completion it is not so closely dependent upon actual cranial capacity as are tests of intelligence. The figures, 57 per

cent. for girls and 59 per cent. for boys may be contrasted with the figures 68 per cent. and 74 per cent., respectively, which represent the correlation between reasoning and cranial capacity.

The average index of correlation between picture-completion and all other tests given was 66 per cent. for boys and 60 per cent. for girls. As our discussion of vocabulary suggested, it would seem that boys are more steadily going at eleven years, and that girls were entering upon a period of disturbed poise.

5 & 6.—Two Pressey emotion tests—Likes and Fears.

Although we have called certain tests the Pressey *Likes and Fears*, it is necessary to point out that the full Pressey test for school children was not employed. As designed, the test consists of six operations and requires some 40 minutes for careful performance. As we were giving a lengthy series, so much time could not be spared. Only two of the six operations were asked for. Another necessary explanation concerns the scoring of the two tests given. Pressey adds individual totals to obtain an affectivity score. We retained the totals separately as a Fears total and a Likes total. The decision to score in this way was arrived at after scrutiny of the actual papers. It was found that girls and boys dealt with the two operations in markedly different fashion. It appeared, too, that children with poor vocabulary tended to show either abnormally small totals or abnormally high totals. There were other interesting differences, which it seemed inadvisable to conceal by addition. Some of the observations are appended:—

(a) Very high totals in Fears characterised 16 per cent. of girls and 13 per cent. of boys.

(b) Very high totals in Likes characterised 18 per cent. of girls and 12 per cent. of boys.

(c) Very low totals in Fears characterised 14 per cent. of girls and 15 per cent. of boys.

(d) Very low totals in Likes characterised 9 per cent. of girls and 21 per cent. of boys.

(e) 10 per cent. of girls had very high totals in both tests.

(f) 5½ per cent. of boys had very high totals in both tests.

(g) More than 20 per cent. of boys (26/125) had very low totals for Likes; of these 13 had good vocabulary, and three had bad vocabulary.

(h) Less than 10 per cent. of girls (9/99) had very low totals for Likes; of these, two had good vocabulary, two had moderate vocabulary, and three had bad vocabulary.

A further study was then made of pre-adolescent children who crossed out more than two-thirds of the possible number of Fears. It was found that:—

(1) The median age of this group was one month higher than that of the whole group.

(2) The median vocabulary was 28 words (below 10-year standard), as against 35 words for the whole group.

(3) The median Picture-completion score was that of a 9-year child.

(4) The median Reasoning score was that of an 8½-year child.

A similar analysis was made of the performance of children who crossed out less than one-sixth of the possible number of Fears. The following information was gleaned:—

(1) The median age of the group equalled that of the whole number.

(2) The median vocabulary was 38 words (above 10-year) as against 35 words for the whole group.

(3) The median performance in Picture-completion was 10-year.

(4) The median score in Reasoning was 10-year.

7.—Burt Analogies:

With 11-year boys this test showed only a moderate correlation with vocabulary (61 per cent.), but the very high correlation of 87 per cent. with Synonyms, Reasoning 73 per cent., Story Completion 71 per cent., and Picture Completion 68 per cent. also gave high correspondence.

Yet with girls the corresponding indices were low in the sixties save for Story Completion, which equalled the boys' figure.

8.—Burt Opposites:

With 11-year boys there was 68 per cent. correlation with Vocabulary, 66 per cent. with Story Completion, 67 per cent. with Reasoning, and 52 per cent. with Analogies.

With 11-year girls there was 68 per cent. correlation with Vocabulary, but 76 per cent. with Story Completion, 75 per cent. with Reasoning, and 70 per cent. with Analogies.

In this test the median performance for boys was 32.7 and for girls 32.6.

9.—Burt Synonyms:

With 11-year boys this test gave high correlation with other language tests if we except the Opposites test. There was a positive correlation of 87 per cent. with Analogies, of 76 per cent. with Story-Completion, and 74 per cent. with Picture-Completion.

With eleven-year girls the test gave markedly different results, correlating well with Opposites (68 per cent.), but less well with Analogies (63 per cent.), Story-Completion (67 per cent.), and Picture-Completion (60 per cent.).

It is hard to account for this difference, and it is important to note the corresponding sex difference in dealing with the Burt Opposites.

In this test the median performance for boys was 11.3, and for girls 10.3½.

