Psychological aspects of geriatrics

FELIX POST

M.D., F.R.C.P., D.P.M.

*The Bethlem Royal Hospital
and the Maudsley Hospital, London, S.E.5*

Background

Never previously-experienced changes in the age structure of Western populations have been gathering momentum since the last decades of the nineteenth century. It is well known that one resulting feature has been a spectacular increase in the number and proportion of persons belonging to the involutional and senescent groups. In response, a special branch of medicine, geriatrics, has become established. Many psychological disorders have their greatest incidence during middle and late life. The pressures arising from this on treatment and care facilities have led to increasingly intensive studies in the psychiatry of old age, a subject to which Kraepelin referred at the beginning of the present century as 'that darkest chapter'. To-day, it may be claimed that studies of the psychological disorders of late life are in the spearhead of recent psychiatric advances.

Epidemiology

The prevalence of psychiatric disorders in the elderly population has been investigated by means of numerous recent surveys (e.g. Kay, Beamish & Roth, 1964; Parsons, 1965). Though differing somewhat in aims and methods, by and large the findings obtained are in good agreement with one another, and testify to the high scientific quality of these investigations.

Between 20% and 30% of persons over 60 were found to be exhibiting psychiatric symptoms or psychological deviations. Of these, some 10% showed the effects of pathological brain changes, but they were seriously disabling in only 5-6%. Severe depressive or paranoid states were encountered in 1-2%. Neurotic and character disorders of disabling severity were estimated to be present in between 5% and 9% of elderly community subjects, but in a further 10-15% minor psychological deviations were noted. Within the elderly populations studied, the incidence and prevalence of psychiatric symptomatology and disability increased with rising age. Functional, especially affective, disorders

predominated below the age of 70. After 75, psychorganic states accounted increasingly for the rising psychiatric morbidity. Even beyond the age of 85, however, some 70% of community residents were found to have remained free of the more severe forms of mental deterioration (Gruenberg, 1961).

In addition to complaints of decreasing energy, most old people report increasing memory difficulties (Lowenthal *et al.*, 1967). In one investigation (Parsons, 1965) clinical impressions were checked against performance on a test of short-term memory. Only 4.4% of a community sample of elderly persons were regarded as generally and severely demented; 9.5% were quite severely forgetful, but they were not handicapped in the area of self-care on account of this. Slight memory impairment was found in 21.9%, and none in 64.2%. The results of many studies have indicated that psychic and physical impairment tend to be closely correlated. Men tend to die earlier than women, but if they do survive beyond the age of 75 or 80 they are often especially well retained physically and mentally. By contrast, women who reach higher age levels more often tend to exhibit many signs of physical decrepitude. Along with this, they also suffer more frequently from mental impairment. Parsons (1962) found that the average woman over 80 shows moderate or severe impairment of memory functions. On account of the frequently associated physical handicaps, he reported that only 22% of women above this age were still capable of self care. On the other hand, it is well known that centenarians are a statistically 'abnormal' group made up of persons with unusually robust physical and mental constitutions. They are generally reported as mentally well preserved. Deterioration of personality functions, such as ability to plan ahead, consideration for others, concern with personal appearance, interests and hobbies, as well as an increase of irritability and of anxiety proneness—all these features were found to correlate strongly and positively with decline of memory

and of other cognitive abilities. A gradual 'disengagement' (Cumming & Henry, 1961) of the ageing person should be regarded as normal and in many ways as advantageous. More severe personality changes occur in only a small proportion of old people, reaching, however, the 50% mark after the age of 80. Beyond this, once again, old women deteriorate in personality far more frequently than men.

Surveys carried out during the last 10 years have thus given us a fairly clear picture of the kind and size of mental health problems in old age. The overwhelming majority of people pass through the last period of the normal life span without severe decline in mental health, but more subtle changes in emotional and cognitive adjustment affect an increasing proportion after the age of 75. These tend to produce (especially in the presence of chronic physical disease or invalidism) various disabilities not amounting to diagnosable mental illness. Such states of senile deterioration become almost the rule in women surviving beyond 85. Only between 5% and 15% of persons over 60 may be expected to develop a more clear-cut mental illness. A serious shortcoming of the surveys reported so far derives from their cross-sectional nature. A follow-through of subjects has been attempted but rarely, and then only over some 2 or 3 years (Lowenthal *et al.*, 1967). We, therefore, are almost entirely ignorant of the rates of various declines, and whether and how often mild deteriorations are the prelude to diagnosable illness. We thus lack information essential for starting preventive treatment.

