A CLINICAL SUMMARY OF 106 CASES OF MENTAL DISORDER OF UNKNOWN ETIOLOGY ARISING IN THE FIFTH AND SIXTH DECADES.*

By E. T. GIBSON, M. D., MIDDLETOWN, CONN.

CONTENTS

	PAGE
Introduction	221
Nature of material	224
Choice of material	225
Diagnostic summary of cases	225
Special groups	226
Manic-depressive psychosis	226
Dementia præcox	231
Unclassified	232
Clinical summary	239
Age and sex	239
Heredity	239
Alcoholism	239
Syphilis	239
Physical diseases and defects	239
Delusions, hallucinations, affect	240
Katatonic symptoms	242
Prognosis	244
Summary	246
Conclusions	249

INTRODUCTION.

A review of a large number of cases which have been studied extensively rather than intensively is not likely to be of much value unless there is something novel in the kind of material or in the point of view.

In the present paper the data of the separate cases are banal. The cases themselves include those psychoses of the involutional years which have evaded definition under all the schemata of the descriptive psychiatrists. One claim for novelty is that the cases are drawn from a psychopathic clinic, and, as will be pointed out later, more nearly approximate a complete collection of mental disorders as they actually occur than would a group of necessarily com-mitable cases. The other claim for more or less novelty lies in

*Read at the seventy-fourth annual meeting of The American Medico-Psychological Association, Chicago, June 4-7, 1918.

the point of view; namely, the age at onset, using the decade as unit.

The advantages of such an approach have been pointed out before, notably by Southard and Bond (*AMERICAN JOURNAL OF INSANITY*, 1914, LXX, 779, 828). In a group which includes the involutional psychoses, the standpoint of age is obviously the logical one. To attack such a group with preconceptions of disease-processes or symptom-pictures is really to beg the question.

One is struck by the number of symptoms, syndromes and even so-called diseases which have been described as characteristic of this time of life. It would probably be admitted that agitated, depressions, certain metaphysical delusions, "Cotard's syndrome," "late katatonias," etc., do occur with greatest frequency in the 5th and 6th decades, but I have been unable to find any review of the mental disorders of this period which would permit one to form any idea of the frequency and proportional value of these features.

If it is granted that something may be gained by a review of psychoses of the involutional period, the need at once arises of having as a basis for comparison observations in other decades. As a preliminary to the present survey, a study of 6000 consecutive admissions to the Boston Psychopathic Hospital has been made. (In course of publication in the *Bulletin of the Massachusetts Commission on Mental Disease*.)

The following paragraphs are quoted from the summary of that paper:

The cases upon which the study is based include, in addition to groups found in state hospitals of the usual type, a considerable proportion which represents mental disorder but not "insanity" in the legal sense. These are the groups which are responsive to the special appeal of a psychopathic hospital. The statistics, therefore, as a whole, present a more accurate picture of the entire incidence of mental disorder in the community than reports from state hospitals.

The use of the decennial unit avoids to a large extent errors in statement of ages, and allows any psychotic forms characteristic of the principal epochs of life to appear more clearly. According to Table IV, the predominant diagnoses in the various ten-year periods are as follows:

1st decade: Congenital syphilis.

2d and 3d decade: Dementia præcox with manic depressive types increasing in prominence.

4th decade: Dementia præcox still most prominent, with paresis and alcoholic psychoses increasing in males, and manic depressive psychoses in females.

5th and 6th decade: For men, the decade is characterized by the occurrence of several forms in about equal number, namely: Paresis, manic depressive psychoses, dementia præcox, delirium tremens, alcoholic hallucinosis, arteriosclerotic psychosis, etc. For women, there is a tendency to ill-defined forms which are not easily diagnosed. Of these the groups of presenile, involutional, and unclassified psychoses make up in the two decades respectively 22.1 per cent and 33.8 per cent.

7th decade and following: Senile and arteriosclerotic psychoses are the prevalent ones, comprising about half in the 7th decade and a much larger proportion subsequently.

The large proportion of cases in the 5th and 6th decades which are left "unclassified" or placed in the indefinite and unsatisfactory groups of presenile and involutional psychoses indicates the need for further work upon psychoses occurring between the fortieth and sixtieth years.

In the manic-depressive psychoses the maximum for males falls for depressions in the 6th decade, for manias in the 3d. For females the maximum for both types fall in the 4th decade. Disregarding sex, manias predominate before and depressions after the fortieth year.

Dementia præcox appears equally in males and females. During the twenties males were in considerable excess, while during the thirties females were in excess; fifty-seven and seven-tenths per cent of all the females and 39.3 per cent of all the males were past 30 when admitted.

The specific diagnosis "not insane" was made in 9.37 per cent of all admissions. The groups which may be considered made up of cases not committable as "insane" (though certain individuals in them may be committable) comprise together 1406 cases, or 23.43 per cent of all admissions. This group probably represents roughly an actual gain in psychiatric service to the community.

TABLE I.—SHOWING DIAGNOSTIC GROUPINGS OF 1567 CASES BETWEEN THE AGES OF 40 AND 59.

	Male.		Female.	
	No.	Per cent.	No.	Per cent.
Traumatic psychoses	9	1.0	1	0.11
Psychosis with cerebral arteriosclerosis and with organic brain disease.....	56	6.6	18	2.7
Infective exhaustive psychoses.....	13	1.5	11	1.6
Syphilitic psychoses	181	21.0	43	6.1
Alcoholic	253	29.6	82	11.5
Dementia præcox	113	13.1	180	25.4
Manic-depressive psychoses	107	12.4	131	18.5
Epilepsy	17	1.9	18	2.5
Senile dementia	7	0.8	12	1.7
Presenile and involutional psychoses.....	12	1.4	96	13.6
Unclassified depressions	14	1.6	17	2.4
Unclassified	78	9.1	98	13.9
	860	100.0	707	100.0

The above table (I) shows the diagnostic grouping (with many condensations) of that part of the 6000 cases which fell in the years from 40 to 59, inclusive. The last three ill-defined groups in the table make up 20 per cent of the cases in two decades, but only 10 per cent of the entire 6000 cases. In other words, we have a numerical expression of the uncertainty in diagnosis which the psychiatrist meets in cases in the involutional years.

NATURE OF MATERIAL.

The material available at the Psychopathic Hospital possesses some particular advantages for a study of this kind. Patients are committed by physicians, or are sent by the police, or are admitted at their own request. They are drawn from metropolitan Boston and represent fairly the incidence of mental disease (apart from delirium tremens and drug addicts) in a large cosmopolitan population. The admission rate of 2000 a year is very nearly the full capacity of the hospital, and as no admissible cases are turned away, this number is approximately the normal under the conditions mentioned, and is closely related to the actual occurrence of psychoses in the population. In the great majority of cases, the patients are under observation for a short period of the time when their mental disorders have reached a stage which renders their life in society impossible. Observation in the hospital is usually limited to this acute period, so that a full record of the mental disorders is not always obtainable. The residence of the patient in Boston, and the efficient Social Service Department allows rather better accounts of their past history than can be obtained by most hospitals for the insane. Subsequent histories of cases are usually readily obtainable in the proportion which are transferred to other state hospitals.

