So far as the general public is concerned, propaganda could take the form of regular features on television and sound radio, each item driving home one particular point, perhaps drawing attention to a particular accident which had occurred that same day and which had been mentioned in a news bulletin. Displays of safe and non-inflammable fabrics; safe fireguards; well-designed kitchen and tableware; how to deal with burning accidents; first aid—all these topics are ideally suited for television or short films.

Conclusions

The survey carried out in 1955 confirms that the vast majority of domestic burns and scalds are preventable. Their treatment takes an inordinate amount of time and patience on the part of the surgical, nursing, and ancillary staff. The physical and mental distress experienced by the victims, both after the accident and during the many years of reconstructive surgery that may be necessary, cannot be equated in terms of blood or plasma transfused, clinical charts, or photographs.

We pay lip-service far too often to the axiom "Prevention is better than cure." Here is a problem which we know to be largely preventable. Those of us who are constantly seeing the results must take a far more active part in eradicating the causes, even though the remedy is not a new drug or an intricate surgical manoeuvre, but rather an exercise in social medicine in its widest sense.

I would like to thank Mr. Emyln Lewis and Mr. A. L. Schofield for valuable help and criticism; Dr. A. R. Culley, Principal Medical Officer, and Dr. T. T. Baird, of the Welsh Board of Health; all the county medical officers of health in Wales and the medical officers of health for the County Boroughs of Cardiff, Merthyr, Newport, and Swansea for their co-operation with the questionnaire. Dr. Leonard Colebrook and Mrs. Vera Colebrook have given much encouragement and help in the presentation of the findings. I also thank my colleagues Miss R. W. Lawrence for help in collecting information from parents and in preparing the chart; Mr. L. Mincher for photographs; Miss Sheila Newsome and Miss Patricia Beverley-Jones for secretarial assistance.

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Recent research into the intricacies of the auditory and vestibular apparatus is described in a series of well-illustrated articles in the latest *British Medical Bulletin* (Vol. 12, No. 2, May, 1956), published by the British Council at 15s. In the introduction Sir Bryan Matthews, F.R.S., shows how the theory of hearing, still very incomplete, has changed since the days when Helmholtz postulated his theory of the mechanical resonance of fibres in the cochlea. Stimulation by pure tones has shown that the disturbance of the basilar membrane is not highly localized, as expected. Though an analysis such as can be imitated by mechanical resonators does seem to take place, "it is now clear that this is in part due to properties of neurones in the pathway, with complex interaction occurring in the nuclei between the activity of the primary and secondary neurones." Investigations into the workings of the vestibular apparatus are of particular moment to aircraft crews, who may be subjected to combinations of acceleration that the labyrinth is unable to resolve. Consequently, "much training has to be devoted to overcoming the normal reactions in pilots to these abnormal stimuli and to ensure that gyroscopic instruments are believed and the impulses from the labyrinth discounted." Among the dozen or so contributors Dr. C. S. Hallpike, F.R.S., is part-author of four of the articles, Professor Otto Lowenstein contributes two, and Mr. Terence Cawthorne writes on aural surgery.

THE INCIDENCE AND PROGNOSIS OF ENDOGENOUS DEPRESSION

BY

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In the normal individual there is a swing of affect. One feels on top of the world at one time, and at another there is a reduction in vitality and everything becomes an effort. Like so many things in the world of psychiatry, pathological depression is an exaggeration of a physiological process. The depressive feelings are more profound than usual, and they last longer. They may still be so mild as to be passed off as a mood, or the aftermath of some common physical condition such as influenza or sinusitis. On the other hand, they may be so profound as to rank as one of the most exquisite forms of human suffering. Custance (1951), himself a typical manic-depressive, described the passing through the depressed phase as living in a universe of horror. Time drags to prolong the torture, which is made so much worse by the complete subjective absence of hope.

Although melancholia has been known and described since Hippocratic times, its importance has been overshadowed in the past century by the search for precise physical diagnoses. The depressed patient far more frequently presents somatic symptoms than a complaint of depression as such. The headache or the constipation tend to be blamed for causing depression, whereas in fact these physical symptoms are just an expression of the melancholia. The severe type of depression is fairly obvious, but the mild case is often missed.

