in this country is extremely high, and that 10 per cent of patients in our hospitals are afflicted therewith; and when we consider the untold misery and suffering by the affected individual and the family and the community of which he is a member, and the incalculable economic loss to industry and commerce wrought by the presence in our society of untreated and uncared for individuals, then we are obliged to herald the present effort of the South African National Council on Mental Health to combat the problem as something which is very timely.

With a view to organizing the necessary machinery to deal with the diverse aspects of the problem—medical, social, occupational, educational, and economic—the National Council has recently created a Division on Epilepsy under the chairmanship of Dr. H. Moross, the Medical Superintendent of Tara Hospital, Johannesburg, and it has at the same time requested its constituent societies to appoint sub-committees to assist the Division in its exploratory work.

The Division on Epilepsy is composed of persons who represent a significant cross-section of South African public life, and their willingness to serve in the face of the many calls on their time must be regarded as an indication of their awareness of a problem which, if neglected, may spell disaster for the country.

At a meeting of the Division held in April this year a number of ad hoc sub-committees were elected to explore the diverse aspects of the problem referred to. Much is expected from their findings, and since these in the course of time will be implemented by the Division, the public will have reason to anticipate a mode of attack on the problem which will be both scientific and exhaustive. A great deal, however, will depend upon the cooperation of the public and the press by which it is served.

The first task confronting the Council will obviously consist of enlightening the public as to the nature and incidence of the disorder, and in removing from the public consciousness the unwarranted stigma which has long remained attached thereto. That the stigma is born of utter ignorance goes without saying. Epilepsy is as old as history itself, and there are references to the condition in the Holy Writ. The word 'epilepsy' is derived from the Greek word meaning 'seizure', and a seizure is the most recognizable way in which the disorder shows itself. A seizure is a temporary loss or impairment of consciousness, usually occurring without apparent cause, and sometimes accompanied by mild or violent muscular movements which may affect a part of or the entire body. The condition affects people in all walks of life—the exalted as well as the humble. Some great historical figures are said to have been afflicted with the disorder, among them Julius Caesar, Alfred the Great, Lord Byron, Algernon Charles Swinburne, Guy de Maupassant, Paganini, Felix Mendelssohn, and Vincent Van Gogh—not to speak of many distinguished personalities in our own day and generation. No sufferer need fear, therefore, that his position is unique in the world, or that he will pass through it without informed understanding and constructive help.

The Division of Epilepsy of the South African National Council for Mental Health has come into existence for that very purpose; and to fulfil its objects, it will need the moral and financial support of the ever generous public. As this will be forthcoming, the National Council will be in a stronger and stronger position to reduce the incidence of epilepsy in the Republic by the new therapeutic and preventive approaches, and to salvage for productive work and creative living a large section of our South African people who would otherwise be lost.

THE RACIAL INCIDENCE OF THE LESS COMMON FORMS OF HEART DISEASE AT GROOTE SCHUUR HOSPITAL, CAPE TOWN, 1952-61

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The extremely low incidence of coronary vascular disease in the Bantu of Cape Town has previously been documented. In Whites the disease is common, and in the Cape Coloured the incidence lies between that of the 2 other races. Hypertension, on the other hand, occurs commonly in all three racial groups, and appears to be more severe in the non-White, particularly so in the Cape Coloured female. Valvular disease, especially syphilitic, is commoner and more severe in the non-White races.

The 'population at risk' in Cape Town, the distribution of the 3 racial groups, their attendance at Groote Schuur Hospital and the electrocardiographic (ECG) facilities, during the 10-year period under review, have been analyzed in a previous paper. All 3 races have the same geographic and climatic environment but the socio-economic, dietary and genetic differences are considerable.

It is the purpose of this paper to report the incidence of the less common forms of heart disease (as obtained from ECG data), to present the relative incidence of all forms of heart disease, and to compare these figures with those published in an earlier report. Since the means test prevented the attendance of the wealthiest section of the general population, the hospital population was selected. This partially excluded the more privileged section of the Whites, but scarcely affected the non-Whites in this respect. The figures obtained in this survey may therefore be a more accurate reflection of the Cape Coloured and the Bantu than of the Whites.

Material and Methods

Material and methods have been described in detail elsewhere. In brief, all inpatients and outpatients attending Groote Schuur Hospital and the 44 teaching beds in the New Somerset Hospital were included in the ECG service of the Cardiac Clinic. Almost all the 56,807 ECG services were interpreted by 2 members of the Cardiac Clinic (about 90% by me), so that errors in interpretation were constant in all the racial groups. The same physicians and surgeons saw patients of all races, and equal facilities for obtaining ECG investigations were available for all
groups. The majority of inpatient ECGs came from the medical wards. Almost all outpatient records came from the medical outpatients' department. In all cases the ECGs consisted of the 6 limb leads and 7 precordial leads V₁ to V₆.

As shown elsewhere, the attendances of White and Cape Coloured outpatients and inpatients were roughly equal. The Bantu subjects, although significantly fewer in number than either of the other 2 groups, were generally well represented in the hospital population, particularly in the under-50-years age group.

The population distribution and breakdown has also been described. It is roughly the same in the Whites and the Cape Coloured, although there are more elderly Whites than Cape Coloured. The Bantu population is artificially loaded with males between the age of 20 and 40, the older groups being less well represented (Table I).

The total number of patients in whom ECGs were performed was 39,408, of whom 21,176 were Whites, 15,672 Cape Coloured, and 2,560 Bantu (Table I), a ratio of 4:2:1.

