auditory hallucinations in which the voices discussed him between themselves. He suffered a severe defect state, and had been seen in life by one of us (G.J.).

Post mortem examination confirmed fresh-water drowning as the cause of death, and revealed moderate portal cirrhosis compatible with his daily drinking over the last 15 years. His brain was larger than normal weight 1700 gm but with no morphological abnormality. Histological study of his corpus callosum showed mild non-specific degeneration changes with some loss of myelin, glial proliferation and foci of amyloid bodies. Other areas of the brain showed general degenerative changes.

A 57-year-old man died of myocardial and pulmonary infarction having been admitted twice to Whitchurch Hospital in 1950, and been treated by modified insulin therapy. He believed wrongly that the neighbours were giving him a germ poison, and that he could hear them talking about him, and plotting to kill him. He was described as solitary, withdrawn, and fatuous, grimacing and chuckling in reply to hallucinatory experiences. He did not improve on therapy, and left hospital in a marked defect state to be cared for by relatives.

His brain showed slight cortical atrophy, the leptomeninges at the base were slightly thickened and the internal carotid and middle cerebral arteries showed marked atheroma. The histology of the brain showed subendothelial hyaline degeneration compatible with hypertension. The corpus callosum showed patchy fibre loss, with frequent amyloid bodies and astrocytes. Similar changes were observed in some other parts of the brain.

While these changes are patchy and non-specific, the fibre loss would impair the conduction of nervous impulses across the corpus callosum. The second patient is noteworthy as he had never received phenothiazines. Clearly, further work needs to be done in this area.

G. H. JONES

Department of Psychological Medicine, Whitchurch Hospital, Cardiff

J. J. MILLER

MRC Institute of Hearing Research, University Hospital of Wales, Heath Park, Cardiff

E. E. PAYNE

Senior Lecturer in Pathology, Institute of Pathology, Royal Infirmary, Cardiff CF2 1SZ

PROLACTIN RESPONSE TO NEUROLEPTIC CHALLENGE

DEAR SIR,

We were interested to read that Kolakowska and her colleagues (*Journal*, November, 1981, **139**, 400–4) found that chronic neuroleptic treatment did not abolish the prolactin response to haloperidol in patients with schizophrenia. In contrast, we have found that routine treatment with haloperidol completely abolished the prolactin response to further haloperidol injection in two hypomanic patients. Before treatment both patients showed a normal response to intravenous injection of haloperidol (open circles in figure). After one and three weeks of treatment with haloperidol, however, the baseline prolactin concentrations were raised to such an extent that the test dose of haloperidol produced no further increment in prolactin levels, (closed circles and triangles in figure). Presumably then, in our patients, pituitary dopamine receptors were maximally blocked after one week of treatment with haloperidol; at this time little reduction was found in the patients' scores on rating scales for measuring manic symptomatology.

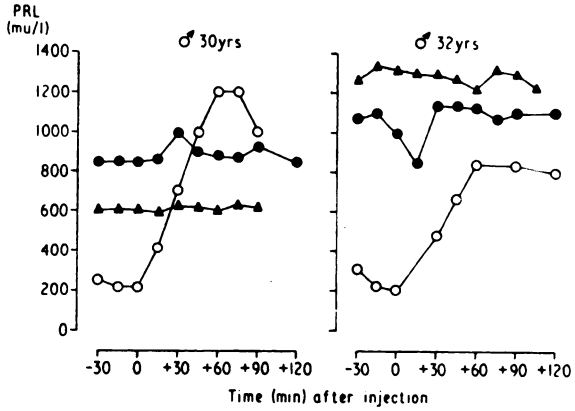

FIG.—Plasma prolactin concentrations after the injection of haloperidol (1.0 mg i.v.) at time 0 in patients with hypomania studied in a drug free state (○———○) and after one (●———●) and three (▲———) weeks of treatment with haloperidol (10–40 mg/day given orally).

In our two hypomanic patients therefore, maximal dopamine blockade in the pituitary preceded clinical response. Similarly resting prolactin concentrations have been shown to reach a maximal level in patients with acute schizophrenia well before they respond clinically to treatment with flupenthixol (Cotes *et al*, 1978).

