Section of Psychiatry

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Aspects of Psychiatry in the Elderly

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The Schizophrenic Reaction-Type in Late Life

Three years ago Manfred Bleuler (1963) addressed this Section on 'Fifty Years of Research in Schizophrenia', and his address has recently been reprinted with critical comments from a number of other leading investigators. Even more recently, a series of lectures under the auspices of the Royal Medico-Psychological Association dealt with 'Recent Developments in Schizophrenia' (Coppen 1967). This presentation may serve as a footnote to these contributions, and will suggest that a study of schizophrenic symptoms as they are seen in late life lends support to some of the views expressed by Bleuler.

Bleuler (1943) was one of the first to concern himself specifically with late schizophrenia, but by 'late' he meant over the age of 40; in most of his 130 cases the illness had started between the ages of 40 and 49, and those with onset after 60 could literally be counted on the fingers of one hand. Nowadays, late life starts at 60 or 65, and in recent years quite a number of authors have concerned themselves with elderly patients presenting for the first time with symptoms related to the schizophrenic reaction-type. In many there was evidence that the disorder had been under way for some years, but most workers excluded patients whose symptoms could be traced back earlier than their 50th birthday. Among them are Lechler (1950), Hirschmann & Klages (1957), Klages (1961), Janzarik (1957) and Schimmelpenning (1965) in Germany, Funding (1961) in Denmark, and in this country Fish (1960), Kay & Roth (1961) and Kay (1963).

It has become established that far from being very rare, some 10% of first admissions after the age of 60 exhibit schizophrenic symptoms of late onset. There is general agreement that only certain features of the schizophrenic reaction type arise afresh at this late stage and that these are largely of the paranoid type, often but not always associated with an hallucinosis. On the other hand, psychomotor disorders like mannerism and catatonic phenomena are most unusual; dilapidation of speech indicating a formal disorder of thinking is never severe, and affective changes never reach a level of unmistakable incongruity.

When reporting his 10 cases of involutions-paranoia, many of whom had been followed into their 60s and 70s, Kleist (1913) remarked: 'I suppose that some of these illnesses belong among those cases to which Kraepelin quite recently referred as paraphrenics.' Roth's use of the term 'late paraphrenia' certainly summarized the clinical picture very well, but the last word against detaching paraphrenia from the paranoid form of schizophrenia other than for merely descriptive purposes was said long ago (Kolle 1931, Mayer-Gross 1932). The more recent workers agree on the following: subjects are far more often women than men; while usually well adjusted in life as far as their work history is concerned as well as their superficial social status and relationships, a high proportion of patients had failed in the more intimate interpersonal communications, especially with the opposite sex; many had exhibited various eccentricities and had become socially isolated by the time their actual illness began. These previous investigators varied in their views of the efficacy of shock therapies and psychological treatments of 'true' schizophrenia in younger patients, but they all agreed that the disorder occurring in late life was little influenced by therapeutic efforts: symptoms often remained well circumscribed and many personality functions continued to be unaffected; environmental manipulations might even lead to an encapsulation of symptoms; but few patients ill enough to require admission to a mental hospital were ever discharged. An investigation which is being fully

reported elsewhere (Post 1966) had as its aim the study of persistent persecutory states requiring psychiatric treatment for the first time after the age of 60, and since the introduction of phenothiazine therapy.

Briefly, patients were selected as satisfying the following criteria: they exhibited paranoid symptoms which were persistent and not part and parcel of an acute or subacute confusional state, and which continued undiminished after the removal of any coexisting affective disorder. In many patients with involutional and senile psychoses mixtures of depressive-paranoid and paranoid-schizophrenic features present puzzling problems of diagnosis, and what is more important nowadays, of therapy. These schizo-affective states are currently under investigation. In the completed study some 100 patients were collected during a period of ten years. The first batch of 24 patients was admitted before the introduction of phenothiazine therapy; the second batch of 37 patients was given adequate drug treatment in hospital. The progress of these two groups was assessed three years after admission (though many had in fact been followed for longer periods). From a third batch of consecutive patients, many of whom were treated with phenothiazines as outpatients, 32 were included in this study as having been under observation for at least one year (most of them for longer periods).

None of the patients of the first series who were not treated with adequate courses of phenothiazines, showed any significant improvement. All but 8 of the 69 patients treated initially with adequate amounts of one or the other of these preparations responded: in 20 the severity of symptoms was much diminished; in 41 the immediate response to treatment appeared to have been complete – they no longer had any psychotic experiences and no longer admitted to any paranoid beliefs concerning the present (Table 1).