Depression as a Disease Entity

The importance of depression is to-day being more and more recognized. It was considered worthy of discussion by the Section of Psychiatry at the Annual Meeting of the British Medical Association in 1954. Mayer-Gross (1954) described it as probably the commonest type of complaint in psychiatric patients to-day. Bodkin *et al.* (1953), in a study of psychiatry in general practice, state that, "of the four main types of cases that of depressive reactions looms the largest." From a purely general-practitioner point of view, Craddock (1953) groups endogenous depression with cancer and tuberculosis. He points out that all these diseases start in an insidious manner and are easily overlooked. There is, however, one very important difference. Whereas a missed case of tuberculosis or a growth in the end becomes painfully obvious, so many depressions clear spontaneously that the diagnosis is often never made. Up to now the study of endogenous depression has been largely confined to the severe types of the disorder which are seen by the psychiatrist. This point was stressed by Kraines (1943), who wrote, "Most that is written about this condition is based on studies of patients who have become ill enough to be committed to an institution, and *there is a dearth of information about the vast groups who never enter an institution.*" The italics are mine.

General Practice as a Field for Research into Depressive Disorders

Depression is largely a disease of symptoms. There is no Kahn reaction to prove or disprove its presence, and

there is no rise in temperature or sedimentation rate to reveal its gravity. It must, especially in its milder forms, be diagnosed by a careful analysis of the symptoms present, and the absence of adequate physical causes for them. It can of course be grafted on to a physical disease, a point which is often overlooked. Radiotherapy for cancer of the breast often causes a very marked depression. The very natural reaction to the dread of cancer is blamed, or the action of the x rays themselves. Either or both of these factors can precipitate a true melancholia, which should be treated with electric convulsion therapy (E.C.T.), if a long and painful convalescence is to be avoided.

Endogenous types of depression are as a rule self-limiting in character, although the disease is apt to recur. The general practitioner who is in contact with his patients during most of their lives is therefore in a good position to study such cases, with deepening understanding. The troublesome "neurotic" who suddenly ceases to complain and gets a new lease of good health was probably suffering from a depression which remitted, as it so often does. The recurrence of the disease a few years later may clarify the diagnosis. The general practitioner is in a unique position for knowing the normal state of mind for any given patient. A shy and retiring member of the community who begins to be garrulous at meetings or in the surgery may be showing, by his very modest activity, the same degree of mania as would cause his more flamboyant and noisy neighbour to dance in the street or cause some breach of the peace. A change of mood is more significant than the existing mood, and in general practice this can sometimes be noticed against the natural background, before the patient is aware that observations are being made. A man was seen wandering along a country lane, with his hands deep in his pockets and his shoulders hunched forwards. He looked a picture of misery and dejection, quite unlike his normal self. When he came to the surgery a few days later it was not difficult to uncover an endogenous depression, and he was sent straight into a mental hospital as a voluntary patient. Where better can the genetic background be known and explored than in a reasonably static general practice?

It is felt that in many ways general practice forms an ideal laboratory for the observation and study of depressive disorders. This essay is an attempt to explore two aspects of the disease. (1) The incidence of endogenous depression is evaluated and the severity of such disorders is assessed. (2) The fate of the depressed patient is observed.

With a subject such as depression no claims can be made for complete scientific accuracy. There are too many possible sources of error. The diagnosis may be wrong, the assessor may be biased, and I do not see all the psychiatric cases in the practice. None the less, it is felt that observations on 529 depressed patients over a 10-year period may be of some significance.

Nature of the Practice

The clinical material of 529 cases has been collected over 10 years (1946-55 inclusive) in a semi-rural practice. The number of patients at risk was about 8,000, and they were cared for by three doctors working in partnership. I see most of the psychiatric cases, but not all of them.

The community consists of a large village with a population of about 5,200, in which the partners work virtually unopposed. There are many outlying villages where the responsibility for the medical care is shared with other doctors. The community is made up of comparatively prosperous working-class people. The predominant industry is coal-mining, but there is a wide choice of occupations—brickyards, boot and shoe factories, light engineering, farming, and small business. Apart from the universal shortage of houses, the population is well supplied with most of the amenities of life. Most houses have gardens, many of the villagers keep hens, and some keep a pig. Fuel in a coal-mining area is more readily available than in other areas, and wood can be bought or collected locally. Entertainment in the form of the theatre, the cinema, the dogs,

or the dirt track is available in the near-by towns, but the village has a healthy number of its own clubs and societies, including a flourishing Old People's Welfare Association. Unemployment is negligible and has never been severe in these parts. The population of the practice is relatively static. Many of the names of the villagers to-day can be found in the church registers of the seventeenth century. Taking all in all, the practice has many advantages for long-term observation.

Types and Incidence of Depressive Disorders

Depressions are usually divided into exogenous and endogenous types.