Kolakowska's paper does not establish that her patients had responded to neuroleptic treatment at a time when they demonstrated only partial blockade of pituitary dopamine receptors: we therefore question her unconventional view that "the degree of dopamine receptor blockade required for therapeutic effect is below that which produces a maximal prolactin

response". Another possible explanation of her findings is that pharmacokinetic factors were responsible for the failure of chronic neuroleptic treatment to produce either a clinical response or maximal prolactin elevation in many of her patients.

ERIC SHUR
STUART CHECKLEY

Maudsley Hospital,
Denmark Hill, London SE5

References

COTES, P., CROW, T. J., JOHNSTONE, E. C., BARTLETT, W. & BOURNE, R. C. (1978) Neuroendocrine changes in acute schizophrenia as a function of clinical state and neuroleptic medication. *Psychological Medicine*, **8**, 657–65.

CAPGRAS SYNDROME IN A 14-YEAR-OLD

DEAR SIR,

A mildly mentally handicapped girl was admitted to this unit in September 1981 suffering from a psychosis, with auditory hallucinations and paranoid ideas. Her affect was depressed and she was overactive and aggressive, with flight of ideas. Her eating and sleeping patterns were disturbed. She was treated with Haldol, Melleril and Cogentin.

One morning in October shortly after her fourteenth birthday she said it was not her mother that had visited her the previous day. It had been a man in disguise, because although this person had been wearing a skirt, the hair was a wig. She had noticed this when she looked at the collar edge of the hair. Also this person drove much faster than her mother—like a man, in fact. This idea subsided within a few days but she remained frightened, and felt that people in cars were watching her. Her psychosis resolved and her mother took her home in November 1981.

A search of the recent literature has not revealed the Capgras syndrome in one so young.

ANN SCHOFIELD
DAVID BRODERICK

Southern Health Board,
Young People's Unit,
Sarsfieldscourt, PO Box 81, Cork

THYROTOXICOSIS PRESENTING AS DEPRESSION

DEAR SIR,

We would like to call attention to a case in which a 23-year-old woman was admitted to our unit following an amitriptyline overdose. She had been prescribed amitriptyline and chlordiazepoxide two weeks before, at a psychiatric clinic where she presented with depressed mood, insomnia, early morning awakening, a 5 kg weight loss, and 'edginess'. Following drug therapy, tearfulness, decreased productivity, and poor concentration ensued and she attempted suicide.

On evaluation following the overdose, she complained of tremulousness, palpitations, and flushing. She gave no past history of psychiatric or medical illness. Physical examination revealed a thin (40 kg) female with tachycardia, mild tremor and the absence of thyromegaly or eye signs. On mental status exam she was sad and tearful with psychomotor retardation and depressed mood. Memory and cognitive functions were intact. Laboratory results indicated elevated thyroid function.

Endocrine consultation was arranged and Graves' disease confirmed. A treatment plan including propylthiouracil, propranolol and radioactive Iodine was followed. Depressive symptoms resolved and follow-up at six months revealed euthymia, normal weight and return to work.

Thyrotoxicosis uncommonly presents with depressive symptoms. Apathetic hyperthyroidism as described by Lahey presents with symptoms of depression, apathy, and intellectual stupor (Lahey, 1931). These 'thyroid melancholics' are generally older, appear ill with weight loss and do not demonstrate the usual signs and symptoms of Graves' disease (Taylor, 1975; Thomas *et al*, 1970). Our patient was only 23 and her deterioration after initial treatment with psychotropic agents serves as a warning that tricyclic antidepressants may exacerbate psychiatric symptoms accompanying hyperthyroidism. She not only did not respond, but noted diminished concentration, palpitations, and worsened depression-anxiety culminating in a suicide attempt. We speculated that her increased levels of thyroid hormone may have made her more sensitive to the anticholinergic and adrenergic effects of amitriptyline. This would be consistent with Whybrow and Prange's hypothesis of thyroid-catecholamine receptor interaction (Whybrow and Prange, 1981). In addition, other signs of thyrotoxicosis developed and persisted until antithyroid treatment took effect.

Initial attention to review of systems and avoidance of one-system dominance would have led to a correct differential diagnosis. The danger of erroneous diagnosis and placement on psychotropic medications is a reminder of the possible associations between depression and thyrotoxicosis, and its responsiveness to antithyroid treatment.

DAVID G. FOLKS
WILLIAM M. PETRIE

Department of Psychiatry,
Vanderbilt University,
Nashville, Tennessee 37232,
USA