The long-term results of treatment were quantitatively assessed in a complex fashion which allowed among other things for the strength of any remaining symptoms and the proportion of the follow-up period during which they were present. Here we present a simplified statement,

Table 1
Immediate results of treatment with phenothiazines

Initial course of phenothiazines	*No. of cases*	*Immediate results* *Poor*	*Moderate*	*Good*
None	24	24	–	–
Adequate	37	4	10	23
Adequate	32	4	10	18
	93	32	20	41

Table 2
Long-term outcome (9 patients omitted, see text)

Phenothiazine therapy	*No. of cases*	*Long-term outcome* *Poor*	*Moderate*	*Good*
None or inadequate	20	13	6	1
Adequate, not maintained	25	13	12	–
Adequate and maintained	39	5	13	21
	84	31	31	22

from which are omitted 6 patients who died during the first year of the observation period (incidentally removing all cases with sufficiently severe cerebral deterioration to cause death at this early stage), and 3 patients who were lost from the follow-up, also during the first year. Four patients in the originally untreated first batch received phenothiazines later, and are included. Long-term results (Table 2) are registered as 'poor' where, during the whole of the follow-up period patients had been suffering either from hallucinatory experiences or from continuing paranoid delusions referring to the present; under 'moderately good' are enumerated patients who suffered from these symptoms during varying proportions, but not the whole, of the observation period; and under 'good', patients whose symptoms had remained in abeyance following the initial course of phenothiazines.

It emerges clearly that the results were strongly related to whether patients received adequate drug therapy, and whether this had been successfully maintained for a long time ($P<0.001$). Only one patient not receiving phenothiazines appeared to have had a complete and lasting remission. The psychiatric social worker had succeeded in arranging for her continued attendance at an Old People's Club, but failed in getting the patient to take her tablets or to attend my clinic. She did, however, come to the follow-up interview, but refused contacts with a relative. By contrast, only 5 patients remained psychotic though fully co-operating, as far as could be told, in the original and in maintenance therapy. Of the total of 71 patients who at some time or other had received full phenothiazine courses, only 14 appeared to have gained full 'insight'. On enquiry they made statements to the effect that their experiences before treatment must have been imaginary, that they had been 'like in a dream', or even 'mentally deranged'. Full insight thus defined was preserved during the whole of the observation period by only 8 patients; 2 gained it at a later date. In 9 patients a modicum of 'insight' appeared at least for a time ('if you say so, doctor'). The overwhelming majority, including some patients who remained well and continued to co-operate, maintained that their original experiences had been real, but had ceased for various reasons.

Initial success with drug treatment, gaining some 'insight', and various characteristics promoting a good relationship with the psychiatrist were among the factors associated with successful drug maintenance and a good long-term outcome. In 33 of 43 patients making complete responses to drug therapy these remissions were maintained, and in 29 of them attempts could be made to discontinue maintenance dosages. Seven had not relapsed by the end of the observation period. In the remaining 22 symptoms recurred after a few weeks and in 15 of these treatment was successfully resumed.

Further work with elderly persons suffering from persecutory syndromes has confirmed that, provided patients can be made to accept drug treatment, this is successful in a large proportion of cases. Much remains to be learnt about psychological management of maintenance therapy, about late neurological complications of the long-term use of phenothiazine drugs, and about the later course of the drug-treated illness. But the results of the completed investigation permit of some conclusions which seem relevant to the causation of schizophrenia at all ages.

It will be recalled that the subjects of this study were patients over the age of 60 with persecutory syndromes occurring for the first time after the age of 50. Patients with transitory paranoid states were excluded, but some 18% had organic paranoid psychoses, mainly associated with cerebral arteriosclerosis or senile dementia confirmed in the course of a three-year follow-up. Well marked depressive admixtures, both in terms of the prevailing mood and of the thought-content, had been present at one time or other in some 22%, but had failed to yield to anti-depressive measures, though responding to phenothiazine therapy.