More seriously from a practical point of view, much psychological ill health, which might be successfully treated or whose impact on the family might be softened, remains unrecognized. Family doctors (Williamson *et al.*, 1964) tend to be aware of only half of psychiatric disorders in their elderly patients. Also, for every one person resident in local hospitals or other mental institutions anything between five and ten 'cases' were ascertained in the community. Subjects with organic psychoses found living at home were in no way less severely ill and disturbed than those traced to hospitals. Very few of the milder cases were receiving any form of treatment and support. In three areas with good treatment facilities for the aged (PEP Report, 1966), the proportion of persons over 65 referred to the psychiatric services did not differ from the proportion they formed of the total population, though the incidence of mental disorders rises steeply with advancing age. On the other hand, persons over 65 were more often admitted to hospital

than younger people. They were much less frequently referred to out-patient clinics. This confirms the impression that elderly psychiatric patients are sent to specialists only late in their illness, with demands for in-patient care, rather than for curative treatment.

Nosology

As in the case of younger persons, surveys have shown that a very large proportion of elderly people exhibit minor personality defects or psychological symptoms. As was pointed out in the preceding section, these tend to become more frequent and more troublesome with advancing years. Minor disorders, however, are especially likely to remain unrecognized by family doctors, and are hardly ever referred to clinics (Kenel & Shepherd, 1962). Personality disorders and neuroses of the aged have thus been little studied. By contrast, important contributions have been made during the last 25 years by psychiatrists dealing with patients ill enough to be admitted to hospital. The well-known studies by Roth and his collaborators (1952, 1955) have confirmed that elderly mental patients with well-established disorders can be distributed over two major diagnostic groups: those with gross cerebral changes exhibiting the organic type of mental reaction, and those without detectable cerebral pathology. Roth confirmed that there were (in terms of their natural history) two main organic psychoses in late life: acute confusional states (or, to employ American terminology, brain syndromes), and chronic brain syndromes, mainly arteriosclerotic and senile psychoses. In spite of its unpopularity, the term 'dementia', either arteriosclerotic or senile, will be substituted in this context for 'psychosis', on account of being more precise as long as it is reserved for patients with irreversible and progressive deterioration of cognitive as well as of all other personality functions clearly related to progressive pathological brain changes. Roth also confirmed that a large proportion of elderly mental hospital patients exhibited the affective reaction type, and his group's claim (Kay, Roth & Hopkins, 1955; Kay, 1962) that the depressive and manic illness as seen in them differed little from those encountered at younger ages has been amply confirmed by other workers. A small proportion of patients were found to be suffering from the paranoid variety of schizophrenic symptoms arising for the first time late in life. The existence of this disease entity has also been confirmed by others, and the fact that Roth's use of the label 'late paraphrenia' has been criticized is unimportant. The classification el-

borated by him and his fellow-workers has received wide acceptance, and has cleared the decks. It is proposed to review recent progress in geronto-psychiatry within the framework of this simple modern nosology. Underlying complexities and research needs will be explored, as well.

Personality disorders and minor psychological disturbances

Though these conditions are common among the elderly, they are rarely seen by psychiatrists with research interests, and few studies with 'hard' findings are available. Their enumeration and condensed review would not do justice to this important subject, and an impressionistic survey will be given. Islands of knowledge in a sea of uncertainty will be easily discerned.

It is occasionally possible to survey the life-story of an abnormal personality or of a neurotic sufferer. In this way it has been shown that patterns of character disorder or of psychoneuroses alter with rising age (Post, 1965). In the young, outward directed and 'acting-out' disorders predominate strongly. The deviant or neurotic young person tends to externalize his desires and impulses, or to demonstrate his anxiety over conflicts in an immediate and outwardly visible form, which impinges strongly on his environment. Conditions of this kind, such as delinquency, aggressive psychopathy, addictive behaviour and conversion hysteria are only rarely encountered for the first time after middle life. By contrast, the prevalence and incidence of inwardly directed disorders increase with age. These are character changes which can be viewed as withdrawal from the dangers of the subject's 'world', or neuroses which present the internalized elaboration of conflicts or anxieties arising from various sources. Shy and poorly socializing persons may in later life become suspicious, odd, eccentric, seclusive, or even prone to persecutory interpretations. Senile miserliness can be seen as an exaggeration of a life-long disposition towards parsimony. Anxious worriers become increasingly fear-ridden, and hypochondriasis in an anxious-depressive setting has emerged as the commonest minor psychiatric syndrome in old age. It was ascertained in 33% of community subjects who volunteered for an American study (Busse, Dovenmuehle & Brown, 1960). Earlier claims (Mueller, 1953) to the effect that obsessional illnesses improved with age have not been confirmed (Kringlen, 1965), and it has been suggested that the obsessional variety of neurosis was the only one which occasionally

arose in elderly persons for the first time in life (Post, 1965).

Form and content of minor psychiatric disturbances in the elderly can both be related to the direction pursued by healthy personality changes with rising age: decreasing extroversion culminating in increasing 'disengagement' (Cumming & Henry, 1961). This personality shift seems causally linked with decreasing learning ability and with psychomotor slowing due to age changes in neurones, especially in those of the brain (summarized by Post, 1965; Bromley, 1966; and in a popular form by Post, 1967a). Declining sexual libido is another accompaniment of ageing which brings about decrease of intimate physical and emotional communication. There is a libidinal shift from giving to retention, and from genital to pregenital orientation, with a parallel move of psycho-pathology to anal (hypochondriacal and obsessional) and internalized aggressive (depressive) themes.