Exogenous, or Reactive, Depression.—This is environmental in origin, and the psychic trauma is superficial in character. The condition can usually be relieved by psychotherapy.

Endogenous Depression or Melancholia.—This is not as a rule precipitated by unfavourable circumstances. It comes as it were "out of the blue." It is an illogical depression due to a number of aetiological agents, such as hormonal imbalance, infections such as influenza or sinusitis, or deeply subconscious psychic trauma. Often no cause for the symptoms is found. This type of depression is inaccessible to psychotherapy, but it usually responds well to electric convulsion therapy. There are a number of minor variants of this type of depression.

Reactive-endogenous Depression, or Reactive Melancholia.—While the majority of depressions can be separated into either endogenous or exogenous types, there remain a small number of depressions which, while clearly due to environmental stress, are endogenous in character, and E.C.T. is sometimes needed to break up the depression. Psychotherapy does not help them. In the aged, most depressions assume the illogical inaccessible characteristics of melancholia. Disregarding the aged, 16 cases in this series were clearly reactive in origin but endogenous in character. Details of these cases are given in Table I. The effect of

TABLE I

Case No.	Age	Sex	Precipitating Problem	Treatment	Result
51	21	M	Jealousy in imbecile over new baby	C, S	R
68	26	F	Deserted by husband	VP, ECT	R
177	45	F	Radiotherapy for cancer of breast	RT	MI
223	52	M	Wife in hospital	S	R
228	70	M	Quarrel with business partner	S	MI
260	50	F	Death of son	S	IO
269	35	F	Hospitalized. First time from home	VP, ECT	R
272	60	M	Death of wife	VP, ECT, D	IO
273	31	F	" " child	OP, ECT	R
279	58	F	" " husband	OP, ECT, D	Chron
282	40	F	Housing problem	VP, D, GH	R
292	27	F	Death of husband	C, ECT	MI
294	73	M	Wife's illness	C, ECT	DID
300	38	F	Housing problem	GH	R
305	43	M	Death of wife	VP, ECT	Chron
307	41	F	" " mother	S	R

C=Certified patient. VP=Voluntary patient. RT=Refused treatment. D=Defaulted treatment. S=Symptomatic treatment. ECT=Electric convulsion therapy. GH=Got a house. R=Recovered. MI=Much improved. IO=Improved only. DID=Died in depression. Chron.=Deteriorated.

severe mental trauma is unpredictable. In Case 292 a woman of 27 with four children lost her husband in a mining accident. She went into a profound depression, and in the end had to be certified. In Case 36 a woman of 42, who lost her husband in the same way, had already in the previous five years had two severe depressive episodes requiring E.C.T. in hospital. Her bereavement did not precipitate a new depression of any note. In Case 300 a childless married woman of 38 who wanted a house was so depressed that the psychiatrist advised E.C.T. as well as the house. However, the new house alone raised the depression, and she has kept well ever since she moved in over two years ago. In Case 223 a man of 52 became depressed while his wife was in hospital. His symptoms cleared with her return

home. In Case 294 a man went profoundly depressed when his way of life was threatened by his wife's illness. Her recovery made no difference to his symptoms, and he died of his depression in spite of E.C.T. This variant is not common, amounting to 4.6% of all the endogenous depressions.

Schizoid Depressions.—This is a small but interesting group of depressions. The condition is very likely to recur, and if the patient is seen in an attack may well be labelled schizophrasia on account of the symptoms. The attacks are, however, more like an endogenous depression, in that they pass over, leaving behind no evidence of deterioration. Four such cases, all females, were seen in this series. In these patients the average number of attacks was 4.5 per patient, and all have been hospitalized at one time or another because of their psychoses. Two were typical manic-depressive types of personality and two were schizoid. One of the latter is prone to hypomania after an attack of depression. Sometimes the condition remits on its own after a few weeks, but at times E.C.T. is necessary to break it up. Cases such as these were described by Thomas (1954).

Post-Puerperal Depression.—In 1955 Hegarty described cases of post-*puerperal* depression. This type of endogenous depression can be traced back to childbirth, after which the patient remains in a state of chronic depression. The condition is very mild, and for that reason is often overlooked. This type of patient is rarely ill enough to be passed on to a psychiatrist, and they all seem to respond well to amphetamine preparations. Looking back over the nine years before Hegarty's paper was written, we see that seven cases in this series fitted into this category. Since his paper raised the issue no fewer than four more cases have been collected in a matter of eight months. All made a good response to amphetamine and supportive treatment. One patient needed the drug for only a week and the clouds cleared. For the previous seven weeks from the birth of her child she had been tearful and depressed. As Hegarty suggests, the condition is much more common than is appreciated. By way of comparison, what used to be called *puerperal* insanity is a comparatively rare disease. Only two cases were seen over the 10-year period. One was a severe depression and the other a case of mania. Both patients had to be certified, but in the end made a good recovery.