The data utilized included age, sex, social status, time in hospital, diagnosis (which in all cases was the collective opinion of the staff), duration of illness, Wassermann reaction, alcoholic history, a short description of the mental condition, condition on discharge, and destination on discharge. It has been possible to obtain also, in a large number a report as to mental condition from one to five years later, in those cases transferred to other state hospitals, or kept track of through the Social Service Department.

CHOICE OF MATERIAL.

Two thousand cases admitted consecutively to the Psychopathic Hospital in Boston were reviewed with respect to the age at onset, and 345 were found to fall between the years of forty and fifty-nine. The following groups were excluded from this number on the ground that they had no epochal significance.

	Cases.	Per cent of all excluded.	Per cent of total cases.
1. Continuous or periodic disorder beginning before 40	106	44.4	30.7
2. Diseases with known exogenous causes.....	48	20.1	13.9
3. Senile and organic cases (including arterio-sclerotic psychoses)	31	13.0	9.0
4. Unclassified cases beginning before 40, patients with meager history or those not insane	54	22.5	15.4
	239		69.3

The remaining 106 cases, 30.7 per cent of those of the 5th and 6th decades, form the material of the present study.

DIAGNOSTIC SUMMARY OF CASES.

According to final diagnosis at the hospital the 106 cases fall into 25 groups. These may be placed in larger classes as follows:

Manic-depressive psychosis	38
Dementia præcox, paraphrenia and paranoic condition.....	27
Unclassified, "no diagnosis" and indeterminate diagnosis....	28
Presenile, involutional and unclassified depression.....	13
	106

Thus 41 cases or about 38 per cent of the selected group are not definitely classified. Another characteristic of the 106 cases appears if we compare them according to the proportion of the sexes with the admissions during the 5th and 6th decades of the 6000 cases.

	Males.		Females.	
	No.	Per cent.	No.	Per cent.
Selected cases	30	28.3	76	71.7
Cases admitted in 5th and 6th decade, 6000				
P. H. cases.....	1010	54.9	831	45.1
Six thousand cases, all ages.....	3125	52.1	2875	47.9

In the selected "functional" group 71.7 per cent are females. Of all cases in a series of 6000 admitted between the ages of 40 and 59, 45.1 per cent are females. The latter proportion is very nearly the same as the percentage of females (47.9 per cent) in the entire series of 6000, disregarding age.

STUDY OF SPECIAL GROUPS.

About two-thirds of the 106 cases could be placed with more or less certainty under the captions of manic-depressive psychosis and dementia præcox. The remaining third did not readily admit of classification. The considerations upon which these distinctions were made are mentioned in connection with the discussion of the separate groups.

MANIC-DEPRESSIVE PSYCHOSIS.

Thirty-eight cases showed the usual features of manic-depressive psychosis, and were so called at the Psychopathic Hospital and subsequent hospitals if there were any. The maniacal cases will be treated separately. The depressed cases are subdivided along the lines of motility—that is (1) as retarded, (2) as agitated, (3) as both, and (4) as showing no particular motility disorder. This division is made largely for the purpose of bringing into view the agitated depressions which have been looked upon as peculiarly associated with the involutional years.

In all the manic-depressive cases, family history of mental disease is mentioned in only five cases (362, 1917, 966, 1901, 1863), the relatives being, respectively: sister; father; brother and sister; aunt and two uncles; daughter, mother and sister.

Mention is made of menopause in nine cases, as follows:

Two (1173, 1676). Ten years before onset.

One (1241). Five years before onset.

One (388). Three years before onset.

Five (1192, 1138, 178, 1777, 1768). Onset during menopause.

In seven cases there was evidence of physical disease:

One (553). Irregular pupils, palpable arteries (W. R. & S. F. Neg.).

Two (87, 1834). Scar of hysterectomy (1834, recent).

One (882). Vesico-vaginal fistula.

One (517). Carcinoma of penis.

Manic Phase.—There were eight cases in this class, five female and three male. Five had passed through previous attacks, but had none before 40. Subsequent history of six was obtained. Two were discharged recovered, two improved and two unimproved. Two were still in a state hospital four and five years later, one improved and one unimproved. These cases were all described as euphoric, hyperkinetic and distractible.

Manic-Depressed with Retardation—This group comprised 14 cases, six males and eight females. In four there had been previous attacks, and in one a subsequent attack is reported. There is no record of the later condition of eight. Three of these were discharged from the Psychopathic Hospital improved and two unimproved. Of the remaining six, one is reported through the out-patient department two years later to be "nervous and tearful." Two were discharged from other hospitals recovered, one improved, one died of lobar-pneumonia, and one was in the hospital four years later unimproved.

Five of the patients expressed no delusions. One (239) had a feeling that some indefinite calamity impended, and one (362) repeated monotonously, "What shall we do when cold weather comes." Three had somatic ideas: (1842) "intestines stopped up and everything moving about inside the body," (87) "feels bad all over," (1901) "an awful impression, a dead feeling about heart." There were persecutory delusions in three; in one, coupled with self-reproach. In one the dominant feeling was suspicion, and in the third there was a definite reaction of aversion to the men of the family. In two the dominant feeling was one of self-reproach, one (1241) had ill-treated her sister, and one (1777) felt she was pregnant by the son of a friend. Three threatened or attempted suicide. Hallucinations (flashes of light) were described in only one case aside from the general somatic feelings mentioned above.

Manic-Depressive, Depression with Agitation—This group consists of seven females and one male. None of the cases had had previous attacks, but three had recurrences. Three were improved and one was unimproved upon discharge from the Psychopathic Hospital. Of the five with after-history, two were still in hospital four years later and were reported improved, and one was recovering from a third attack. Two had been discharged, one after a year as improved and one after two years as unimproved.

Delusions were present in all. In one there was a feeling that "something dreadful would happen." The ideas were self-condemnatory in four (92, 154, 882, 1134). In one of these (882) there was a real basis in the odor from a vesico-vaginal fistula. In four the patient was the object of persecution. Hallucinations are described in two cases: "little voices inside" (882), and "people talking about her character" (1768). General somatic ideas were found in one case (1956) in which there was a complaint of many pains, for which no cause could be discovered.

Manic-Depressive with Both Agitation and Retardation.—In one case (1676), there was usually retardation passing over into agitation at times. This patient, a female aged 55, was suicidal and self-condemnatory. In a second case (350), a female aged 53, speech was retarded although the general behavior was agitated. This patient insisted that her "bowels would not move." She died of broncho-pneumonia while in the Psychopathic Hospital.