Summary:

From the above analysis it seems clear that identical tests given by the same experimenter on the same occasion to boys and girls whose ages were closely similar (138 months ± 3, and 137 months ± 3), are not dealt with in identical fashion by the two groups. In only on test (Burt Opposites), was

the median score the same for both groups, and in none was the semi-inter quartile range alike. School placement was as follows:—

	2 classes below 5th.	1 class below 5th.	In 5A or 5B.	1 class above 5th.
	%	%	%	%
Girls ...	13	39	36	12
Boys ...	13	38	28	21

DISTRIBUTION OF AGES.

	Under—			
	11 yrs. 3mo.	11 yr. 6mo.	11 yr. 9mo.	12 yrs.
	%	%	%	%
Girls ...	29	25	24	22
Boys ...	25	18	24	33

Children who marked many uncommon Fears (more than two-thirds of the maximum) proved to be a group doing badly at school, although 46 per cent. were given at least the average mark for steadiness and satisfactory behaviour by their teachers. It was noteworthy that the group of girls marking many uncommon Fears was considerably younger than the boys. Thus, only one girl was over 11½, whereas no boys were under 11 years 8 months. Again 72 per cent. of the girls were given the average mark for steadiness or better. Only 16 per cent. of the boys received the average mark. 72 per cent. of the girls were below the usual school standard (Standards 5A or 5B), and 85 per cent. of the boys were below this class.

The Burt Reasoning Test includes 24 examples; and our method of scoring shows the number of errors made as well as the examples correctly performed. For the whole group of girls the median number of errors was 4. For the whole group of boys 3½. For the group with many uncommon Fears the median number of errors for girls was 5. The median number for boys was 6, as shown in Table below:—

ERRORS IN REASONING.

	Whole Group.			Group with many uncommon Fears.		
	Qu. 1.	Med.	Qu. 3.	Qu. 1.	Med.	Qu. 3.
Girls ...	1	4	4	4	5	8
Boys ...	2	3½	6	3	6	8

14 (b.)—THE DIFFERENCE IN PERFORMANCE BETWEEN PRE-ADOLESCENT AND ADOLESCENT GROUPS.

DIFFERENCE IN CHARACTERISTIC SCORES FOR VARIOUS TESTS.

	Vocabulary.	Synonyms.	Picture Completion.	Story Completion.	Reasoning.	Fears.	Likes.	Analogies.	Opposites.
81 Pre-adolescent girls	34	10	32	25	14	51	61	13	32
144 Adolescent girls	48·4	18·6	53·6	39·94	16·75	45·3	55	25 (108 girls)	46·06 (108 girls)
105 Pre-adolescent boys ...	37	11	36	20	13·6	59	51	14	32
156 Adolescent boys	50·7	18·7	55·3	36·8	17·4	47·5	49·8	25·4 (118 boys)	39·98 (118 boys)

COMPARISON BETWEEN 99 PRE-ADOLESCENT GIRLS AND 144 ADOLESCENT GIRLS.

2 (a.) AVERAGE PERFORMANCES WITH STANDARD DEVIATION AND PROBABLE ERROR.

		Reasoning.	Synonyms.	Story Completion.	Analogies.	Fears.	Opposites.	Vocabulary.	Picture Completion.	Likes.
Pre-adolescent Group	Average ...	14	10	25	13	51	32	34	36	61
(Median Age—11 years 5 months)	Standard Deviation	3·9	5·3	9·6	5·9	20·4	9·0	9·1	19·6	24
(Median Cranial Capacity—1354)	Probable Error ...	0·3	0·4	0·7	0·4	1·9	0·7	0·7	1·5	1·7
Adolescent Group	Average ...	17	18·7	40	25·6	46	41	48·4	54·4	56·8
(Median Age—13 years 6 months)	Standard Deviation	4·1	8·5	14	8·3	19·9	4·8	12·5	21·5	18·9
(Median Cranial Capacity—1409)	Probable Error ...	0·2	0·5	0·8	0·6	1·1	0·5	0·7	1·2	1·05
Increase	...	% 21·4	% 87	% 60	% 97	% —10	% 28	% 42	% 51	% —7

COMPARISON BETWEEN 105 PRE-ADOLESCENT BOYS AND 186 ADOLESCENT BOYS.