A question which arises again and again is whether elderly patients with this kind of symptomatology can be said to be suffering from schizophrenia (or from one of the group of schizophrenias) in the same sense in which this term is used in younger subjects. As may be expected, the answer given by this study was neither a clear 'yes' nor a clear 'no.' At the level of clinical observation and assessment, patients could be allocated to one of three symptom clusters: (1) Suffering from a mainly auditory hallucinosis and persecutory beliefs (usually of delusional strength and character), which were associated with and limited to the content of the hallucinosis; very few patients had no clearly confirmed hallucinations, and we may (in shorthand) label these patients as belonging to the cluster of 'paranoid hallucinosis'. (2) Patients who had usually some auditory hallucinations, but whose delusional preoccupations were more widely spread; also, they felt themselves observed, e.g. photographed or recorded; or various noxious substances were directed at them by their persecutors; or they believed themselves to be victims of thefts, defamation, &c. All these experiences were rather banal and, making allowances for the patients' intelligence and social situations, up to a point understandable. Provisionally, these patients were labelled as suffering from a 'schizophrenia-like psychosis'. (3) Members of this class were called 'schizophrenic', the criterion being that they exhibited what Schneider (1959) has called 'symptoms of first rank of importance in making a diagnosis of schizophrenia'. Many of these 'first rank' symptoms are not seen in late life, but the following (often in addition to those of paranoid hallucinosis and of schizophrenia-like psychosis) were encountered: feelings of trance or hypnosis and similar passivity experiences; intrusions, withdrawals, or echoing of thoughts; stabs and shocks entering the patient; strange changes in surroundings, or other bizarre experiences and beliefs; finally, the only type of auditory hallucinosis to which Schneider accorded 'first rank': voices anticipating the patient's thoughts, commenting on his actions, or discussing him in the third person.

These symptom clusters should be regarded as different and independent disease entities only if they could be shown to be clearly differentiated and if they differed, if not in all cases at least at a statistically acceptable level, in terms of ætiological factors, of response to phenothiazine therapy and in long-term prognosis.

The syndrome of paranoid hallucinosis was easily isolated, but the differentiation between schizophrenia-like and schizophrenic was sometimes doubtful. Moreover, a number of patients with recurrences after more than the three years' observation on which our analysis had been based have moved from one category to the other, mainly from schizophrenia-like to schizophrenic. The not unreasonable expectation and impression that paranoid hallucinosis patients would have been more frequently deaf than the rest was not statistically confirmed. The presence of confirmed or suspected cerebral disease or deterioration was not particularly associated with any one syndrome; in other words, 'first rank schizophrenics' were nearly as often 'symptomatic' cases as the others. Furthermore, the presence of psycho-organic features did not affect the response to drug therapy, though long-term prognosis was, of course, adversely affected. As in other studies of

Table 3
Some variables related to clinical syndrome

	Paranoid hallucinosis	*Schizophrenia-like*	*Schizophrenic*	*All cases*
Deafness:				
Present	9	10	9	28
Absent	13	27	25	65
Organic cerebral disorders:				
Confirmed	6	6	4	16
Still suspected	4	8	5	17
Absent	12	23	25	60
Number with psychiatrically affected first-degree relatives:				
?Schizophrenic	1	1	3	5
Total	13	25	18	56
Predominant pre-illness relationships:				
Satisfactory, beyond family	4	12	13	29
Family centred	8	14	10	32
Hostile, suspicious, unpleasant	10	8	11	29
Affective admixtures (mild + severe):				
Present	13	23	17	53
Absent	9	14	17	40
Age at onset:				
50–64	8	13	15	36
65–69	4	12	12	28
70–74	6	3	5	14
75+	4	9	2	15
Marital status:				
Single, separated, divorced	6	9	14	29
Married	6	6	13	25
Widowed	10	22	7	39
Communication of affect:				
Impaired	1	5	16	22
Normal	21	32	18	71
Effect of admission to hospital:				
Cessation of active symptoms	9	18	–	27
No change of symptomatology	7	17	32	56

late schizophrenia, family history of the disorder was rare, though somewhat higher than in the general population; it was only insignificantly more frequent in the group labelled schizophrenic.

Paranoid hallucinosis is a condition which is perhaps most easily understood as the further development of a previously deviant and paranoid personality. However, earlier personality problems as seen in the quality of interpersonal relations were only slightly less rare in members of the other two categories; similarly with past affective abnormalities and present depressive admixtures (which were insignificantly least frequent in association with schizophrenic symptoms) (Table 3). Schizophrenics did stand apart from the rest in terms of a few important variables: there was a slight trend for schizophrenics to have been younger at the time of onset; this finding was not significant, but might suggest that in contrast to other patients with a persecutory syndrome schizophrenics presented the tail-end of a continuous distribution curve with its apex in early life.