Manic-Depressive without Conduct Disorder.—There were six cases, three male and three female, in which motility was not a prominent feature. Two (722, 178) had passed through previous attacks, and of these one (178) had a subsequent attack. All the cases had well-marked delusions. Three had somatic delusions, "evil spirit in belly" (553), "face not right, frozen stiff, cannot get heat into body" (388). "Bowels tied up, pins and needles in flesh at night" (722). One of these cases (722) was complicated by alcoholism. The patient heard voices from his stomach, thought he had improper relation with men, and possibly had some degree of peripheral neuritis (pins and needles). The delusions of the other three cases were of the persecutory type, in one case (963) in the future tense. One female (178) heard people outside on street talking about her.

One patient (517) had carcinoma of the penis, of which he shortly died. One (178) recovered from this attack and also from a subsequent attack. A third (722) was discharged in seven months, "much improved." One (553) was in hospital three years later, unimproved; of the remaining two cases (963, 388) there is no later account.

Discussion.—The principal facts available about the manic-depressive cases are shown in Tables II and III. The outlook, it appears, is rather favorable, in that only five out of the 22 with

after-history were not improved or recovered. An important characteristic of the manic-depressive psychosis is repetition of attacks. Although the longest after-history is less than five years, there was account of more than one attack in 16 out of the 38 cases. The proportion would doubtless be greater if the cases were followed longer. Recurrence is of especial interest in the agitated depressions, because of the association between this type of reaction and a poor prognosis suggested in Kraepelin's treatment of the subject in his latest edition. Although he abolishes the picture of involuntional melancholia in favor of a mixed phase of the manic-depressive psychoses, it is noticeable that the four or five "presenile" groups tentatively proposed by him are all characterized by anxious depressions. In our groups of agitated depressions, there is subsequent history in only five, but in three of these there were repeated attacks. In number the agitated depressions were not more than 10 cases out of 38. So far as the present group is concerned, therefore, agitated depressions are not the predominant form of manic-depressive psychoses in the presenium, nor do they seem of bad prognosis. On the other hand, they tend to recovery and recurrence.

In the table of delusions (Table III) no attempt has been made at a consistent classification. There may be some question whether the two classes mentioned last should be called delusions at all. One may call them *falsification of memory* and *apprehension*, but there does not seem to be any adequate reason for distinguishing them from delusions merely because they are not in the present tense. Six cases out of the 38 are stated to have no delusions, but as all but one of these are retarded cases, it is likely that some at least have merely failed to express their delusions. According to the table no type of delusion is much more frequent than others.

Only six of the delusions mentioned are evidently absurd; these are:

- 1888. Is God, king of China, Pope.
- 1754. Family is Holy Family.
- 269. Sun is heaven.
- 388. Face isn't right—is frozen stiff, can't get heat into body.
- 553. Evil spirit in belly.
- 1842. Everything wrong inside body. Is chased by six spiders by night and six spiders by day.

TABLE II.—MANIC-DEPRESSIVE CASES ANALYZED AS TO COURSE.
(Subsequent history from other hospitals. Status on discharge from the Psychopathic Hospital not considered.)

Group.	No.	Sex.		Previous attacks.	Subsequent attacks.	Subsequent history.	Recovered.	Improved.	Stationary.	Died.
Manic	8	3	5	5	0	6	2	2	2	
Depressed retarded ...	14	6	8	4	1	6	2	2	1	1
Depressed agitated	8	1	7	0	3	5	1	3	1	
Depressed not ret'd or agit.	6	3	3	2	1	4	1	1	1	1
Depressed ret'd and agit. ...	2	0	2	0	0	1	0	0	0	1
	38	13	25	11	5	22	6	8	5	3

TABLE III.—ANALYSIS OF DELUSIONS MANIC-DEPRESSIVE CASES.

Group.	No.	Cases with no delusions.	Somatic.	Persecutory.	Self con- demnatory.	Grandeur.	Impersonal.	Referring to past or to future.	Apprehensive.	Hallucinations.
Manic	8	1	1	2	0	3	1	2	1	3 all questionable.
Depressed retard..	14	5	3	3	4	0	1	0	3	1 questionable.
Depressed agitated	8	0	1	4	4	0	0	0	4	2
Depressed ret. and agitated ..	2	0	1	1	1	0	0	0	0	0
Depressed not ret. or agitated.	6	0	3	2	0	1	0	0	1	1
	38	6	9	12	9	4	2	2	9	3

(possibly 7)

The first three of these occurred in maniacal cases, and are plainly quite different from the last three, which were found in depressed cases. The latter also suggest strongly perversions of the sensory apparatus.

Hallucinations play a very small part in the manic-depressive group. They are clearly present in three cases (882) "little voices inside," (1768) "auditory hallucinations," (772) "voices in stomach reveal things." The two in which the content of the perceptions is mentioned are thus somatic. It will be noticed also that these somatic hallucinations like the somatic delusions in the depressed cases mentioned above are also absurd.

DEMENTIA PRÆCOX.

In 27 cases of mental disorder appearing after 40, the diagnosis of dementia præcox appeared justified. There were eight males and 19 females. Reports of the subsequent courses were obtained in 19 cases. Ten were still in hospitals unimproved, four years later. Three were reported unimproved four to six months after leaving the Psychopathic Hospital. They were transferred to other hospitals and the later history is unknown. Within a year after leaving the Psychopathic Hospital, four were reported improved, three being discharged and one being sent to another institution. One died of lobar-pneumonia, mentally unimproved, after two years.

Only one case was reported as definitely recovered. This was a married woman aged 54, (348). Upon entrance to the Psychopathic Hospital she was said to have been mentally disordered for about six years but "not bad until a few days ago." She was in the Psychopathic Hospital eleven days, and was then transferred to another state hospital from which she was discharged as recovered four months later. She had been addicted to alcohol but had used none for several months. She felt as if "under a spell." She complained of an electrical machine under her bed which she had heard working for years. It made her talk and yell and "drew the life out of her." She was also jealous of her husband, with what reason is not known. She was described as somewhat depressed, without any marked motor phenomena and with no insight.

The eight cases which not were followed after leaving the Psychopathic Hospital were all unimproved upon discharge. The duration of the disorder before commitment was stated as from six months to two and a half years. Delusions were expressed in 26 cases, the one exception being mute. In 20 cases delusions and hallucinations were the prominent features. In three of the hallucinated cases and in four of those in which hallucinations were not observed there were striking disturbances of conduct, stupor, fixed attitude, mutism, stereotypy, echopraxia, etc.

One case (1083) a male, aged 44, was committed to the Psychopathic Hospital after a mental illness of two months. He was depressed, had a feeling that some calamity impended, and was restless, contrary and disagreeable. He was classified as a manic-depressive, depressed phase, and after six days transferred to another state hospital. A report obtained after four years states that he has grown steadily worse and is "resistive, indifferent and with stereotyped speech."