What little is known about *psychosexual disorders* in ageing persons has been recently summarized (Post, 1967b). The following emerged: Sexual content is either overtly or covertly present in the symptomatology of many elderly psychiatric patients. It may take the form of intrusions of obscene thoughts, of delusions and hallucinations of an erotomaniac kind, of pregnancy, or of jealousy. Anxiety states related to waning sexual potency are surprisingly rare, probably because sexual desire and ability fade away very gradually in both sexes: among 149 persons between 60 and 93 still living with their spouses, 54% claimed to be continuing complete sexual relations. Up to the age of 74 this was true for about 60%, but beyond this age the average fell to 25% (Newman & Nichols, 1960). It was also found that continuation of sexual intercourse was largely determined by habit and opportunity, as it occurred in only 7% of single, widowed or divorced subjects. Sexual activity was most readily extinguished in those who earlier in life had either been lacking strong sexual desires, or in whom they had been strongly inhibited. Masturbation is more frequently practised in late life than is realized and may be an unsuspected source of morbid anxiety. In marriage, the main reason for giving up complete sexual activity is physical ill-health. It has been stressed, however, especially by Rubin (1966), that much concern and unhappiness may be unwittingly caused by doctors, who issue prohibitions especially in relation to many types of heart disease, to hypertension, and to the aftermath of prostatectomy. Carefully considered advice should be given instead. It should be re-

membered that sudden cessation of sexual interests at any age may be an early symptom of depression. Transgressions of elderly men against children are the only sexual disorders of late life which are encountered with any degree of frequency in public psychiatric practice. It is now thought that heightened arousability due to prostatic disease or lowered inhibition from cerebral deterioration are hardly ever the cause of these unfortunate occurrences. It has been suggested (Hirschmann, 1962) that elderly men without obvious earlier sexual problems tend to be involved. Possibly they had always overvalued the importance of their sexual potency, and thus were unable to accept its waning in old age. While no longer acceptable to adult partners, children whose sexual activities were *ipso facto* incomplete tended to be sought out. It is claimed that guidance and supervision can tide over these elderly transgressors during a dangerous but transitional period. It is worth remembering that offences against children are far more common in younger men.

The only other important disorder of the elderly is *alcoholism*. Occasionally this addiction starts for the first time late in life, and according to Droller (1964) it is often associated with 'increasing isolation, grief, and the other erosions of life inseparable from old age'. This investigator found that 1.7% of persons seeking admission to a geriatric hospital were alcoholics. Families tended to cover up the addiction, and to allow themselves to be blackmailed into supplying drink under the guise of medicinal needs (e.g. cardiac stimulants). By the time the condition came to medical attention irreversible liver and brain damage might have occurred. Social management rather than deconditioning or aversion therapy was the treatment of choice. Family pressures could usually be re-directed into the right channels, but in isolated old people settlement in a home for the elderly was always indicated. It has been claimed that elderly alcoholics respond especially favourably to well-organized after-care (Madeddu, 1967). Once again, alcoholism may be secondary to a depressive illness, and ceases to be a problem after its successful treatment.

Returning to the *psychoneuroses*, we shall recall that they most commonly assume the form of hypochondriacal anxiety states. In a sample over the age of 60 drawn from a family doctor's practice (McDonald, 1965), over half of persons ascertained as neurotics fell into this diagnostic group; one-third had phobic symptoms, and in one-fifth there seemed to be quasi-hysterical exaggerations of existing physical de-

fects. Employing some validated measures of cognitive disability and of neuroticism, it was possible to refute the view that neurotic symptoms in old age were forerunners of dementia more often than could be explained by chance. McDonald (1968) also studied the important relationship between depression and neurotic symptomatology. He was able to divide his elderly neurotics into those exhibiting mild but sustained depression of mood, and those apparently free of this kind of disturbance. These groups of 'affective' and of 'other' elderly neurotics were compared on a considerable number of variables. Not surprisingly, tension and sleep disturbance were significantly more frequently found in neurotics with depression. 'Other' neurotics were significantly more likely to have suffered neurotic disabilities in childhood or adolescence, and to have been exposed to a parent exhibiting behavioural maladjustment, especially alcoholism with violence. Among the 109 neurotics over 60 studied, only forty-one had shown symptoms for the first time after this point in life, and all but seven of their number had associated depressive symptoms. This confirms the suggestion that neurosis persisting into old age is a life pattern associated with early environmental stress, while neurotic symptoms first arising in late life present exaggerations of milder neurotic personality traits in the wake of depression. Similar conclusions were reached by Benaim (1956) during a study of obsessional illnesses of the elderly.