25. AVERAGE PERFORMANCES WITH STANDARD DEVIATION AND PROBABLE ERROR.

		Reasoning.	Synonyms	Story Completion.	Analogies.	Fears.	Opposites.	Vocabulary.	Picture Completion.	Likes.
Pre-adolescent Group ... ... (Median Age—11 years 6 months)	Average ...	12·8	11	21	15	50	32	36	22	51
	Standard Deviation	5·0	5·6	10·9	7·5	25·5	9·2	9	20·5	24·2
(Median Cranial Capacity—1422)	Probable Error ...	0·2	0·4	0·7	0·5	1·6	0·6	0·5	1·3	1·5
Adolescent Group ... ... (Median Age—13 years 5 months)	Average ...	17·4	18·7	26·8	25·4	45	46·1	31	25·2	60
	Standard Deviation	4·1	9·8	14·1	7·8	21	5·3	11·2	19·4	29
(Median Cranial Capacity—1484)	Probable Error ...	0·2	0·5	0·7	0·6	1·12	0·6	0·6	1·02	1·9
Increase	...	% 38	% 70	% 75	% 70	% —4	% 25·3	% 41·6	% 72·8	% 17

2. * CORRELATION TABLE—MEASUREMENT OF ELEVEN-YEAR OLD CHILDREN.
105 Boys, 81 Girls = 186 Children.

		Reasoning.	Synonyms.	Story Completion.	Analogies.	Fears.	Opposites.	Vocabulary.	Picture Completion.	Likes	Age.	Cranial Capacity
1. Reasoning ...	Girls	...	65	63	63	70	75	60	64	59	73	66
	Boys	...	70	74	73	71	67	73	63	66	75	74
	Difference	...	5	9	8	1	8	13	2	3	2	8
2. Synonyms ...	Girls	65	...	67	63	63	68	74	60	65	72	68
	Boys	70	...	76	87	72	57	67	74	57	69	58
	Difference	5	...	9	24	9	11	7	14	8	3	10
3. Story Completion	Girls	63	67	...	71	62	76	67	56	58	63	70
	Boys	64	76	...	71	68	66	70	68	59	69	69
	Difference	1	9	...	0	6	10	3	12	1	6	1
4. Analogies ...	Girls	65	63	71	...	68	70	65	64	66	65	66
	Boys	73	87	71	...	62	63	61	68	53	74	64
	Difference	8	24	0	...	6	7	4	4	13	9	2
5. Fears ...	Girls	70	63	62	68	...	64	54	68	74	64	58
	Boys	71	72	68	62	...	68	64	71	64	71	62
	Difference	1	9	6	6	...	4	10	3	10	7	4
6. Opposites ...	Girls	75	68	76	70	64	...	68	56	59	67	68
	Boys	67	57	66	63	68	...	68	63	62	63	62
	Difference	8	11	10	7	4	...	0	7	3	4	6
7. Vocabulary ...	Girls	60	74	67	65	54	68	...	62	58	77	64
	Boys	73	67	70	64	64	68	...	67	53	66	62
	Difference	13	7	3	1	10	0	...	5	5	11	2
8. Picture Completion	Girls	64	60	56	64	68	56	62	6	62	53	57
	Boys	63	74	68	68	71	63	67	...	62	68	58
	Difference	2	14	12	4	3	7	5	...	0	15	2
9. Likes ...	Girls	59	65	58	66	74	59	58	62	...	65	60
	Boys	56	57	59	53	64	62	53	62	...	60	53
	Difference	3	8	1	13	10	3	5	0	...	5	7
10. Age	Girls	73	72	63	65	84	67	77	83	66	...	68
	Boys	75	69	69	74	71	63	66	68	60	...	62
	Difference	2	3	6	9	7	4	11	15	5	...	1
11. Cranial Capacity	Girls	68	68	70	66	58	68	64	57	60	68	...
	Boys	74	58	69	64	62	62	62	59	53	67	...
	Difference	6	10	1	2	4	6	2	2	7	1	...

* All co-efficients of correlation were obtained by Pearson's formula. Each is a percentage.

STUDY OF ADOLESCENT GROUP.

156 Boys and 144 Girls.

4. *TABLE OF CORRELATIONS (Pearson Co-efficients).