Family history of mental disease was mentioned in only three cases of the 27. Of one (1853) the note is made, "Brothers were all abnormal, epileptics, tramps." One female (246) was the third case of insanity in the direct family line. One (273) has an insane son. Two are said always to have been peculiar.

Summary.—On the whole the 27 cases seem to be no different from cases of dementia præcox arising earlier in life. Most of them fit very well the Kraepelinian paranoid group. In only seven are the features commonly called katatonic prominent.

UNCLASSIFIED.

Introductory.—The chief problem of the present paper lies in the 41 cases remaining after the exclusion of the previous groups. Thirty-two of the 41 cases were females. Of the cases which were transferred to other hospitals reports of the further course were obtained in 21. In only six of these did the final diagnosis agree with that made at the Psychopathic Hospital. For the sake of brevity, the 21 cases are shown in tabular form.

It will be noticed that some of the cases in the group of 41 have been assigned either at the Psychopathic Hospital, or another hospital, to one of the groups previously considered. It has been my intention to include in those groups only the cases which from symptomatology and course appeared pretty certainly

TABLE IV.—UNCLASSIFIED CASES IN WHICH SUBSEQUENT HISTORY WAS OBTAINED.

No.	Sex.	Age.	P. H. diag.	Final diag.	Outcome.
505.	F	58	Unclassified	Paranoic Cond.	4 yrs. later not imp.
412.	F	51	"	Manic-Depr.	7 mos. later improved.
1016.	M	55	"	D. P. Heb.	17 days later died purulent leptomeningitis.
1268.	F	50	Presenile	Manic-Depr.	8 mos. recovered.
1059.	F	55	"	Invol. Melanch.	4 yrs. later improved.
1475.	F	40	"	Paranoic Cond.	1 mo. later discharged "capable of self-support." One mo. later died rupture aneurism int. carotid artery.
1240.	M	46	Man. Dep.	Invol. Melanch.	1 mo. later died pyæm.
593.	F	51	D. P. P. or Invol.	Manic-Depr.	4 yrs. in hosp. not imp.
748.	M	47	D. P. P.	Psychasthenia	
				Psychosis	9 mos. discharged rec.
1476.	M	50	D. P. P.	Invol. Melanch.	1 mo. discharged imp.
667.	F	45	D. P. P.	Paranoic Cond.	9 mos. capab. self-sup.
1207.	F	48	D. P. P.	Manic-Depr.	11 mos. recovered.
825.	F	43	D. P. P.	Unclassified	9 mos.
1156.	F	53	Paraphrenia		
			Confabulans.	Paranoic Cond.	2 yrs. not improved.
439.	F	59	M. D. D. Invol.	Involitional	1 yr. improved.
1992.	F	53	Unclass. Par.	Paranoic Cond.	4 yrs. not imp., in hosp.
606.	F	55	Unclass. Par.	Paranoic Cond.	4 yrs. improved.
155.	F	49	Paranoic Cond.	Paranoic Cond.	1 yr. not improved.
	F	51	Involitional	Involitional	4 yrs. not improved.
287.	M	58	Unclass. Depr.	Unclass. Depr.	10 mos. not improved.

The 20 cases which were not followed after they left the Psychopathic Hospital received the following diagnoses:

Unclassified	6
Unclassified depression	4
Paranoic condition	3
Dementia præcox	2
Manic-depressive	4
No diagnosis	1

to belong there. It is on account of a lack of these characteristics that the present group has been excluded. Some of the cases perhaps present too few facts to be of much value. Others are, according to the standard mentioned, too anomalous. While the data at hand, as mentioned earlier under the heading of "Nature of Material" are sufficient to admit of placing typical cases in their respective groups, they are by no means adequate for the establishment of new groups. Such an undertaking should properly demand not only a minute and extensive study of course and symptomatology in a large number of cases throughout life with psychological analysis of the individuals, but also thoroughgoing studies of pathological anatomy. Kraepelin's tentative and rather apologetic study of presenile psychosis with its inconclusive results gives an indication of the difficulties to be met in this field.

While our facts are too meager to allow any attempt to establish groups, they are of practical service in at least one particular, namely, prognosis. It is of value also to find out what correlations there may be between a good or a bad prognosis and other data, such as character of delusions, hallucinations, affective state and psychomotility.

In addition to the 21 cases with subsequent history shown in Table IV, there was one case which died at the Psychopathic Hospital and three cases in which the mental disorder had begun more than two years before admission. Although the latter course of these is not known they can with advantage be included in the former group.

Of the 25 cases, five died, four were discharged as recovered, seven are said to be improved and nine were at the latest report "not improved." These four groups will be considered separately.

CASES DEAD.

1016.—Male 55, unmarried. Duration given as two months. Always queer. Thinks he has been ill-treated. Fears he has been poisoned, food is tampered with. He has been kidnapped. He has to go to hell. Memory all gone (not true). Has been ruined by masturbation; talkative about himself, depressed. Pupils small and irregular, react to light and upon accommodation. Slightly deaf. Peripheral arteries hard and tortuous. Cause of death, *acute purulent meningitis*.

723.—Female 52, unmarried. Duration 15 months. Insists that house in which she rooms belongs to her. Physicians are representatives of police sent to annoy her. Physicians are representatives of police sent to

annoy her. Makes vague accusations against relatives. Not depressed, not euphoric. Aggressive, verbose, mildly excited at times. Cause of death, *rupture of aneurysm of internal carotid artery*.

349.—Male 52, unmarried. Duration three years. "Back fence is falling; stove is falling apart; shelf is falling on wife"; people are trying to injure him. Depressed, restless, later inactive, excessive alcoholism previous to 10 years ago. Eczema on hands and forearms (pellagra?). Cause of death, *broncho-pneumonia*.

1240.—Male 46, duration four months. Shunned company, thought he was to be injured; says "don't torture me." Depressed, apprehensive, restless, resistive, somewhat retarded. Cause of death, *pyemia*.

1552.—Female 48, married. Herself and husband persecuted by father and family. Bed on fire, food poisoned, auditory hallucinations. Flight of ideas. Depressed. "Katatonic state, negativistic, later very active." Died, *acute dilatation of heart*.

CASES RECOVERED.

825.—Female 43, unmarried. Duration one year. Delusions of persecution and reference. Auditory hallucinations. Emotionally apathetic. No katamenia during three months of observation.

1207.—Female 48, unmarried. Duration three years. A client of her lawyer made slanderous remarks about her. Friends of this man and strangers call out names as she goes by. Slightly depressed, quiet and listless. Menopause at 47.