In summarizing recent literature on the aetiology, course, and treatment of late life neurosis, McDonald (1965) points out that this is rather speculative. The large psychotherapeutic literature has been summarized elsewhere (Rechtschaffen, 1959; Post, 1965): First of all, most neurotic symptoms cease to be troublesome as soon as depression is controlled. Where mood disorders are unimportant, the aims of planned (as against merely supportive) psychotherapy should be strictly limited. The therapist might with advantage assume a somewhat submissive role, even to the point of creating the illusion of being vanquished with consequent enhancement of the patient's self esteem (Goldfarb & Turner, 1953). Occasionally, therapy might have to be directed primarily to other members of the patient's entourage, especially a daughter sharing the ageing mother's home. It has been found that sometimes the older person's symptoms are related to insecurity in reaction to the child's (or more rarely of the spouse's) psychological disturbance. Most writers stress that any final break in therapy should be avoided, though

elderly patients ultimately need be seen only at very long intervals.

Affective illnesses

Though these may occur at any age, severe attacks requiring admission to hospital begin to appear most commonly between the ages of 55 and 65 in men, and between 50 and 60 in women (Norris, 1959). It is well known that the rates of suicide, and of attempted suicide, also rise with increasing age in a very striking fashion. In Western countries *manic illnesses* are relatively rare at all ages. In the elderly they are often characterized by an aggressive and hostile, rather than by a purely euphoric mood. Persecutory symptoms are common. Depressive admixtures are almost always easily discerned. Manic states in late life tend to recur at very frequent intervals, and sooner or later melancholic phases tend to make their appearance as well (Post, 1965). The attacks themselves are fairly easily and reliably controlled by phenothiazine therapy (haloperidol being most familiar to this writer), and tend to subside with very rare exceptions after 2–6 months. There is a strong impression that long-continued lithium therapy prevents recurrence in a fair proportion of patients. These may also cease following the removal of originally not suspected stresses, e.g. where retirement has been reluctantly advised.

Far more has been learned in recent years concerning the much more common *depressive illnesses* of late life. Recent advances in this field have been more extensively discussed elsewhere (Post, 1968). They have perhaps followed on an increasing recognition of the fact that depressed elderly people are only rarely dementing, and that their condition responds very well to modern methods of treatment (Roth, 1955). It is, of course, accepted that severe as well as mild depressive phenomena, including suicide, can and do occur in the course of dementing processes, or indeed of any intracranial disease. Cerebro-vascular incidents, like other incisive physical disorders, sometimes precipitate depressive states. There may even be an indirect aetiological relationship between cerebro-vascular disease and the depressive diathesis (Post, 1962). But, on the basis of recent long-term follow-up studies, it can be stated categorically that elderly depressives do not develop *de novo* either senile dementia or arteriosclerotic brain disease any more frequently than the elderly population as a whole (Kay *et al.*, 1955; Kay, 1962; Post, 1962). The great majority of depressive illnesses in late life are thus unrelated to the dementias of old age. When depressive states do occur in the

course of these deteriorations, they are no longer thought of as arising directly from pathological processes involving cerebral areas mediating or originating the experience and expression of affect. Lesions in these areas merely produce emotional lability, and forced or paradoxical laughing and crying. For the following reasons it is suggested that in the case of depressive illnesses the brain damage acts as a stress which mobilizes or facilitates the affective mental reaction type: 'Organic' depression can be as severe as 'functional' depression, and is frequently indistinguishable on the basis of the affective state alone; most cerebral-arteriosclerotic depressives have suffered affective illnesses earlier in life, and/or have a positive family history for severe depression; the immediate results of treatment are equally good in 'organic' as in 'functional' depressives, using the same therapeutic agents (Post, 1962, 1965).

Similarly, it is not now thought that the depressions of late life form special subgroups of the affective syndrome, such as *involutional melancholia*, senile depression, or manic-depressive psychosis. It is quite true that depressions in the elderly tend to be more severe and more prolonged than those of younger patients. They are also characterized by a higher recurrence rate. However, just as at other ages, most depressive illnesses of the elderly are mild and unobtrusive as far as behaviour disorders and thought content are concerned. In late life, agitated pictures are more common, and the occurrence of hypochondriacal symptoms in from 60 to 70% of patients is far in excess of what is seen in younger cases (De Alarcon, 1964). A fair proportion of elderly depressives have had socially withdrawn, rigid-obsessional, and instinctually inhibited personalities. Their illnesses sometimes approximate the textbook pictures of involutional melancholia: agitated depressions with somatic discomforts and concerns in the mild variety, or with bizarre hypochondriacal delusions of a nihilistic kind and almost grandiose convictions of guilt, as well as with ill-concealed aggressive attitudes. It has, however, been demonstrated that this syndrome is also seen, perhaps with equal frequency, in younger patients (Tait, Harper & McClatchey, 1957). Also, when encountered in elderly patients, it is not specifically associated with an involutional or senile onset (Post, 1962). Involutional depressives do not possess any genetic-hereditary characteristics which single them out from manic-depressives (Stenstedt, 1959). Roth's (1955) earlier claim that depressives with first attacks only late in life had more robust and better