		Reasoning	Synonyms.	Story Completion.	Analogies.	Fears.	Opposites.	Vocabulary.	Picture Completion.	Likes.	Age.	Cranial Capacity.
1. Reasoning ...	Girls	...	63	75	72	70	52	72	66	63	65	73
	Boys	...	52	68	59	66	63	68	59	60	66	65
	Difference	...	11	7	13	4	11	4	7	3	1	8
2. Synonyms ...	Girls	63	...	69	64	61	50	76	58	62	65	51
	Boys	52	...	59	59	57	58	70	57	66	63	68
	Difference	11	...	10	5	4	8	6	1	4	2	17
3. Story Completion	Girls	75	69	...	78	64	53	75	66	64	65	72
	Boys	68	59	...	61	67	53	69	73	64	70	66
	Difference	7	10	...	17	3	...	6	7	...	5	6
4. Analogies ...	Girls	72	64	78	...	65	62	78	71	57	73	73
	Boys	59	59	61	...	63	72	66	60	56	63	62
	Difference	13	5	17	...	2	10	12	11	1	10	11
5. Fears ...	Girls	70	61	64	65	...	42	63	63	70	73	68
	Boys	66	57	67	63	...	64	70	64	68	71	73
	Difference	4	4	3	2	...	22	7	1	2	2	5
6. Opposites ...	Girls	52	50	53	62	42	...	57	55	45	59	46
	Boys	63	58	53	72	64	...	65	58	55	68	65
	Difference	11	8	...	10	22	...	8	3	10	9	19
7. Vocabulary ...	Girls	72	76	75	78	63	57	...	68	65	73	66
	Boys	68	70	69	66	70	65	...	66	73	71	74
	Difference	4	6	6	12	7	8	...	2	8	2	8
Picture Completion	Girls	66	58	66	71	63	55	68	...	62	69	68
	Boys	59	57	73	69	64	58	66	...	63	67	70
	Difference	7	1	7	11	1	3	2	...	1	2	2
9. Likes ...	Girls	63	62	64	57	70	45	65	62	...	73	68
	Boys	60	66	64	56	68	55	73	63	...	63	67
	Difference	3	4	...	1	2	10	8	1	...	10	1
10. Age ...	Girls	65	65	65	73	73	59	73	69	73	...	71
	Boys	66	63	70	63	71	68	71	67	63	...	74
	Difference	1	2	5	10	2	9	2	2	10	...	3
11. Cranial Capacity	Girls	73	51	72	73	68	46	66	68	68	71	...
	Boys	65	68	66	62	73	65	74	70	67	74	...
	Difference	8	17	6	11	5	19	8	2	1	3	...

* Each co-efficient is a percentage.

15.—CRANIAL MEASUREMENTS.

(a) *Pre-Adolescent Group.*

———	Height.			Width.			Length.			Capacity.		
	1st Qu.	Median.	3rd Qu.	1st Qu.	Median.	3rd Qu.	1st Qu.	Median.	3rd Qu.	1st Qu.	Median.	3rd Qu.
Girls	132	137	140	138	142	145	177	182	185	1311	1354	1435
Boys	135	141	144	142	145	148	180	184	190	1376	1422	1494

(b) *Adolescent Group.*

———	Height.			Width.			Length.			Capacity.		
	1st Qu.	Median.	3rd Qu.	1st Qu.	Median.	3rd Qu.	1st Qu.	Median.	3rd Qu.	1st Qu.	Median.	3rd Qu.
Girls ...	135	139	144	143	144	148	180	184	188	1346	1416	1492
Boys	138	143	147	144	147	150	185	188	191	1426	1494	1562

50/186 pre-adolescents had unusual cranial measurement in more than one dimension.

Of these, 22 (18 boys 6 girls) had unusually large measurements, and 13 (5 boys 8 girls) had unusually small measurements.

Another group of 10 (6 boys 4 girls) had one or more measurements unusually large and the other unusually small.

19/106 adolescent children showed unusual cranial measurement in more than one dimension.

Of these, 12 (5 boys 7 girls) had unusual measurements, each of which was large or each small.

The remaining 7 (3 boys 4 girls) had measurements, one or more of which was large and the others small.

Among adolescent girls 4/80 heads were small in several dimensions, and 1/80 was large in several dimensions.

Among adolescent boys 5/76 were large in several dimensions, and 2/26 were small in several dimensions.

16.—ADAPTATION OF PRESSEY FEARS.

Group Test of Emotionality.