748.—Male 47, widower. Duration about three years. "Is watched and spied upon." Thinks he is killed, and deserves to die because of wife's death from abortion. Auditory hallucinations. Worried, irritable, agitated, seclusive. Uses alcohol moderately.

1268.—Female 50, married. Duration one year. "People look strange" to her. Neighbors make remarks about her. Apprehensive of harm. Thoughts transferred to others by telegraphy. Does not appear depressed.

IMPROVED.

412.—Female 51, unmarried. Duration when last reported one year. "Snake confined in bowels," referred to right hypochondrium. It is put there for punishment. Sees a snake before face with glaring eyes. Mood said to be "pleasant." Constipation, tenderness at caput coli. Psychoanalyzed by L. E. Emerson, who elicited a history of illegitimate son and incest. Discharged improved.

1475.—Female 40, unmarried. Duration when last reported seven months. Injured by authorities at St. Elizabeth Hospital. Nurses guilty of all sorts of misdemeanors, starve her, drag her by arm and hair, police officer tried to disgrace her by putting arm on back of seat, querulous. Discharged capable of self-support.

1476.—Male 50, married. Duration not given. Fellow-workmen make him drowsy, weak and suffocating. He is watched through partition, is

persecuted by members of some society who drop poison in food, and liberate gas in air. Depressed. Discharged improved.

667.—Female 45, single. Duration three years when discharged. Persecuted by police, prevented from getting work. Had complained to authorities. Exhilarated, restless. Discharged capable of self-support.

439.—Female 59, married. Duration to discharge 15 months, fears she has done wrong and cannot be forgiven. Depressed, agitated. Discharged improved.

606.—Female 55, married. At present in hospital, duration eight years. Thinks she has tuberculosis, is going to be killed. Felt son was in hospital. Hears people talk about her behind her back. They say she has tuberculosis. Depressed, quiet, menopause two years after onset. Condition improved.

763.—Female 45, married. Duration at last report two years. Thinks she is being robbed, health is gone. Has a "terrible feeling." Depressed, menses irregular for last year. Improved on discharge.

CASES UNIMPROVED.

1992.—Female 53, married. Duration at last report eight years. People injure her floors, boards are opened up, chairs pulled apart, clothes torn up. Not depressed or elated. Menopause at 50. Fine tremor of hands and facial asymmetry.

505.—Female 58, married. Total duration four years. Thinks she is pregnant and that a moving pain in her chest is due to a child. She saw a vision in a crystal which led to this belief. Eats excessively and takes food to bed. Quiet and indifferent.

521.—Female 51, unmarried. Duration five years. Policemen watch and follow her. She is in love with a policeman whom she has never met. Everybody seems different in the last two years. She hears voices of policemen making love to her, of the police matron and relatives. She has seen God and had other visions. She was at first depressed but afterwards unconcerned.

1059.—Female 55, married. Duration six years. Her children have been arrested and are held on Deer Island (not true). Thinks she is to be put into an institution. Depressed and agitated. Is tremulous and complains of pain about head and heart.

287.—Male 50, unmarried. Duration at last report 15 months, when was sent to a hospital for chronic cases. No definite delusions. Complains of "poor health," chronic indigestion. Depressed and apprehensive.

1156.—Female 53, married. Duration two years, when sent to hospital for chronic cases. Some one is poisoning her, she is hypnotized, says she is daughter of the archbishop, mistakes identities, gives fictitious names to nurses and physicians and sticks to these names. Usually good-humored, sometimes irritable, but never depressed. Talkative, laughs a good deal. Takes grotesque attitudes of devotion. Menopause at 40.

155.—Female 49, married. Thinks husband is trying to get rid of her, and that he keeps other women. He has had babies by these women and she hears them crying. Sad. Became blind six years after onset.

593.—Female 51, married. Duration four years. People follow and ridicule her, she fears that her clothes are to be stolen and that she is to be put into boiling water, "hears voices and sees visions." Depressed, groans in distress.

1386.—Female 56, married. Duration two years. She has been given pills which have caused bowels and womb to draw together. Eyes feel as if coming out of head. Her son's mother-in-law tried to poison her and poison has been put into her food at the hospital. She saw smoke from stuff burned upstairs come through holes burned in wall. Menopause at 51.

Discussion.—In the attempt to find something characteristic in the 41 "unclassified" cases, by separating according to course those which offered facts for such an analysis, it is obvious that the four groups which have just been abstracted are not of equal value for the purpose.

Taking up the groups in order, we may first consider the five which died. In cases 1552 and 1240, the cause of death is apparently least likely to have anything to do with the psychosis. The latter appears however to be the only one allied to the severe agitation with quickly fatal outcome described by Kraepelin, as his first group under the caption of Presenile Psychosis. As to the other three cases it is very striking that there is in all a possible relation between the cause of death and the psychosis, although the facts are too meager for certainty.

1016. Total duration seven weeks. Purulent leptomeningitis.

349. Duration three years. Broncho-pneumonia, possibility of pellagra.

725. Duration 12 months. Aneurysm of internal carotid (arteriosclerosis).

The four cases which recovered were not at first considered of good prognosis. Three of them were called dementia præcox, paranoid form, and one "presenile psychosis," but upon review at the Boston State Hospital these diagnoses were changed. Only one (747) had any marked affect, depression with agitation, and this was the only one with self-condemnatory ideas. The other three had delusions of persecution and reference, and one of them felt that her thoughts were transferred by telepathy. All of the recovered cases had auditory hallucinations. In these four cases as seen at the Psychopathic Hospital no marked features stood out by which the favorable outcome could have been predicted.

It would be difficult to draw any definite prognostic inference from the seven cases called "improved," because the term itself

is indefinite. The difference of diagnosis in the hospitals of first and second residence is very striking, as shown in the following table:

Case.	P. H. diagnosis.	Final diagnosis.
442.	Unclassified.	Manic-depressive.
439.	Manic-depressive depressed (invol.).	Involitional condition.
606.	Unclassified paranoid.	Paranoic condition.
667.	Dementia præcox paranoid.	Paranoic condition.
763.	Unclassified depressive.	
1475.	Presenile psychosis.	Paranoic condition.
1476.	Dementia præcox paranoid.	Involitional melancholia.

Six of these cases are depressed and one exhilarated. All have delusions, in four cases predominantly persecutory, in three self-condemnatory. Somatic delusions are present in two cases.

Reference to the nine cases which were at the last report unimproved, shows that all but one were females and that the one male is the only one not deluded. In the terminology of Wernicke allopsychic delusions were expressed in seven cases, autopsychic in four and somatopsychic in two. Two patients expressed expectations of calamity, in one case of a horrible nature. Hallucinations were mentioned in three cases, but were not a prominent feature. In two the hallucinations were closely connected with the delusions. Emotional states were,

Depressed (155, 287, 1385).....	3
Depressed with agitation (593, 1059).....	2
"Normal" (1156, 1992).....	2
Depressed—later unconcerned (521).....	1
Indifferent (505)	1

Expectation of calamity occurred only in the agitated cases. The non-depressed cases were noteworthy for their numerous and bizarre delusions.