Manic-depressive Disorders of Childhood.—Some 177 children were seen with behaviour disorders during the 10 years under review. Only three of them (not included in this series) had the predominant symptom of depression, and this could always be adequately accounted for in terms of environmental stress. Case 321 was a boy of 15 who committed suicide, and he possibly had an endogenous depression. Apart from this patient, no case of childhood manic-depressive illness as described by Campbell (1955) was seen.

Patients suffering from depressive symptoms for a few days before or after the menses were not included in this series.

Manic Cases.—These are not included in this series unless there was a depressive phase; but for the sake of completeness their numbers are given. In 10 years there were 10 acute manic episodes in four patients, and there were two cases of chronic mania. Six depressive patients showed at one stage evidence of mania, but the phase of elation is a comparatively rare condition.

Summary of Types Seen

Endogenous depression or melancholia	316
Variants:	
Reactive endogenous depression	16
Schizoid depression	4
Post- <i>puerperal</i> depression	11
Recurrent attacks of melancholia	40
Total number of endogenous depressive episodes ..	387
Exogenous, or reactive, depression	182
Total number of depressive episodes	569
" " " patients involved	529

Endogenous Depression

True melancholia is the subject under discussion in this paper. Cases of reactive depression are recorded for statistical purposes, but no attempt is made to enlarge upon that aspect of depression. If 40 recurrent attacks are included the 529 patients observed provided 569 depressive episodes, 68% of which were endogenous. These can be divided into three categories according to their severity. (1) Mild depressions which as a rule can safely be handled by the general practitioner: they are rarely seen by the psychiatrist. There were 230 of these cases (59%). (2) Patients with moderate depression, who usually need E.C.T. These cases were, so far as possible, passed on to the psychiatrist for an opinion, and E.C.T. if necessary was given, often in the out-patient department. There were 92 of these cases (24%). (3) Severe cases amounted to 65, and they were nearly all referred to hospital for treatment (17%).

The whole series contains six cases of suicide. Three of these patients were known depressives, but it was not realized how suicidal they were. Three had not seen their doctor; and, of these, two were on retrospective evidence endogenous depressives. The youth of 15 already mentioned had no overt evidence of depression. During the time of the survey two other cases of suicide were seen by the other partners, and there were eight cases of attempted suicide in the series.

The number of depressive disorders collected year by year is shown in Table II. From the figures it can be seen that depressive disorders amount to 36% of all the new psychiatric cases seen in general practice: 24% are

TABLE II

Year	Endogenous Depressions							Reactive Depressions			Total Depressions	Total of Psychiatric Cases	Percentage of Depressions
	Mild		Mod.		Severe		Total	M	F	Total			
	M	F	M	F	M	F							
1946	4	14	5	5	1	3	32	6	6	12	44		
1947	17	10	4	7	5	7	50	3	12	15	65		
1948	18	19	2	7	2	6	54	6	11	17	71	214	33
1949	9	22	4	11	4	3	53	8	13	21	74	165	45
1950	10	23	1	3	2	2	41	11	20	31	71	199	36
1951	13	7	2	5	0	4	31	4	20	24	55	169	33
1952	5	7	7	2	2	3	26	3	6	9	35	105	33
1953	5	7	2	6	4	5	29	5	13	18	47	122	38
1954	8	9	6	2	4	4	33	1	10	11	44	118	37
1955	9	14	4	7	1	3	38	2	22	24	63	178	35
Total	98	132	37	55	25	40	387	49	133	182	569	Aver. 159	Aver. 36

endogenous in character, and 12% are reactive depressions. This total of 36% falls into line with the figures of other workers. Fry (1954) found, in a survey over a year, that 31% of his psychiatric problems were depressive. Leigh (1955) found 34% of 1,000 domiciliary consultations were for depressive reactions.