After giving the Pressey Test for Likes and for Fears to a well-balanced group of 13-year olds at School A, we noticed that many had carried out the instruction to encircle one word only in a very inadequate manner.

At first it was determined to discard all papers in which the instructions had been misunderstood. Later it was realised that we should thus exclude an interesting group of children. These individuals were of the same age, and had been given precisely the same directions, but had failed to carry them out. Would not the remaining cases become a selected group by reason of the exclusion of these children?

Teachers kindly provided numerical estimates of steadiness and reliability. We proceeded to estimate the correlation between the number of Fears marked and stability. This proved to be:—

$r = .52$ Girls only.
$r = .726$ Boys only.

Between Likes and stability:—

$r = .35$ Girls only.
$r = .646$ Boys only.

We were inclined therefore to regard Fears as the more significant test, and determined to score each set separately and devise new scoring norms. Even that this decision had been arrived at, it was only another step to abandon the Pressey procedure of encircling one word in each line. Thus we should save time, retain the group of error-makers, and lessen the labour of correction. Words most frequently marked by the group as a whole would be regarded as modal words, unless appreciable differences appeared as between boys and girls. Should such differences occur separate sets of modal words would be framed.

The papers from School A were re-scrutinised, and the same tests were thereupon given at School B.

All papers were carefully marked, word by word. Thus we found how many times each of the 125 words was marked by each child. The results were kept in order for boys and girls. The total group numbered 224, there being 99 girls and 125 boys. (The classes tested ranged from Class 4C to Class 6A.) The youngest children included had turned 10 years 11 months, and the oldest children included were within a week or two of the twelfth birthday.

The words that were most frequently slashed out (the upper 20 per cent.) were called common words. Those that were least frequently slashed out (the lower 20 per cent.) were called uncommon words.

The Fears Test.

We found how many words each child had slashed, and called that figure his total affectivity. The 125 words included were then grouped (somewhat arbitrarily) as—

Neurotic words—32
With self-reference words—31
Hypochondriac words—20
Melancholiac words—21
Paranoiac words—21

The percentage of the words in each group of the total slashed was calculated for each child. The highest percentage and the second highest were named by the name of the group. Thus, "N.S." beside the name of a child would indicate that the highest percentage of words slashed came in the Neurotic group, and the second highest in the Self-reference group.

Whereas "M.H." after a name would mean that the highest percentage of words slashed came in the Melancholiac group, and the second highest in the Hypochondriac group. This lettering N.S., M.H., etc., placed under the heading "Type," and a third heading "common uncommon" enabled us to list for each child the number of common over the number of uncommon words. A typical entry would run —

Class.	Age.	Name.	Total Affectivity.	Type.	Common / Uncommon.
5B	10-11	E. E.	90	N. S.	25 / 11

When the records for the whole group were scrutinised it was seen that though the great majority had affectivity totals ranging between the middle 20's and the middle 70's, yet there were some 15 or 16 per cent. of the children with very low totals, and a similar number with very high totals. As intelligence and other tests had also been given to this 13-year old group, it was decided to list the individuals with high totals, and those with low totals and see whether any facts of interests emerged.

As a result of this scrutiny a further subdivision was made on the basis of a vocabulary result. We found that of a total of 33 children (14 girls and 19 boys) who had very low totals, there were 12 children (10 boys and 2 girls) who had extremely good vocabulary (Median = 13-year credit, and the range was from 12-year to average adult, whereas the median age of the group was 11½ years.) These children had even better poise as indicated by the Healy Picture Completion Test, their median score being 14-year credit.

In the same group of 33 children there were 13 (7 boys and 6 girls) who had poor vocabulary (Median = 8-year; Range 8-10-year). These 13 children also had poor poise (credit being 10-year) though the median age was 11½ years.

Another result was that of the 35 children (17 girls, 18 boys) who had extremely high totals (80 or over), only seven had good vocabulary (Median = 13-year credit; Range 12-14-year credit); they had good poise (Median = 12-year). This was not as good as the previous group, though the median age was still 11½. There were 13 of the 35 (4 boys, 9 girls) who had a poor vocabulary (Median credit = 8-year; Range 8-10-year). In this group the poise was extremely low, giving them only 9-year credit though the median age for this group was 11.7.