adjusted previous personalities than patients with illnesses starting earlier in life, has been fully confirmed by Chesser (1965). Beyond chance expectation, late onset of depression was associated with less hereditary loading (a finding obtained also by Kay, 1962 and by Post, 1962); with better sexual adjustment throughout life; and with none of the morbid personality traits associated with the later development of involutional melancholia according to Titley (1936). The only 'pre-involutional' traits present insignificantly more frequently in late onset depressives were overtidiness and meticulousness. By contrast, early onset of depression was significantly more often associated with a life-long sensitive and depressive outlook, in other words with so-called dysthymic personality traits.

Bound up with the finding that a stronger personality structure is characteristic of depressions first manifesting themselves in late life is the suggestion that the majority of these illnesses are *reactive depressions*. Without any previous tendencies towards affective illnesses, the patient has only broken down under the stress inherent in old age. It has been confirmed that in between 60% (Post, 1962) and 80% (Chesser, 1965) of elderly depressives there had occurred events which in terms of time relation and incisiveness could be evaluated as precipitating. All could be classed in general terms as 'losses', either literally—widowing, the moving away of children, or retirement—or more indirectly losses of self-esteem, such as undermining of the feeling of health (immortality!) Physical illness is, in fact, the most common precipitant of depression in the aged. Clinically, these 'reactive' depressions were no different from the rest, and psychotic symptoms were as common as in ('endogenous') illnesses lacking any recognizable precipitant. Several types of loss, especially that of a spouse (and with a shorter time interval between that event and the onset of depression) were more often encountered in late as against early onset depressives over 60, but not to a statistically significant extent. It thus seems unlikely that previously stable people had broken down for the first time in life solely or even predominantly as a result of stresses which are the common lot of persons surviving into old age. Other recent investigations (Hopkinson, 1964; Chesser, 1965) have given equally inadequate support to a suggestion that a late onset of depression may itself be an inherited characteristic; that these patients belonged to families in which the manifestation of genetic factors of depression had been successfully postponed later and later into the post-reproductive period of life.

Current research into depressions after 60 is thus up against the realization that no really adequate reasons have been discovered for their frequent occurrence for the first time in late life. At present, investigations are centred on the possibility that age changes in the brain (not gross deteriorations of brain structure as seen in the dementias of old age, but more subtle intracellular changes) may facilitate the depressive reaction type in only weakly predisposed subjects, or that they may aggravate its manifestations in persons with earlier depressive attacks. Many psychological investigations of depressives have suggested that their clinical states can be explained in terms of inhibition of cerebral arousability or excitability. Cerebral arousal is diminished in dementia, as has been demonstrated in terms of increased sensitivity to intravenously administered sodium amylobarbitone (Caird, Lavery & Inglis, 1963). This lowered sedation threshold was also associated with deficient learning ability. Severe depression is not infrequently characterized by memory disorders which are clinically and psychometrically indistinguishable from those seen in old age dementia, but which tend to disappear on recovery (Kendrick, Parboosingh & Post, 1965). It is suggested that, due to ageing, there had been lowering of base line cerebral excitability, and that as a result of depression this had been further lowered to levels found in dementia. The occurrence of 'pseudo-dementia', especially in severe depressions (Post, 1966a) thus gives support to a hypothesis according to which depression is produced by inhibition of cerebral activity. The psychological mechanism of this might be inhibition in response to overwhelmingly strong anxiety stimuli. The stresses which we saw operating frequently before the onset of depression in late life may represent just such anxiety stimuli, and the ageing brain with its lowered level of arousal might be expected to respond to them with inhibition (=depression, or even learning defects) more readily than the youthful brain. Though depression may be conceptualized as the result of psychological events acting on a predisposed (lowered arousal level) CNS, the actual mechanisms are, of course, biochemical ones. In this way, reserpine and other pharmacological preparations used in the treatment of hypertension produce depressive syndromes, perhaps especially often in the elderly.