Schizophrenics were significantly more frequently never-married or divorced ($P<0.05$), suggesting that their sexual adjustment had been even worse than that of other types of elderly paranoid patients. Subjective affective states cannot be assessed adequately by merely clinical means, and psychophysiological methods were not available. However, as far as communication of affect was concerned, this was judged as somewhat inadequate, flattened, or bordering on the incongruous in 16 of 34 schizophrenics, but in only 5 of 37 schizophrenia-like, and in only 1 of 22 paranoid hallucinosis patients. On account of the subjective assessment of this characteristic and likelihood of contamination by other features no significance tests were applied.

Finally and most impressively, schizophrenic symptoms as against schizophrenia-like and paranoid hallucinosis symptoms were far less sensitive to manipulations of the environment. These had often been initiated by the patients' families or friends with varying degree of success. Much of the psychiatric social work done with these patients was directed towards giving them less stressful living conditions, but the best observed change of environment was admission to hospital before any course of drug treatment was commenced. Under these circumstances, cessation of active symptoms (but not correction of pathological beliefs) was observed in 9 of 16 cases of paranoid hallucinosis and in 18 of 35 with a schizophrenia-like psychosis; but it never occurred in any of the 32 schizophrenic patients requiring admission to hospital.

On the whole our findings did not suggest that the three forms taken by persistent persecutory states in late life presented separate disease entities. Though the differences were statistically insignificant, certain trends may, however, be noted: deafness, organic brain changes and onset after the age of 69 were less common in the schizophrenic syndrome, and a little more common in paranoid hallucinosis, suggesting that this condition could be more easily understood as the reaction of a previously ill-adjusted personality to certain stresses. By contrast, the illnesses of patients exhibiting clear-cut schizophrenic symptoms appeared to be more endogenous in character as suggested by more severe lifelong psychosexual maladjustment and slightly stronger hereditary factors.

These slight differences taken together add up to the suggestion that patients with paranoid hallucinosis, schizophrenia-like psychosis, and schizophrenic psychosis may perhaps be distributed along a continuum. At one end we find symptoms which are relatively understandable, at the other, the schizophrenic end, phenomena which are, to borrow Astrup's (1962) term, more in the nature of mental automatisms. It was only here, at the schizophrenic end of the continuum, that we found patients with passivity feelings, dissolution of ego boundaries, with thought echoing or withdrawal, and with voices commenting on them, anticipating their thoughts and discussing them in the third person. Patients of this type never lost their symptoms in a sheltered environment, and something approaching the affective changes in younger schizophrenics was seen in this group of patients alone. Though phenomenologically these patients showed many pathognomonic features of schizophrenia they had, in common with cases exhibiting a paranoid hallucinosis or a schizophrenia-like symptomatology, relatively slight hereditary loading, frequent personality deviations, the presence of deafness and of co-existing cerebral deterioration. Finally, all three forms of paranoid illness responded equally well to phenothiazine therapy (Table 4). The paradoxical impression that 'schizophrenics' responded rather better than the rest was not borne out on applying the χ^2 test.

Table 4

Long-term outcome of patients receiving adequate courses of phenothiazine drugs (patients who died during the first year have been omitted)

Long-term outome	*Paranoid hallucinosis*	*Schizophrenia-like*	*Schizophrenic*	*All cases*
Good	6	5	10	21
Moderate	7	9	9	25
Poor	2	11	5	18
	15	25	24	64

This concept of a continuum might lead us to regard the persistent paranoid illnesses of late life as manifestations of the schizophrenic reaction type at varying strength. Even in members of the 'schizophrenic' group they are far from overwhelming: patients when left untreated may become severely disturbed, but they rarely show true fragmentation of thinking and other dilapidations of personality functions characteristic of young schizophrenics. In this respect, they resemble other schizophrenics first falling ill during middle adult life, and especially those with mild or localized brain lesions. Temporal lobe epilepsy springs to mind as the foremost example. Though regarded as 'symptomatic' by Slater and his colleagues (Slater & Beard 1963), many of these patients were phenomenologically indistinguishable from paranoid process schizophrenics, except for the fact that like our late schizophrenics they did not suffer serious personality deterioration and remained often surprisingly co-operative in their treatment.