A further scrutiny of the results led us to believe that the very high totals were in some cases due to eagerness to please as in the case of children who had a bad vocabulary, but were docile in school. An equal number of high totals were due to bad poise which would lead them to cross out any words, while the somewhat higher number of high totals went with good vocabulary and good poise, and could be taken to indicate a high number of Fears. (This could be said of 14 of the 224 children.) On the other hand very low totals sometimes went with low vocabulary and good poise, where children were unwilling to mark unless the word were understood. Other low totals occurred where the child had poor poise and could not be bothered with the tests. There remained a group of 12 children with good vocabulary (10 boys, 2 girls) and good attitude who marked very few words and never more than four out of a possible 25 uncommon ones. I think we may take it that these children, 12 of the 224, are nervous in regard to relatively few situations suggested by the test words.

Of the children who had low totals with good vocabulary and good poise, 50 per cent. were in Class 6; and of those who had high totals with good vocabulary and good poise, 70 per cent. were below Class 6. Of those with poor vocabulary and high totals 56 per cent. were in Class 4B or lower. Of those with low totals and poor vocabulary, but with good poise, 38 per cent. were in Class 4B or lower. A further 23 per cent. were in Class 4A. No child of this group was in Standard 6, and only one of the previous groups.

This investigation seems to have established the value of the tests as given to groups of pre-adolescent children, for it separates out those who succeed in school from those who do poorly, although their intelligence as measured by the Vocabulary Test seems good.

It may interest investigators to have the list of words rarely slashed. The classification into Neurotic, Self-reference, etc., is also given as it is quite arbitrary:—

Uncommon Fears and Likes.

Fears.	Likes.
Morals	Hotels
Movies	Masked
Parties	Hamlet
Athletics	Tarzan
Girls	Clerking
Marriage	Elocution
Politics	Talkative Girls
Cats	Edison
Dances	Flirting
Business	Day-dreaming
Engagement	Beethoven
Popularity	Ferris-wheels
Boys	Arguing
Looks	Loafing
Clums	Debating
Society	Revivals
Jokes	Deacons
Clubs	Raphael
Food	Rough Boys
Family	Mowgli
Goal	Pageants
Books	D'Artagnan
Wit	Palmistry
Employer	Sauerkraut
Soul	Smoking

CLASSIFICATION OF WORDS EMPLOYED IN FREE TEST.

Neurotic.	Self-Reference.	Hypochondriac.	Melancholiac.	Paranoiac.
work	anatomy	headache	loneliness	[illegible]
school	clothes	sickness	forgetfulness	[illegible]
accidents	books	disease	blues	[illegible]
temper	self-consciousness	pain	sin	[illegible]
money	awkwardness	nervousness	depression	[illegible]
fire	manners	germs	discouragement	[illegible]
noise	weakness	disfigurement	failure	[illegible]
habits	homeless	medicine	worry	[illegible]
lightning	longing	tuberculosis	God	[illegible]
tiredness	popularity	weakness	death	[illegible]
police	boys	insanity	religion	[illegible]
wrecks	giggling	dizziness	conscience	[illegible]
storms	girls	enfeebling	helplessness	[illegible]
falling	society	smoking	forgiveness	[illegible]
reading	nightmares	food	friends	[illegible]
luminous	parties	fainting	soul	[illegible]
bizarre	morals	health	ruin	[illegible]
insects	dances	dirt	crying	[illegible]
snakes	syphilis	over-eating	disposition	[illegible]
marbles	marriage	germs	grave	[illegible]
athletics	stupidity		childishness	[illegible]
sheep	queerness			[illegible]
drowning	engagement			[illegible]
gas	blushing			[illegible]
darkness	impulses			[illegible]
burglars	dreams			[illegible]
wrestling	family			[illegible]
dogs	chums			[illegible]
hysterics	stammering			[illegible]
knives	jokes			[illegible]
rats	fightiness			[illegible]
books				[illegible]
roughness				[illegible]

PERCENTAGE OF WORDS SLASHED IN EACH OF ABOVE GROUPS.

	N.	S.R.	H.	M.	P.
Unselected Australian Children (pre-adolescent) ...	20	8	26	16	20
Australian Boys (pre-adolescent) with unusual performances	18	0	73	0	7
Australian Girls (pre-adolescent) with unusual performances	27	0	53	14	4

An interesting fact emerged by comparing the properties of words most frequently marked in each of the above groups by unselected Australian children, and by those with an unusually high number of unusual words or an unusually small number of common ones.