Acting in the opposite direction, in the *therapy* of depression we employ chemical agents on brain function, either directly in the shape of so-called anti-depressive drugs, or indirectly via the application of electro-convulsive shocks. Over

and above the amelioration of stresses produced by psychologically orientated hospital care, the employment of ECT in the last 20 years has almost certainly produced a much enhanced remission rate in elderly depressives, shortened their illnesses, and reduced the number of deaths directly or indirectly attributable to melancholic states. It is not possible to give scientific proofs of this overwhelmingly strong impression, because comparisons of the outcome of patients before and after the use of ECT in the elderly are fraught with difficulties. For once, patients admitted to mental hospitals used to be more severely and more chronically ill. Since the introduction of physical treatments, the number of admissions has risen considerably and has been swelled by patients with relatively mild and recent illnesses. At a time when ECT was the only specific treatment of depression available, only some 17% of patients over 60 failed to remit (Post, 1962). It has since then been shown that a proportion of elderly depressives failing to respond to this form of therapy may be significantly improved following one of the modified leucotomy operations (Post, Rees & Schurr, 1968). Unfortunately, the long-term results during the ECT era were rather disappointing. Only some 19% remained well over the subsequent 6 years, the remainder showing frequent recurrences and/or varying amounts of psychic invalidism. Attempts are being made at the present time to investigate whether the introduction of anti-depressive drugs and of more active community care have succeeded in improving long-term outlook. Certainly, it has been shown that imipramine is as successful during initial treatment as ECT regardless of the type and severity of the depression (Post, 1968). There is an impression that maintenance drug therapy may prove successful in avoiding frequent relapses and mental invalidism in elderly depressives.

Persecutory states

Considerable recent advances can be claimed in our understanding and management of the paranoid illnesses of the elderly. Ideas and experiences of persecution become increasingly common with rising age, and they tend to colour personality changes, depressive illnesses, manic states, delirious reactions and dementias. Persistent persecutory states not related to affective or organic psychoses come relatively rarely to psychiatric attention, and may therefore be dealt with rather briefly. (For greater detail reference should be made to Kay & Roth, 1961; Post, 1966b (where a review of British and foreign literature will be found); and Post, 1966c.)

These conditions arise most commonly in persons who had been quite well adjusted as far as their working lives were concerned. However, they had very often failed in their more intimate relationships, were often single or divorced, and had only rarely reached a stage of full and normal sexuality. A high proportion had belonged to religious or political minority groups, and severe social isolation and a cranky existence were common during the years preceding the onset of the persecutory psychosis. These features were most commonly found in patients finding asylum in regional mental hospitals, and more subtle personality defects were the rule in patients first referred to teaching hospital clinics.

The clinical pictures are variable. Partly in relation to deafness, there may be only an auditory hallucinosis, often limited to the patient's own home. In many cases, there are additional persecutory experiences of a rather banal type, and these states might be described as schizophrenia-like. Finally, the patient's state may be indistinguishable from that seen in younger paranoid schizophrenics, with bizarre beliefs and experiences, passivity and influence feelings, and auditory hallucinations commenting on the patient or discussing him in the third person singular. Occasionally, these illnesses may be episodic, or respond for the time being to changes in the environment. Not uncommonly, they finally turn out to be related to manic or depressive psychoses. Many illnesses of this kind probably continue to be tolerated in the community as eccentricity or seclusiveness (Macmillan & Shaw, 1966), indefinitely. Admission to mental hospital in the past almost inevitably led to permanent stay. Well substantiated claims have, however, recently been made for the efficacy of phenothiazine therapy. Provided that sufficiently large doses are employed, the disturbing symptoms can be suppressed in almost all patients, and many gain retrospective insight to a varying degree. Maintenance therapy on a much reduced dosage results in freedom from further disturbances, and in a few patients drug therapy may finally be discontinued. The main difficulty arises from the unwillingness of so many patients to accept treatment and long-term medication. Just as in the maintenance therapy of elderly depressives, a good deal of psychotherapeutic skill (in order to build up a relationship with the patient) may be required before success can be achieved.

All recent investigations, with the exception of that of Herbert & Jacobson (1967), have shown that in probands with 'late paraphrenia' the number of relatives with schizophrenia is

only slightly in excess of that found in the general population. The suggestion has been put forward that the persistent persecutory states of the elderly present incomplete forms of the schizophrenic reaction type. On account of very weak genetic factors, and possibly relatively favourable childhood experiences, these patients manifested throughout adult life only mild deviations, which might be termed schizoid. Social, psychological, and physical stresses of late life might lead to the emergence of psychotic phenomena which are either only reminiscent of schizophrenia or quite typical of those seen in the paranoid variety. They all respond to the same therapeutic agent, which is found effective in the suppression of many symptoms seen in young schizophrenics (Post, 1966c).

Organic psychoses

Both medically and socially, these are the most important psychiatric disorders occurring in real old age, i.e. after the age of 75. *Acute confusional states*, the most frequently occurring type, are seen by family doctors, physicians and surgeons far more often than by psychiatrists, on account of their transitory nature. They occur during the course of many physical illnesses and in association with operations. The immature brain of the child and the ageing brain are thrown into states of dysfunctioning in the form of delirious reactions with relatively slight imbalances of brain metabolism, such as seen in infections, anoxaemia, deficiency, and metabolic disorders. Patients are usually seriously ill, with a fluctuating level of awareness, often terrified, restless, and visually hallucinated. It is not, therefore, surprising that there have not been any elaborate contributions from biochemical or psychological researches. Recent teaching (e.g. Allison, 1962) has probably led to an increasingly frequent recognition of the disorder, and to far more diligent search for the causative physical conditions in sudden mental breakdown during old age. Psychologically sophisticated management (Kennedy, 1959) is likely to obviate the use of large doses of sedatives, which so often lead to further intoxication and increasing confusion. Barbiturates and paraldehyde have now been superseded by phenothiazines, especially promazine hydrochloride (Post, 1965), but their long-continued use once the crisis is over should be discouraged (Barton & Hurst, 1966). It is said that patients, if they survive acute confusional states, return to previous levels of cognitive ability and personality functioning, but no recent follow-up studies confirming this general teaching seem to have been published.