Two points of importance arise from these figures. First, some estimate of the incidence of endogenous depression can be made. On average, 38.7 cases of the disease are seen in a year. With a total of 8,000 patients at risk this means that a *minimum* of about five new patients for every 1,000 at risk suffer from an endogenous depression in any one year. This is an underestimate. I do not see all the psychiatric cases in the practice, and it is quite certain that a large number of patients with depression never report to a doctor at all. This point is illustrated by the fact that only three of the six suicide cases were under medical care at the time of death and known to be cases of depression. In discussions of the matter with colleagues and intelligent laymen it is not uncommon to find people who have gone through weeks or months of depression without ever reporting their feelings to a doctor. "For weeks I viewed suicide in quite a different light," said one man. A country practitioner described his feelings as follows. "The glory of the countryside just disappears. Everything looks drab, colourless, and meaningless until the clouds have lifted."

The second point is that well over half (59%) of patients suffering from endogenous depression have it in such a mild

form that they are not likely to be referred to a psychiatrist. Of the moderately severe cases, 40 were referred to a psychiatrist and a further 13 refused to see one. Nineteen of the patients were over 60, and some of them were very old. For one reason or another less than half of the moderately ill cases saw a psychiatrist. Indeed, of the whole series of 387 endogenous depressive episodes, only 27% of the cases were referred to the consultant. I probably refer many more cases to the specialist than the average doctor, and from this it can be inferred that the specialist psychiatrist does not see more than one-quarter of all the cases of melancholia, if indeed he sees that proportion. Three-quarters of the cases are, in one way or another, dealt with by general practitioners. It can be said that endogenous depression is essentially a disease of general practice.

Age and Sex Incidence

Depression in all forms is more common among women than among men. This is clearly shown in Figs. 1 and 2.

FIG. 1.—Age and sex incidence of reactive depression.

FIG. 2.—Age and sex incidence of endogenous depression.

In endogenous depression there were three women to every two men, and in reactive depression three women to every one man. Reactive depression in men showed little variation with each decade. In women it is common up to the age of 45 and then the incidence drops. The incidence of endogenous depression is similar for both males and females, reaching a peak for both sexes in the 45-50 years. The peak for women was much more prominent. Endogenous depression is more common in elderly males than in elderly females. This is borne out by the fact that the suicide rate in old men is much higher than that in women. In the over-60 age group there were 47 males and 38 females. This is the only period in which the incidence of male depression exceeded that of females. The youngest patient with endogenous depression was 21,* and the oldest were 83 in the male and 88 in the female. Both the latter were mild cases and made a good recovery.

Recurrent Attacks

At the end of an eight-year survey there had been 25 recurrent attacks. In the following two years this rose to 40. It will be interesting to see if the rise in the recurrence rate is maintained in the years to come. The distribution of the attacks is shown in Table III.

*The boy of 15 who committed suicide was the youngest case in the series, but in retrospect he had shown no evidence of depression.

TABLE III

No. of Recurrent Attacks	Male	Female	Total No. of Attacks
1	17	8	25
2	1	4	10
3	0	0	0
4	0	0	0
5	0	1	5
Totals	18	13	40

Fate of the Depressed Patient

A follow-up of the cases of endogenous depression was made by direct contact with the patient or the relations, or the National Health Service card was inspected. In this way patients were divided into groups (Table IV).

Satisfactory.—These included patients who were considered to have recovered or to be much improved. Inspection of the patients' cards showed no persistence of depressive symptoms and no tendency to hypochondriasis.

In Statu Quo.—These included patients who, while less depressed and inconvenienced than when first seen, have remained constant surgery attenders with vague complaints. It also includes three patients who are still much as they were at the end of 1955.

Deteriorated.—This section consists of all the patients who have, after a depressive illness, sunk into a state of chronic hypochondriasis. The men are usually quite unemployable, but the women do manage to do some of the housework. They are full of complaints and often depressed. Often they are addicts to some hypnotic, as many of them cannot sleep without drugs. The six suicides are included in this group, as are those who died in depression. There were 19 of these cases, 10 males and 9 females all over 60, the average age being 72.5 years.

Untraced.—This group consisted of 19 patients whose fate is not known.

TABLE IV

	Mild			Moderate			Severe			Grand Total
	M	F	Total	M	F	Total	M	F	Total	
Satisfactory ..	82	105	187	25	31	56	8	31	39	282
% ..	88	86	87	71	57	63	33	77	61	77
In statu quo ..	6	10	16	1	7	8	5	5	10	34
% ..	6	8	7	3	13	9	21	12	16	9
Deteriorated ..	5	7	12	9	16	25	11	4	15	52
% ..	6	6	6	26	30	28	46	11	23	14
Untraced ..	5	10	15	2	1	3	1	0	1	19
Total ..	98	132	230	37	55	92	25	40	65	387

The percentages are for the traced cases.