Where the unselected group marked only 56 per cent. of its modal words from the Neurotic and Hypochondriac groups taken together, the boys with unusual performances marked 93 per cent. from those groups and girls with unusual performances marked 82 per cent., a significant increase. Of interest, too, is the dwindling in the words grouped as having reference to self.

17.—STANDARDISING AN OVERSEAS TEST FOR LOCAL USE.

COMPARISON OF MODAL WORDS OBTAINED LOCALLY WITH THOSE SUPPLIED FROM OVERSEAS.

LIKES.

Modal words as determined by the Fressy Method (American).	Modal words as determined by the Collins Method (British).		Words most frequently elicited (Western Australia).		
Girls and Boys.	Girls.	Boys.	Girls.	Boys.	Total.
beaches	boating	boating	beaches	boating	beaches
camping	tennis	camping	camping	camping or Tennyson	camping
fishing	Tennyson	Tennyson or Napoleon	Tennyson	Napoleon	Tennyson
athletic girls	pretty girls	pretty girls; athletic girls	pretty girls	pretty girls	pretty girls
dancing	dancing	reading	dancing	reading	reading
talking	minstrels	acrobats	acrobats	acrobats	acrobats
singing	singing	bands or singing	singing	bands	singing
jazz	hymns	hymns	waltzes	solos	solos
leaders	good boys	good boys	good boys	good boys	good boys.
games	games	games	games	games	games
serials	socials	socials	socials	socials	socials
coffee	ice-cream	ice-cream	ice-cream	ice-cream	ice-cream
sleeping	teaching	typewriting	teaching	typewriting	typewriting
musicians	actors or artists	engineers	musicians	aviators	artists
Hamlet or Gallahad	Hamlet	Tarzan	Hamlet or Gallahad	Gallahad	Gallahad
church	church	church	church	church	church.
scenure	drawing	drawing or science	drawing	drawing	drawing
sports	sports or babies	sports	babies	animals	animals
college	housekeeping	farming	travelling	travelling or farming	travelling
business men	nurses or teachers	soldiers	teachers or nurses	soldiers	soldiers
books	poems or books	books	poems	magazines	magazines
electricity	switchbacks	electricity or switchbacks	bargains	electricity	cards
doctors	doctors	doctors or chauffeurs	doctors	grooms	doctors
country	country	circuses	circuses	circuses	circuses
reading	seaside	fishing	joy-riding	fishing	joy-riding

STANDARDISATION OF AN OVERSEAS TEST FOR LOCAL USE.

COMPARISON OF MODAL WORDS OBTAINED LOCALLY WITH THOSE OBTAINED FROM OVERSEAS.

FEARS.

Modal words as determined by the Fressy Method (American).	Modal words as determined by the Collins Method (British).		Words most frequently elicited (Western Australian).		
Girls and Boys.	Girls.	Boys.	Girls.	Boys.	Total.
school	loneliness	loneliness	loneliness	loneliness	loneliness
sin	sin	sin	headache	headache	headache
sickness	sickness	sickness	sickness	sickness	sickness
self-consciousness	accidents	accidents	accidents	accidents	accidents
money	pain	pain	pain	pain	pain
nervousness	fire	fire	nervousness	germs	fire or nervousness
habits	manners or medicine	medicine	medicine	medicine	medicine
weakness	death	death	death	death	death
enemies	lightning or enemies	enemies	enemies	enemies	enemies
rivals	police	police	police	rivals	police
longings	storms	storms	storms	storms	storms
melting	suffocating	suffocating	suffocating	suffocating	suffocating
insects	poison	poison	poison	poison	poison
friends	giggling or crowds	friends	crowds	crowds	crowds
morals	nightmares	nightmares	nightmares	nightmares	nightmares
jealousy	jealousy	jealousy	jealousy	jealousy	jealousy
stupidity	stupidity	stupidity	stupidity	drowning	stupidity
lies	drowning or lies	drowning or lies	lies	fainting	lies
blushing	fainting	gun or fainting	fainting	burglars	fainting
burglars	burglars	burglars	burglars	crying	burglars
family	crying	crying	crying	dirt	crying
death	dirt	dirt or health	dirt	grave	dirt
disposition	knives or grave	knives	knives	germs	grave
germs	germs	germs	germs	roughness	germs
lightness	roughness	roughness	roughness		roughness