So far as any prognostic value is concerned, the groups of "recovered" and "unimproved" alone have any particular value. The group of "dead" will not be considered further, although the possibility that in three cases, as mentioned above, the fatal outcome was related to the psychosis and not merely accidental, adds to the prognostic value. One may perhaps consider the 24 cases which have been analyzed with respect to outcome as representative of the group of 41. But to say that the prognosis as to recovery is good in 15 per cent and bad in 37 per cent would be

giving an appearance of accuracy to what is really only a rough approximation. The duration of the psychosis up to the latest report of the case needs to be taken into account. In three of the "unimproved" cases the duration is not more than two years. Two of these, however, were transferred, after observation for a year or more at the Boston State Hospital, to a third institution as chronic cases. It is not impossible that these cases may have recovered later. The durations in the other six cases were from 4 to 11 years, so that the unfavorable prognosis in these has a high degree of probability. On the other hand the "recovered" cases might turn out to be recurrent. In fact cases 1207 and 1268 were looked upon after leaving the Psychopathic Hospital as manic-depressive, although from the abstracts given above it is difficult to see how such a diagnosis can be maintained. One wonders how far the outcome may have influenced the diagnosis. Keeping in mind then that the figures are only roughly approximate one may say that in the group of 41 cases as defined, about 37 per cent are of bad prognosis and about 16 per cent of good prognosis.

CLINICAL SUMMARY.

Age and Sex.—The entire group of 106 cases consists of 76 women and 30 men. The average ages are: women 50.0 years and men 49.3 years.

Heredity.—Note of insanity in other members of the family is made in 13 cases. Information is too meager to allow any further analysis.

Alcoholism.—Inquiry into the use of alcohol was made in 38 cases. Eighteen denied its use entirely, 14 admitted moderate use, three drank heavily and three had drunk formerly but had lately been abstinent.

Syphilis.—Wassermann reactions were reported in 86 cases. The blood serum was negative in 70, positive in three and doubtful in one. Spinal fluid was negative in 11 and "suggestive" in two.

Physical Diseases and Defects were mentioned in 25 out of the 106 cases. In some there appeared to be a possible relation between the physical condition and the mental content. These cases are as follows:

- 155. Blind, suspicious.
- 175. Pulmonary tuberculosis, threatens to infect family.
- 266. Nose itches, worms in nose.
- 412. Constipation, tenderness of caput coli, snake in right hypochondrium.
- 674. Increasing sexual impotence, bear coming to castrate him.
- 882. Vesico-vaginal fistula, police after her on account of odor.
- 939. Old operative wound, has been operated because wound reopened (not true).
- 1364. Gastric burning and pain, suspicions of poisoning.

The remaining cases are as follows :

- 87. Old operation.
- 1241, 1834. Recent abdominal operations.
- 91, 92. Heart apex outside nipple line.
- 1552. Acute dilatation of heart.
- 154, 1059, 1992. Tremors. (154 alcoholic, cause unknown in others.)
- 262. Fecal impaction.
- 269. Recent delirium tremens.
- 349. "Eczema" on hands and forearms.
- 517. Carcinoma of penis.
- 553, 1016. Pupils unequal, arteries sclerotic.
- 1066. Left divergent strabismus, left naso-labial fold flat.
- 1510. "Stricture neurotica esophagi."

Delusions, Hallucinations, Affect.—If we review the 106 cases with respect to *delusions*, we find that they are stated to be absent in only eight cases. Most of these were retarded cases in which delusions might easily be unexpressed though present. Persecutory ideas were present in 78 cases, somatic in 21, self-condemnatory in 16, and in a few cases delusions of jealousy, grandeur, etc. Delusions of negation and unreality, which have received so much attention in the literature of involutional psychoses, were found, respectively, once and three times. In about half the dementia præcox cases the emotional tone is described as "apathetic" or "normal" in spite of the expressed ideas which are nearly always unpleasant and sometimes terrible.

Auditory Hallucinations were found in 38 cases and visual hallucinations in seven. These are divided as follows :

	Total No. cases.	Auditory hallucinations.	Visual hallucinations.
Dementia præcox	27	17	3
Manic depressive	38	7	2
Unclassified	41	14	2

An attempt was made to correlate hallucinations with other outstanding features of the cases, disregarding the formal diagnosis. The features chosen were emotional quality and psychomotility. A résumé of delusions divided as far as possible according to the Wernickean triad of somatic, personal and environmental ideas is also included in the following table.

	No. cases.	Auditory halluci- nations.	Visual halluci- nations.	Allopsychic. Per Cent	Autopsychic. Per Cent	Somato. psychic. Per Cent
Depressed:						
Agitated	21	5	0	15 58	9 34	2 8
Retarded	13	0	0	5 35	5 35	4 30
Agitated and retarded	5	0	0	4 59	1 14	2 29
No abnormal motility	24	9	2	24 69	4 11	7 20
Elated	10	4	2	2 20	6 60	2 20
Emotional state normal or in- consequential	33	19	3	3 77	6 14	4 9

It appears from the table that there is, as might be expected, a positive correlation between allopsychic delusions and auditory hallucinations. There seems also to be two definite groups in which this association occurs; namely, depressed cases without disorder of motility, and cases in which the emotional state did not correspond to the content of the delusions.

As to emotional tone, 10 of the 106 cases were described as elated. Eight of these made up the group of manic-depressive manias. Only two of them were free from ideas of an unpleasant nature. Of the two which were not grouped with the manias, one had persecutory ideas of a decidedly unpleasant nature, yet always gave the impression of exhilaration. Of the remaining 96 cases—

68 were depressed,
4 passed from initial depression to apathy or elation,
2 were variable,
6 were apathetic,
1 not stated,
15 were described as "normal" emotionally.

The ideas expressed by these 96 patients were in every case but two of an unpleasant character, ranging from delusions of the most terrible content to mild hypochondriacal ideas. In one of

the exceptions the patient was beset almost continuously by hallucinatory voices, directing her to do many things such as "not to talk English to the physicians," "to go to the toilet over and over," but never suggesting anything depressing, unless, the reassurance that "she is not crazy" be considered to have such a connotation. This patient was described as sad. The other patient without unpleasant ideas was No. 1564, described under the group with katatonic symptoms. She was described as "variable" emotionally.

The delusions and ideas in the 106 cases with respect to their quality of pleasantness or unpleasantness, and their relations to the emotional states, are summarized in the table.