From Table IV it can be seen that, taking this series as a whole, 77% of endogenous depressions make a good recovery and 14% become deteriorated. The factors responsible for chronicity are worthy of further consideration.

In schizophrenia the mild insidious case has a worse prognosis than the acute and violent patient. In the latter type treatment is instituted early, whereas in the simple case it may be overlooked for months or years. In endogenous depression the mild case, with an 87% recovery rate and only 6% of deterioration, has a better prognosis than the severe case. Only 61% of these recover, whereas 23% deteriorate. On the other hand, the moderate type of case carries a higher rate of deterioration (28%) than either the mild or the severe cases. As in schizophrenia, this may be due either to inadequate treatment or to bad timing of the treatment. Mild depressions usually clear up on their own, without much trouble. The severe case is so ill that heroic treatment is demanded from the outset, and nearly all such cases find their way quickly into the mental hospital, where they receive proper treatment. The patient with moderate depression tends to feel that he is not ill enough to go to hospital, and he refuses to have physical treatment. He is not psychotic enough to be certified, and so treatment is often evaded. This is not the whole answer.

Of the 17 patients in this group who were persuaded to have E.C.T., only 10—that is, 59%—made a satisfactory

recovery. Obviously a series of 17 is too small to be statistically of any value. Perhaps there is a right time and a wrong time at which to give E.C.T. It certainly does not always work satisfactorily. In this part of the world it was 1949 before out-patient E.C.T. was available. One case was so treated in that year. Since 1952 10 cases have had E.C.T. as out-patients. The results are on the whole disappointing, a good response being obtained only in 5 out of the 11 patients. The patient who is reluctant to accept E.C.T., who has to be urged and persuaded to go and have the treatment, rarely does well; in fact, she rarely completes the course. The patient must go willingly, or at least without resistance, if the best results are to be obtained. One excellent result was obtained in a woman of 31, who said afterwards, "I never thought the treatment would help—but I was prepared to follow your advice." This series of 11 cases is too small to be significant, but it does indicate that pressing a button in the out-patient department is not the complete answer to the treatment of depression, a conclusion I reached with some reluctance.

The percentage of deteriorated patients in the mild and moderate groups is about equal in the two sexes. In the severe group there is a very marked difference: 42% of males deteriorate, as compared with 11% of females.

Age as well as severity is an important factor in the prognosis: the age of 60 was taken arbitrarily as the onset of senescence.

The different recovery rates between those under and those over 60 is shown in Table V. In round figures this implies that the recovery rate of mild depression in those under 60

TABLE V

	Mild		Moderate		Severe		Total	
	Over 60	Under 60	Over 60	Under 60	Over 60	Under 60	Over 60	Under 60
Satisfactory ..	31	165	8	39	6	30	45	234
% ..	69	88	39	63	38	77	59	81
<i>In statu quo</i> ..	3	14	0	7	2	4	5	25
% ..	7	8	0	11	12	10	4	9
Deteriorated ..	11	7	10	16	8	5	29	28
% ..	24	4	61	26	50	13	37	10

is almost 90%, as opposed to 70% in the older group. The recovery rate in severe depression is still nearly 80% in the under-sixties and only 40% in the older group. The recovery rate of about 60% for all types of depression in the aged is comparable to the figures of E. P. Charlton (personal communication), who stated that 60% of patients with senile depression could be discharged as recovered or improved from a mental hospital.

No fewer than 19 patients in the over-60 group died in depression. In 12 of these the depression was secondary to some physical disease such as chronic bronchitis or cerebral arteriosclerosis. In seven of them the psychosis was the predominant feature of the illness, and death was hastened and attributable to the depression. Almost as many die of depression as from suicide. The Registrar-General's figures for suicide over nine of the 10 years under review shows an average annual suicide rate of 106 per million of living population. In this practice with 8,000 patients at risk there were eight suicides over 10 years—six in this series and two seen by the other partners. This amounts to 100 per million living, a figure comparable to that for the country as a whole. Deaths attributable to the manic-depressive psychosis are only an average of 2 per million living. According to the figures in this survey this figure should be about 88 per million living. The reason for this difference is that depression as a cause of death is largely unrecognized. The end-result from a senile depression can be a patient who looks quite cachectic, and anything else possible is blamed for his condition except the depression.