The tests as used were the Pressey Tests 2 and 3, Form B, an expurgated form for children. Test 2 was in its original form, but in Test 3 two words were altered from the original (hiking to walking—pop to ice-cream). Mary Collins in her investigation had the following changes:—

Words used by Mary Collins.	Words used in the present test.	Words of original Pressey Test.
cinemas	vaudeville	vaudeville
football	walking	hiking
soda-fountains	amusement-parks	amusement-parks
mushrooms	sauerkraut	sauerkraut
debates	debating	debating
switchbacks	ferris-wheels	ferris-wheels
movies	resorts	resorts

The order of the tests was changed. As Test 3 required the checking of pleasant activities it proved more suitable for the children to begin with than Test 2, which asked about dreads and fears.

High School children marked fewer Likes and Fears than elementary school children, and certain words which were very frequently marked by younger boys and girls were rarely marked by older children. There were other words frequently crossed out by High School children which were seldom marked by younger ones.

SUMMARY OF DIFFERENCES OBSERVED.

WORDS MORE FREQUENTLY MARKED BY HIGH SCHOOL CHILDREN (UNDERSCORED) THAN BY ELEMENTARY SCHOOL CHILDREN (LOCAL).

	Girls.	Boys.
Fears ...	clothes	clothes
	looks	looks
	morals	morals
Likes ...	Hamlet	Edison
	English	science
	athletic girls	pretty girls
	country	magazines
	coffee	dancing
	sauerkraut	socials

WORDS MORE FREQUENTLY MARKED BY ELEMENTARY SCHOOL CHILDREN (LOCAL) THAN BY HIGH SCHOOL CHILDREN (UNDERSCORED).

	Girls.	Boys.
Fears ...	accidents	police
	fire	burglars
	ruins	cats
	lightning	fault finding
	wrecks	giggling
	storms	nervousness
	drowning	helplessness
	death	
	grave	
	disease	
	germs	
	crying	
	twitching	
	lessons	
	loneliness	
	disfigurement	
	failure	
Likes ...	Edison	
	Tarzan	French
	ice-cream	drawing
	typewriting	sailors
	beaches, sunny	soldiers
	boys,	forts, handsome boys
	hotels, roaring	smoking, ferris-wheels
	boy-riding	circuses

By Authority: FRED. WM. SIMPSON, Government Printer, Perth.

18.—TABULATION OF INTELLIGENCE QUOTIENTS.

FOR THE VARIOUS GROUPS —

Medium and Quartiles.

Child Welfare Department.	Medical Inspection.	Court Cases.	Private Cases.	Total Group.
42 cases	30 cases	61 cases	128 cases	27 cases
63 76 90	70 80 85	69 82 95	65 87 100	77 86 91

Distribution of Intelligence Quotients.

FOR TOTAL GROUP—INDIVIDUALLY EXAMINED—290 CASES.

I.Q.			%
110—144	...	Superior ...	20·1
90—109	...	Average ...	7·4
70—88	...	Dull ...	25·6
10—69	...	Defective ...	35·7
			31·3

FOR TOTAL GROUP EXAMINED BY GROUP TESTS—380 CASES.

			%
Superior ...	...	...	16·1
Average ...	...	...	62·8
Dull ...	...	...	21·9
Defective ...	...	...	2·2

19.—FINAL SUMMARY OF WORK DONE FOR YEAR 1927-1928.

1. AT CLINIC—

	Individuals.	
	1927.	1928.
Individual examinations and treatments	350	422
Medical examinations	83	186
Total Attendances (Medical) ...	102	243
Psychiatric examinations ...	60	56
Total attendances (Psychiatric) ...	72	73
Interviews, Parents, Guardians, etc. ...	214	305

2. EDUCATION DEPARTMENT—

	Individuals.	
	1927.	1928.
Individuals examined (Group Tests) ...	367	380
Additional measurements—		
Thomas Street ... 65		
Perth Boys' and Girls' 160		
Maylands Senior ... 145		
370		370

3. OUTSIDE CLINIC—

University Course.

Experimental and Applied Psychology ... Two lectures weekly throughout the year.
Laboratory Course ... ... Two periods weekly throughout the year.

I have the honour to be,

Sirs,

Your obedient servant,

ETHEL T. STONEMAN, A.M.,
State Psychologist.
Lecturer in Psychology (part time),
University of Western Australia.

30th June, 1928.