CONSISTENT.			
Mood.		Ideas.	
Depressed	67	Unpleasant	67
Elated	2	Pleasant	2

INCONSISTENT.			
Elated	8	Unpleasant	8
Normal	15	"	15
Apathetic	10	"	10
Depressed	1	Pleasant	1
Variable	1	"	1
Variable	1	Unpleasant	1

Cases with Katatonic Symptoms.—Symptoms which might be considered katatonic were present in eight out of the 106 cases, or 7½ per cent. Six cases were classed as dementia præcox and two were included in the undiagnosed group.

Abstracts of the eight cases follow:

952.—Female 42, unmarried. Known duration seven months. No delusions stated. Sees face in ventilator. "Mania for burning things." Stands in one position for hours, facing blank walls. Has knelt in attitude of prayer for 12 hours at a time mute. Onset following worry over mother's death. Dementia præcox.

1066.—Female 45, married. Known duration two years. People talk about her. Thought she would die. Voices through wall say husband is going with another woman. Stuporous, tube fed. Repeats one short unintelligible sentence. Left divergent strabismus, obliteration of left naso-labial fold, duration not stated. W. R. Negative. Transferred to Danvers, April 11, 1913. To Medfield, November 24, 1914. Improved. Dementia præcox.

1085.—Male 44, married. Known duration four years. "Family try to boss him," feeling of impending calamity. Depressed, disagreeable, restless, resistive and contrary. Transferred to Westboro, April 15, 1913. Reported February, 1917, resistive, indifferent, stereotyped speech. Dementia præcox, katatonic.

1225.—Male 47, single. Known duration four years. People in shop are against him, watch him, stare at him while he eats. Suspicious of food. A hole is being bored under his bed. Hears buzzing in left ear. Apathetic, assumes a fixed attitude and stares. February, 1917, still in hospital unimproved. Dementia præcox, paranoid.

1564.—Female 45, married. Known duration three years. Thought could talk Greek, Hebrew and Gaelic as requested. Schizophasia, neologisms, resistive, echopraxia, attitudinizing, tube-fed. Still menstruating. February, 1917, still in hospital unimproved. Dementia præcox.

1853.—Male 42, single. Known duration 3½ years. Is responsible for aunt's death because he went away. Worried over money. Thinks continuous prayer will improve him. Depressed, agitated, pulled out hair. Strikes attitudes. To Danvers, October 29, 1913. Reported February, 1917, as indifferent, untidy, deteriorated. Diagnosis at Psychopathic Hospital, unclassified. Danvers, dementia præcox. Brothers were all abnormal, tramps and epileptics.

674.—Male 45, married. Duration four months. Wife unfaithful. Bear coming to tear out abdomen and to castrate him. People will kill him. Is cured by God. Has sexual thoughts about men and women. Depressed, anxious, "katatonic stupor." The patient is becoming impotent. Two sisters, maternal aunt and paternal grandfather were insane. Recovered. Unclassified.

1552.—Female 48, married. Duration not stated. Father and his family persecute her and her husband. Her bed is on fire, and the food is poisoned. "Auditory and olfactory hallucinations." Flight of ideas, katatonic state and negativistic, later very active. Died, "acute dilatation of heart."

Only one of these cases (1085) was given a final diagnosis of dementia præcox katatonic. The initial stage had been such as to suggest a manic-depressive depression, and this was the diagnosis at the Psychopathic Hospital.

Case 1853 was left undiagnosed at the Psychopathic Hospital but the final diagnosis at Danvers was dementia præcox, although nothing was ventured as to the form of the psychosis. Case 1564 showed the greatest development of katatonic signs, although here again the final diagnosis (Boston State Hospital) was not specific as to form. In case 1225, dementia præcox paranoid (Psychopathic Hospital and Boston State Hospital), the katatonic-like features may possibly be explained upon an ideational basis. Case

1066 is somewhat doubtful on account of the unexplained neurological signs (ocular and facial). However the subsequent diagnosis at Danvers affirmed the earlier one of dementia præcox, without reference to organic features. Case 952 has been placed in the dementia præcox group with doubtful propriety. The strongest evidence in this direction is the katatonic features. Case 674 presents a curious medley of signs, and resembles more the late katatonia of Urstein than others in this group. Case 1552 is somewhat similar. Both these cases were considered manic-depressive at the Psychopathic Hospital, but on account of the anomalous features have been placed in the unclassified group for the purpose of the present paper.

As to the outlook in cases with katatonic features we find that only one is stated definitely to have recovered (674). One patient died (1552) and one (952) was not followed after leaving the hospital. The remainder were still in hospitals several years later, two (1066, 1225) being somewhat improved, while the three (1085, 1564, 1853) were not improved or were definitely worse.

Prognosis.—Later reports have been obtained of 64 of the cases which were transferred from the Psychopathic Hospital to other state hospitals. These reports are summarized as follows:

Recovered	10
Discharged improved	13
Discharged unimproved	1
Still in hospital improved.....	7
Still in hospital unimproved.....	25
Dead	8

The recovered cases were under observation for periods up to 3 years 10 months, as follows:

Less than 1 year.....	3
From 1 to 2 years.....	2
From 2 to 3 years.....	1
From 3 to 3 years 10 months.....	4

Four of the patients had recovered from repeated attacks. Two of these are included in the "over three years" group.

The cases which were discharged improved had been under observation:

Less than 1 year.....	2
From 1 to 2 years.....	8
From 2 to 2 years 9 months.....	3

Three of these cases had more than one attack.

The cases which at last report were still in hospital, but improved, had been under observation for the following periods:

2 to 3 years.....	1
3 to 4 years.....	2
4 to 5 years.....	1
6 years	3

Two of these were repeated attacks.

The duration of the cases which at last report were still in hospitals unimproved is as follows:

Less than 1 year.....	3
1 to 2 years.....	2
2 to 3 years.....	1
3 to 4 years.....	3
4 to 5 years.....	10
5 to 6 years.....	1
7 years	2
8 years	1
11 years	2

Only one of these cases had recovered from a previous attack.

The condition upon discharge from the Psychopathic Hospital of cases upon which there is no later report is as follows:

Recovered	4
Improved	12
Unimproved	14
Not mentioned	12

In estimating the value of the reports of the later condition of the patients, the length of the period of observation must be considered. The group "in hospital improved" is much more informative in a sinister sense than is the "discharged improved" group in a favorable sense, not only because of the obvious fact that they were not well enough for discharge, but also because of the much longer average hospital residence of the former group. (The averages are, roughly: "in hospital improved," 4.5 years, "discharged improved," 1.3 years.) In fact it would probably be better for practical purposes to separate the cases which had been three years or more in hospital and consider them as unfavorable. This would give 25 cases out of the "still in hospital" classes to be so considered. The value of the 10 "recovered" cases is minified somewhat by the fact that four of these have had

more than one attack, so that the "recovery" refers to the attack, but does not relieve from expectancy of other attacks.