A retired police sergeant of 73, who was a man of cheerful and sociable disposition, attended the surgery during the winter

of 1951-2 with chronic bronchitis. His visits ceased in March, 1952, and he was not treated again until August of that year. He was then seen in a stupor and so ill, pale, and cachectic that he was sent straight into a general hospital. He looked so emaciated that it was thought that he had a carcinoma, although there was no gross evidence of this. On admission he had been given several pints of blood by transfusion and drip feeds until, much to everyone's surprise, he recovered from his stupor. When strong enough he was fully investigated physically, and no cause for his trouble was found. A psychiatrist was never consulted. In October he was returned home from the hospital much improved. A careful history was taken on his return home. This revealed an amnesia covering his last few days at home and the first weeks in hospital. He felt he had been going off for at least two years. He lost interest in things and began to shun company. In his view the cause of his trouble was a large scrotal hernia which he had had for years. This prevented him from working like other people. He felt guilty about it, as he should have had it fixed up in his youth. This illogical explanation for symptoms is typical of depression. He had felt depressed and miserable, and, while he denied any wish to be dead, he had been sure the end was near. He could not eat, and his sleep had become very fitful and broken. He was prone to unpleasant dreams of sordid police affairs he had been mixed up with years before. His recovery was short-lived. Gradually he sank back into a second stupor, from which he died; but the history he had given was typical of a senile depression, and there was never any evidence of gross physical disease.

A severe depression in an old person is a serious illness with a bad prognosis. The place of E.C.T. in the treatment of such cases is worthy of a special study. On the whole there is a great reluctance to send such cases to a mental hospital for treatment in the early stages of disease, and when they ultimately do gain admission they are too far gone mentally and physically to be helped by physical treatment. On the other hand, mild depressions in the aged are not so serious. Even at the age of 88, clouds of depression have been known to give way to mellow contentment.

Of the whole series some 14% deteriorated: those who do not die in depression or commit suicide become chronic depressed hypochondriacs (8.7%). These are some of the most trying types of patient to be found in general practice, not only for the doctor who sees them at intervals but for the family unit as a whole, which has to live with them all the time.

Few patients with chronic depression keep away from the doctor's surgery for very long, so that nearly all the bad results of depression are known. In this series this amounts to about 14%. If, however, the incidence of depression is indeed higher than the figure of 5 per 1,000 new cases a year, then of course the incidence of the chronic states will be correspondingly lower.

Summary

Endogenous depression is a condition that is often overlooked.

The suitability of general practice for the observation of such cases is stressed.

Minor variants of endogenous depression are described.

Cases were divided into mild, moderate, and severe. Not more than one-quarter of the cases are seen by a psychiatrist. Endogenous depression is essentially a disease of general practice.

Of all new psychiatric cases seen in general practice, 36% were depressive. About two-thirds of such cases were endogenous depressions.

At least five new cases of endogenous depression occur each year in every 1,000 patients at risk.

The sex and age incidence is shown. Depression is much more common among women than men, except in senility.

Some 14% of all patients with depression end in a chronic state, die in depression, or commit suicide. The

prognosis is worse in severe depressions than in mild. It is poor among the aged when it is severe, especially among men.

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CASE OF HYPOPHYSECTOMY COMA WITH SERIAL ELECTROENCEPHALOGRAPHY

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Sheehan and Summers (1952) have emphasized that, although the clinical picture in cases of hypophyseal coma may be relatively uniform, the underlying acute metabolic disturbances may vary from case to case. The patient described in this report suffered two distinct episodes of coma of different origin. The E.E.G. results were recorded while in coma and later, after recovery.

Case Report

The patient, a woman aged 56, was admitted on a cold winter's day (February 10, 1955). After a severe post-partum haemorrhage at the birth of her only baby, 27 years previously, she was unable to breast-feed him and developed complete amenorrhoea a year later. She was pale and had complained bitterly of the cold for years, spending most of her time by the fire. Prior to admission she had suffered two "giddy turns," the second of which sent her to bed.

Examination revealed a woman of average build lying quite still on the bed, with all joints flexed tightly. The skin was cold, unpigmented, smooth, and glossy. Axillary hair was absent; pubic hair, eyebrows, and frontal hair were sparse. The generalized spasticity made it impossible to straighten the limbs. Occasionally she followed moving objects with the eyes, but did not speak; the plantar responses were flexor. The respiratory rate was 10 a minute; B.P., 170/130; pulse 48; rectal temperature 87° F. (30.6° C.); blood sugar, 35 mg./100 ml.; serum sodium, 120 mEq/l. (276 mg./100 ml.); serum potassium, 4.1 mEq/l. (16 mg./100 ml.).