Chronic confusional states are exhibited by senile subjects on the basis of a variety of disorders. Regardless of their causation, the clinical pictures tend to be uniform. As was pointed out in the section on epidemiology, memory defects of a severe and disabling kind become very common over the age of 80, especially in women, but should be regarded as part and parcel of a chronic confusional state, only, if associated with disorientation, dyspraxia, and dysphasia. An aged person, who merely forgets names or events, which he may recall readily an hour or two later, and who is not handicapped in his speech or (for apractic reasons) in self care, should not be regarded as a dement (Kral, 1962). The term dementia should be reserved for patients in whom there is evidence for progressive and irreversible deterioration of all mental functions, and in whom there are features suggesting parallel cerebral changes. There are probably many senile persons in mental hospitals, and even more in institutions for the chronic sick or for destitute aged people, who are inactive, memory deteriorated, disorientated, and variously disabled, but in whom rehabilitative methods might demonstrate the absence of a dementing process in the proper sense. In collecting a sample of probands with senile dementia, Larsson Sjoegren & Jacobson (1963) had to reject 340 of 719 cases, who had on admission been given this diagnostic label. The ever-increasing number of elderly persons with persistent confusional states is one of our most important health and social problems. Before any solution is attempted, much clinical and basic research is needed. At the present time we are still severely handicapped by failure to recognize the various causes operating, and it remains doubtful to what extent isolated research findings can be applied to the problem as a whole.

It may now be accepted that states characterized by severe memory and learning defects, as well as by dysphasic and parietal lobe symptoms, are always associated with structural brain changes demonstrable at post mortem or on the examination of biopsy material (Sim, Turner & Smith, 1966; Smith, Turner & Sim, 1966). It is true that occasionally severe cerebral changes are discovered in persons who had allegedly been well preserved mentally before their death, and vice versa. However, Corsellis (1962) has conclusively shown that in the overwhelming majority of cases there existed a highly significant positive correlation between the clinical diagnosis of a chronic brain syndrome and the presence of pathological findings. More recently,

Roth, Tomlinson & Blessed (1967) have been able to demonstrate a very significant relationship between degree of mental impairment and counts of argentophil plaques in microscopic brain sections. The origin and composition of these structures as well as of Alzheimer's neurofibrillary changes remain a mystery. Using fluorescence microscopy, Schwartz (1965, where further references will be found) has claimed that the plaques are deposits of amyloid substance, and that identical deposits are demonstrable in other organs of patients with senile dementia, especially in pancreas (island tissue) and heart. He suggests that the pre-senile and senile dementias may be general and not just cerebral disorders, possibly due to autoimmune reactions.

These findings have not as yet been confirmed by other workers, and neuropathological studies have not so far succeeded in giving a sound substructure to the clinical classification of persistent confusional states (or to use the American term, chronic brain syndromes). Without this, more basic scientific studies into the causes of dementia in late life are unlikely to make headway. There is, to begin with, the differentiation between *senile dementia* and *cerebro-arteriosclerotic psychosis*. In Corsellis' (1962) series, 45% of cases were clearly due to cerebro-vascular disease alone; 34% showed changes associated with senile dementia, only; but in 21% of subjects both disease processes had been at work. Roth *et al.* (1967) had excluded all patients with neurological signs or histories of focal brain damage or of cerebro-vascular degeneration. In spite of this they found in sixteen of the seventy-six brains examined small ischaemic lesions. Though the clinical picture of *Alzheimer's presenile dementia* is often quite distinctive (Sjogren, Sjogren & Lindgren, 1952), the condition cannot be pathologically differentiated from senile dementia. Parieto-temporal lobe symptoms, which used to be thought characteristic of Alzheimer's disease, have been demonstrated as late phenomena of the more slowly evolving senile dementias (Ajuriaguerra, Strejilewicz & Tissot, 1963; Albert, 1964). Attention has been drawn by Nevin (1966) to the complex relationship existing between Alzheimer's disease and other forms of presenile dementia.