It would give a better idea of probabilities to state the cases with repeated attacks separately. We should have then:

Recovered	3
In hospital 3 years and over.....	23
Dead	8
Improved—in hospital under 3 years.....	11
Unimproved—in hospital under 3 years.....	6
Case with recurrent attacks.....	10

SUMMARY.

1. A statistical review of clinical data in certain cases with onset between 40 and 59 is presented. Cases with gross brain disease or known exogenous causal factors are excluded.

2. The cases are drawn from Psychopathic Hospital admissions which have been shown to include about 20 per cent of cases which would not reach a state hospital for insane. The group therefore is a fair collection of mental disorders as they actually occur in the community.

3. The use of the age-period as viewpoint is an advantage in method; in that, it (1) emphasizes epochal characteristics, (2) is inclusive, and (3) eliminates minor errors in the statement of ages.

4. A previous study of 6000 consecutive admissions to the Boston Psychopathic Hospital has shown that (1) in the 5th and 6th decades, no particular diagnostic group is numerically predominant; and, that (2) within these decades "undiagnosed" and "unclassified" forms are twice as frequent as in the 6000 cases without respect to age.

5. In the present study 2000 consecutive admissions to the Boston Psychopathic Hospital have been reviewed. Three hundred and forty-five were between 40 and 59 years. The following classes were excluded: Continuous or periodic disorder beginning before 40; diseases with known exogenous cause (alcohol, syphilis, etc.); senile and organic cases. The residue of 106 cases forms the material of the paper.

6. The data utilized included the usual personal facts and physical and psychiatric examinations from the case records, the diagnosis, and in about half the cases a report, obtained from

various Massachusetts state hospitals, of subsequent course and later diagnosis after from one to five years.

7. A striking feature of the special group as defined in paragraph 5 is that nearly 72 per cent are females. Of all cases in a series of 6000 admitted between 40 and 59 (without regard to diagnosis) 45 per cent are females.

8. Sixty-five of the 106 cases could be placed definitely into the two groups of manic-depressive psychosis and dementia præcox. These diagnoses depend upon: (1) The opinions of the Psychopathic Hospital staff, which in a large proportion were (2) confirmed by the staff of the hospital to which many of the cases were later assigned, and (3) upon review of the cases in the light of all the obtainable facts. In a few instances review of the cases led to a change in the earlier diagnoses. Forty-one cases were not easily classified.

9. Of the 38 manic-depressive cases with onset after 40, 10 were of the manic type and 28 were depressed. The "agitated depressions" numbered 10 cases.

10. There was history of more than one attack in 16 out of the 38 manic-depressive cases. (No cases were included in this study if the first attack occurred before 40.)

11. Twenty-two of the manic-depressive cases were followed from one to five years after observation at the Psychopathic Hospital. Only five had neither recovered nor improved.

12. The diagnosis of dementia præcox was made in 27 out of the 106 cases.

13. The subsequent history of 19 dementia præcox cases was followed. Ten were in hospitals unimproved four years later, one died unimproved two years later, three were reported unimproved six months later. Four were reported to be improved, and one case was said to be recovered after the mental disorder had lasted over six years.

The eight dementia præcox cases without subsequent history were all unimproved upon discharge after duration of from six months to 2½ years.

14. In 41 cases the diagnosis was not clear, not confirmed by a second hospital, or upon review the cases appeared too anomalous to allow classification under the usual groups.

15. These 41 cases are reviewed with respect to a prognosis, on the basis of the 25 cases in which subsequent history is known. Five cases died, four recovered, seven improved, and nine remained unimproved.

16. In the five cases which died there was a possible relation between the psychosis and the cause of death in three.

17. The four cases which recovered showed no features at the Psychopathic Hospital by which the favorable outcome could have been predicted.

18. In the entire group of 106 cases information as to the use of alcohol is given in 38. Three drank heavily and 14 moderately. Alcohol seemed in no case to have any noticeable effect upon the psychosis.

19. The blood serum was positive by the Wassermann reaction in three cases and doubtful in one case out of 74 tested. Cerebrospinal fluid was "suggestive" in two cases and clearly positive in none, out of 13 tested. The cerebrospinal fluid in two cases with positive sera was negative. The third was not tested.

20. In 25 cases out of the 106 there were obvious somatic diseases and defects. In eight cases these were reflected in the psychotic picture, and in 17 there was no evident connection.

21. Delusions were expressed in 98 of the 106 cases. Most of the eight exceptions were *retarded* cases. Persecutory delusions were expressed 78 times, somatic 21 times, self-condemnatory 16 times and jealousy, grandeur, etc., a few times.

22. Delusions of negation were found in one case, and delusions of unreality in three.

23. Auditory hallucinations were described in about two thirds of the dementia præcox cases, one-sixth of the manic-depressive cases and one third of the unclassified groups.

24. There is a positive correlation between auditory hallucinations and allopsychic delusions in two definite groups of cases: (1) Depressed cases without motility disorder, and (2) cases in which the emotional state did not correspond to the content of the delusions.

25. As to emotional quality, 10 cases were elated, 68 were depressed, 15 were said to be "normal," six were "apathetic," two were variable and four passed from initial depression to final apathy or elation.

26. The expressed mental content of 102 out of the 106 cases

was of an unpleasant character, ranging from the most terrible delusions to hypochondriacal ideas.

27. Of the 10 cases which were continuously euphoric, only two were free from ideas of an unpleasant quality.

28. The emotional quality of the ideas and the emotional expression were consistent in 69 cases and inconsistent in 36.

29. Katatonic symptoms were present in eight cases or $7\frac{1}{2}$ per cent. One of these is said to have recovered, one died, one was lost sight of and the remainder were still in hospitals several years later.

30. The outcome on the 64 cases in which reports from subsequent hospitals are available is as follows:

Recovered	6
Cases with recurrent attacks.....	10
Improved—in hospital less than 3 years.....	11
Unimproved—in hospital less than 3 years.....	6
In hospital 3 years and over.....	23
Dead	8

31. A large proportion of the 36 per cent upon which there is no later hospital history belongs to the non-institutional class reached especially by a psychopathic hospital. The condition on discharge is stated in 30 out of the 42 cases of this group. Sixty per cent were improved or recovered.

CONCLUSIONS.

A review of psychoses from psychopathic hospital material, which arise in the 5th and 6th decades and are not due to gross brain disease nor to exogenous factors permits the following conclusions:

1. About 60 per cent can be classified as manic-depressive or as dementia præcox.
2. Cases with agitated depression, delusions of unreality and of negation, and with katatonic features are relatively uncommon.
3. Delusions of unpleasant content are characteristic and are almost invariably present.
4. In a large proportion (34 per cent) the prevailing mood is inconsistent with the ideas expressed.
5. If recurrent cases are counted as favorable the prognosis is good in about 25 per cent.

Excluding recurrent cases, an absolute recovery was reported in 10 per cent of 64 cases with later history.