The submission that the paraphrenic disorders of late life are incomplete schizophrenias is not new. Kay & Roth (1961) suggested that the personality deviations which are found to have occurred in the earlier life of many elderly paraphrenics might be due to the same genetic constitution which, possibly under the impact of unfavourable social factors or those of ageing, finally produced a psychosis. Kay (1963), on the basis of his family study, suggested that a polygenic mode of inheritance fitted the observed facts better than a monogenic one. Shields (1967) has adduced a good deal of evidence in favour of a polygenic theory of schizophrenia at all ages: e.g. fewer affected relatives (suggesting the presence of fewer polygenes) were found when schizophrenia followed head injury, in paranoid as against hebephrenic and catatonic schizophrenics, and in patients with atypical, schizophreniform, or psychogenic illnesses.

Bleuler (1963) took up the suggestion that dispositions in the direction of a schizophrenic way of psychic life may exist in a hidden form in the healthy, and suggested that very different forces may destroy the dams protecting the healthy from being overwhelmed by schizophrenic types of experiencing and thinking. Interestingly, Smythies (1963) in the course of a review of the chemistry, metabolism and treatment of schizophrenia came to entertain similar suggestions.

In the light of experiences with elderly paranoid patients, the following ideas may be submitted for discussion: When the dispositions in the direction of a schizophrenic psychic life are strong, possibly on account of the presence of many polygenes and related metabolic abnormalities, schizophrenia appears early in life and affects further personality development severely. No doubt, the recently studied adverse family influences during the childhood and adolescence of young schizophrenics are additionally responsible for the early onset. A later breaking through of schizophrenic ways of experiencing and thinking may occur, in persons with weaker dispositions, in the wake of their first sexual involvement or experience, or of childbirth. Subtle kinds of brain changes (more often than gross cerebral disease) may be followed after a time by schizophrenic symptoms. I mention only temporal lobe epilepsy, GPI remitting under treatment, and the effects of amphetamine abuse.

Finally, schizophrenic symptoms may make their appearance for the first time late in life in subjects where genetic factors had influenced personality development towards eccentricity and a poor capacity for intimate relationships. Again, and in addition to increasing social isolation, subtle brain changes associated with ageing or with relatively mild degrees of senile or arteriosclerotic dementia may be the final precipitating factors.

In all these illnesses arising after early adult life, hereditary factors are slight and the clinical pictures tend to be incomplete. The symptomatology is largely paraphrenic, i.e. paranoid, but with only vestigial affective or volitional involvement, and with little evidence for schizophrenic disruption of the processes of thinking. In our elderly sample, the disorder had in only one-third manifested itself to such an extent that most psychiatrists would have made a confident diagnosis of schizophrenia. The incomplete or partial nature of the disorder was suggested by the finding that a mere suppression by drug therapy of paranoid hallucinosis, of schizophrenia-like, or of schizophrenic symptoms was sufficient to restore the previous state of mental health. Whether this is the end of the story remains to be seen.

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The Relationship between Quantitative Measures of Dementia and of Degenerative Changes in the Cerebral Grey Matter of Elderly Subjects *[Abridged]*

The senile plaque was first named as such and related to senile dementia by Simchowicz (1910). The association of plaques, neurofibrillary change (Alzheimer 1907) and granulovacuolar degeneration (Simchowicz 1910) with the psychological changes associated with senescence has been much debated in the half century that has elapsed since these early observations. Difficulties in interpretation entered when it was discovered that such changes could be demonstrated in the brains of some psychologically well-preserved individuals. Thus Gellerstedt (1933) found senile plaques in 84%, neurofibrillary change in 97% and granulovacuolar degeneration in 40% of the brains of normal old people. Although the changes were scarce and detected in some cases only after careful examination, Grünthal (1927) and Cerletti (1925) had previously shown that plaque formation could on occasion be just as intense in the normal subject as in the demented old person. On the other hand, the presumed specificity of the change for senile dementia was weakened by the claim (Rothschild 1937) that senile dementia could occur without the presence of senile plaques and that there was a poor correlation between histological change found at post-mortem and the degree of intellectual impairment observed during life.

The reasons for some of these discrepancies become apparent when clinical descriptions of cases of organic psychosis in old age recorded twenty or more years ago (and some recorded at a later date) are examined. It then becomes clear that cases with prominent, florid, depressive symptoms were frequently regarded as having an underlying organic basis. Post-mortem neuropathological findings could be readily invoked to provide confirmation of a kind for such a view. For Newton (1948) found plaques and neurofibrillary changes in 32 of 76 cases of affective psychosis and in 6 out of 24 cases of schizophrenic and paranoid psychosis.

In the absence of a quantitative approach to the problem, 'all-or-none' theories tend to hold the

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