In the next 12 hours the two gross abnormalities (temperature and blood sugar) were varied, separately and directly. After applying warmth for 10 hours the rectal temperature was 92.3° F. (33.5° C.), but the general condition had deteriorated into coma. The plantar responses were now extensor, and the blood sugar was 27 mg./100 ml. After 2.5 g. of glucose had been given intravenously she moved immediately, and improved sufficiently in six hours to answer simple questions.

On the next day she was taken to another hospital, three miles distant, for an electroencephalogram, and, although every precaution was taken to keep her warm during the journey, she relapsed into coma and again became spastic; rectal temperature 95° F. (35° C.); blood sugar, 37 mg./100 ml.; serum sodium, 120 mEq/l. (278 mg./100 ml.). No gross water retention was noted, the urinary output being 480 ml. in the 24-hour period, February 10-11,

against an intake of 600 ml. The E.E.G. (Fig. 1) showed only continuous high-voltage slow waves (2-3 c./sec.) in all areas of the cortex.

On return to the ward she responded to heating and glucose by a Ryle tube. A number of investigations were made: Hb, 13.3 g./100 ml.; W.B.C., 5,700/c.mm., differential count normal; Westergren E.S.R., 30 mm.; blood urea, 24 mg./100 ml.; serum cholesterol, 364 mg./100 ml.; blood W.R. and Kahn, negative; urine normal; urinary 17-ketosteroids, 1.7 mg./24 hours; increased insulin sensitivity; chest and skull x-ray films normal.

A second E.E.G. (Fig. 2) was taken on February 16, when her general condition was good and she was taking a light diet. The spasticity had completely disappeared. Her reaction time in conversation was obviously greater than normal, and her voice "trailed off" towards the end of each sentence. Blood sugar, 83 mg./100 ml.; serum sodium, 120 mEq/l. (276 mg./100 ml.); serum potassium, 5 mEq/l. (19.5 mg./100 ml.); intake, 630 ml.; urinary output, 750 ml./24 hours, February 15-16. The E.E.G. showed that the high-voltage activity had disappeared, and low-voltage waves (5 c./sec.), tending to be rhythmic, had appeared in the occipital region; these responded to visual stimulation.

A Kepler test was performed on February 21, but only 23% of the given water was excreted in four hours, and after repeated retching she became drowsy, confused mentally, and drifted once again into coma; a weight gain of 0.9 kg. was recorded. The blood sugar fell to 37 mg./100 ml., and, although intravenous glucose restored it to a normal level (92 mg./100 ml.), no change in her condition occurred and she remained in deep coma. Hypothermia was absent throughout. Water retention was diagnosed and cortisone given (25 mg. six-hourly, intramuscularly). After 48 hours a diuresis of 800 ml. (in the 24-hour period February 23-24) heralded a return to consciousness.

Subsequently, daily maintenance doses of 25 mg. of cortisone, 65 mg. of thyroid, and 25 mg. of methyltestosterone were given. On March 10 her general condition was better than at any previous time: her appetite was good and she was ambulant and taking an interest in everything. Her voice had improved. Blood sugar, 103 mg./100 ml.; serum sodium, 128 mEq/l. (295 mg./100 ml.); serum potassium 5.7 mEq/l. (22.5 mg./100 ml.). An E.E.G. (Fig. 3) now showed a return of irregular high-voltage slow waves (3-5 c./sec.) in all leads, slowed further still by hyperventilation.

The patient was seen regularly on discharge from hospital, and the dose of thyroid was increased to 100 mg. daily. It was not, however, until September 12 that a normal E.E.G. was recorded (Fig. 4).

Comment

Some cases of hypopituitarism are first diagnosed when in coma, and coma may develop in known cases. The difficulty in treating these cases is not that of diagnosing pituitary insufficiency, but rather in deciding what acute biochemical changes have occurred in patients who have been living in a state of endocrine deficiency for many years (Whittaker and Whitehead, 1954; Wynn and Garrod, 1955).

Hypoglycaemia as a cause of coma is described in most medical textbooks and in papers on the subject (Sheehan and Summers, 1949). Some cases respond to glucose immediately; many do not. Failure to respond may be due to changes secondary to hypoglycaemia by analogy with hyperinsulinism (Bloom and Wolff, 1955) or to a concomitant but less obvious change which is overlooked. Hypoglycaemia was recorded in both episodes of coma in our patient; in the first instance a response to glucose occurred after hypothermia had been corrected; in the second instance none occurred—water retention was present.

Hypothermia as a cause of coma was described by Sheehan and Summers (1952). Very low temperatures down