Hope for a future differentiation of senile dementia from chronic confusional states related to cardio-vascular, pulmonary, and a host of other geriatric conditions, is, however, raised by a number of investigations. Larsson *et al.* (1963) claimed that 'essential' senile dementia was

a heredofamilial disease, that the gene was present in only some 12% of the Swedish population, and that the condition was transmitted independently of Alzheimer's presenile dementia. The significant correlation between plaque counts and a quantification of mental impairment reported by Roth *et al.* (1967) was found to be absent in patients who had exhibited typical pictures of severe and typical senile dementia. This suggested to the investigators that these cases formed a separate group outside any 'normal' distribution and due to as yet unrecognized pathogenic factors. Certain features of the previous personality, especially those broadly classed as obsessional, were unduly often discovered in hospitalized senile demented (Post, 1944; Oakley, 1965).

Psychodynamic factors operating in patients with chronic brain syndromes in their attempts at coping with their difficulties have been demonstrated by a group of American workers (Katz, Neal & Simon, 1961). Other psychological studies (e.g. Williams, 1956) have illuminated ways in which senile patients can be helped to perform at better levels. Psychometrically, the diagnosis of global dementia in old age can be confirmed by failure in learning new material as presented in the form of paired-associate words (Inglis, 1957), or as a new word learning test (e.g. that of Kendrick *et al.*, 1965). These tests permit of quantification of impairment, and may be of help in giving individual prognoses, especially the likelihood of early death in relation to poor scores (Sanderson & Inglis, 1961). Serial testing may also yield measures of progress. However, neither psychological tests, electroencephalography, nor pneumoencephalography have so far been successfully employed to differentiate conditions presenting as persistent confusional states (summarized by Post, 1965).

In view of our ignorance concerning the causation of the various dementing conditions encountered in late life, it is not surprising that no effective *therapies* have so far become established. Continental workers hold that much additional brain damage is caused in the course of dementing processes, whatever their origin, by circulatory inefficiency, and they place great trust in supposedly cardiac stimulants, especially strophanthin (Albert, 1964; Mueller, 1967). There is certainly a strong impression that demented nursed in geriatric medical units live longer than those cared for in mental hospitals, but there have not been any reports to the effect that this longer survival is also associated with slower mental decline. Vitamin therapy, ex-

cept where specifically indicated, has probably had its day, though the aetiological role of B₁₂ deficiency is still under discussion (Strachan & Henderson, 1965; Shulman, 1967; Hunter *et al.*, 1967). Claims to the effect that infusions with ribonucleic acid improved memory functioning in dementing elderly persons (Cameron, Sved & Solyom, 1963) have not so far been confirmed. Reports* that RNA production is stimulated by magnesium pemoline (with subsequent memory improvement) should be viewed with equal caution. The damaged brain is even more sensitive than the ageing brain to deficiencies, toxins, and the accumulation of normally transitional metabolites. Intercurrent physical illness, even of a most trivial kind, is likely to trigger off acute confusional states in chronically confused persons. Meticulous physical care of the dement is thus needed to avoid these disrupting conditions. There is no doubt that simple social and occupational therapy, usually in a day hospital or day centre setting, is often successful in preventing the worst forms of deterioration. However, these measures have to be reinforced continually, as persons with persistent confusional states lack the powers of self-motivation (Cosin *et al.*, 1958).

Conclusions

Within the area of social and administrative medicine, the dementias of old age present an ever-growing problem, which is very far from being solved, but which is perhaps of little interest to readers who wish to inform themselves on recent advances in psychiatry. There is a vast literature relating to matters like the misclassification and faulty disposal of psycho-geriatric patients, their fate following admission to mental hospitals, early recognition and domiciliary care. Attention is drawn to the following relevant and recent publications: Kidd (1962), Connolly, Lumsden & Ross (1964), Herbert & Jacobson (1966), Macmillan (1967), Parnell (1967), Hoenig & Hamilton (1967) and Haider (1967); finally, illuminating the American scene and providing splendid bibliographies, two books by Lowenthal and her associates (1964, 1967).

In theory, the management of psychiatric ill-health in late life looks simple. At the clinical level, differentiation of the various disorders is readily made in the great majority of cases. As has been shown, many conditions respond well to modern methods of treatment, but most require maintenance care. Dementing persons are best looked after in their own homes, where

they remain better orientated and occupied. Early recognition will lead to the timely provision of supportive services, and to treatment by geriatric or psychiatric teams working in co-operation with one another and with the family doctor. When institutional care becomes necessary, this should be tailored to the patient's and his family's needs. Depending on the type of behaviour disorder, it will be either in a medical geriatric unit, in a mental hospital, or in a suitably staffed home provided by the local authority. The same patient is likely to need different kinds of accommodation as his disorder passes from one stage to another.

In practice, neither the nations experiencing increases of their elderly populations, nor their political leaders, have as yet seen fit to allocate adequate proportions of their wealth and of their man-power to the geriatric services. Even under existing conditions, more could probably be achieved by better co-operation between family doctors, geriatricians, psychiatrists, and the welfare authorities (Political and Economic Planning, 1966).

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