TABLE I. ECGS PERFORMED. AGE, SEX AND RACE DISTRIBUTION

<table>
<thead>
<tr>
<th>Age</th>
<th>Whites</th>
<th>Coloured</th>
<th>Bantu</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td>0—9</td>
<td>450</td>
<td>404</td>
<td>529</td>
<td>448</td>
</tr>
<tr>
<td>10—19</td>
<td>459</td>
<td>372</td>
<td>626</td>
<td>745</td>
</tr>
<tr>
<td>20—29</td>
<td>471</td>
<td>565</td>
<td>613</td>
<td>1,003</td>
</tr>
<tr>
<td>30—39</td>
<td>903</td>
<td>684</td>
<td>872</td>
<td>1,295</td>
</tr>
<tr>
<td>40—49</td>
<td>1,828</td>
<td>1,494</td>
<td>1,362</td>
<td>1,617</td>
</tr>
<tr>
<td>50—59</td>
<td>2,638</td>
<td>2,312</td>
<td>1,649</td>
<td>1,762</td>
</tr>
<tr>
<td>60—69</td>
<td>2,450</td>
<td>2,415</td>
<td>1,058</td>
<td>1,079</td>
</tr>
<tr>
<td>70+</td>
<td>1,742</td>
<td>1,789</td>
<td>531</td>
<td>483</td>
</tr>
<tr>
<td>Total</td>
<td>10,941</td>
<td>10,235</td>
<td>7,240</td>
<td>8,432</td>
</tr>
</tbody>
</table>

75:57:1—19,738 were males and 19,670 females. However, some patients had records taken several times over the years, so that the actual number of individual patients was less (32,300). The age, sex and race distribution of the 39,408 patients is shown in Table I.

FINDINGS

1. Pulmonary Heart Disease

Pulmonary heart disease is not rare in Cape Town and its environs, confirming previous experience. Although chronic bronchitis and emphysema are major causes, many patients do not present the classical features of this disease as it occurs in the highly industrialized parts of the world. Smog, air pollution, adverse weather conditions, and occupational diseases, are virtually non-existent.

The incidence was calculated from all cases in which the diagnosis on the ECG request form was that of chronic cor pulmonale or chronic emphysema. Although these diagnoses were probably not always correct, in that this condition is not so easy to recognize as hypertension, coronary vascular disease, or valvular disease, it can be accepted that no racial selection was made in diagnosis. Cyanosis in particular is difficult to recognize in the pigmented races. In many cases, the ECG findings of right ventricular hypertrophy in patients with heart disease of uncertain origin suggested the diagnosis of cor pulmonale, which was subsequently confirmed.

The interracial incidence of chronic cor pulmonale is shown in Table II. The condition was common in all 3 racial groups and occurred in 2% of all patients requiring ECG investigation. No significant difference in racial incidence was found, which confirmed previous studies.

TABLE II. RACIAL INCIDENCE OF CHRONIC COR PULMONALE

<table>
<thead>
<tr>
<th>Race</th>
<th>ECGs performed</th>
<th>Cases of chronic cor pulmonale</th>
<th>Grouping by ECG severity in 529 cases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td>White</td>
<td>21,176</td>
<td>53</td>
<td>365</td>
</tr>
<tr>
<td>Coloured</td>
<td>15,672</td>
<td>40</td>
<td>314</td>
</tr>
<tr>
<td>Bantu</td>
<td>2,560</td>
<td>7</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td>39,408</td>
<td></td>
<td>722</td>
</tr>
</tbody>
</table>

In a series of 529 patients seen during an 8-year period, the ECGs were analysed for severity as follows: group 1, tracings that appeared normal or showed positional changes with clockwise rotation only; and group 2, tracings that showed right atrial hypertrophy, voltage change, or clear evidence of right ventricular hypertrophy. Incomplete and, rarely, complete bundle-branch block were also included in group 2. In group 1 there were 96 Whites, 41 Cape Coloured and 5 Bantu; and in group 2 there were 174 Whites, 184 Coloured and 29 Bantu (Table II). ECG evidence of right ventricular hypertrophy probably indicates significant pulmonary hypertension. Although there does not appear to be any direct correlation between cardiac weight, ventricular ratio or thickness of the right ventricular wall and the ECG pattern when this shows right ventricular hypertrophy, the finding of right ventricular hypertrophy compared with a normal pattern indicates a severer involvement of the right heart. On this basis, severer involvement of the heart in chronic lung disease appeared to be present in the Cape Coloured compared with the Whites. This is probably related to socio-economic and occupational factors.

As in most other series (with the exception of certain areas of India), males far outnumbered females in this disease, by 3 or 4 to 1, the peak age incidence being the 6th and 7th decades.

2. Pericarditis

The incidence, aetiological causes, and natural history of pericarditis in Cape Town have been fully discussed elsewhere. Rheumatic pericarditis, and pericarditis associated with cardiac infarction, lupus erythematosus, and the collagen diseases, have been excluded. All other types of pericarditis have been considered together. Previous experience has shown that tuberculosis is the commonest cause in this group.

The interracial incidence of pericarditis is shown in Table III. It occurred in 15% of all patients. Males outnumbered females by 2 or 3 to 1. Whereas about 0.4% of the Whites and 2% of the Cape Coloured had pericarditis, the incidence in the Bantu was 12%. The number of Bantu suffering from this condition was greater than that of either of the other 2 races, despite the overwhelmingly fewer subjects in the 'population at risk'. This has been shown to be due to the greater incidence of tuberculous pericarditis in the Bantu, the majority of the Bantu patients (at least 70%) being tuberculotics.

The interracial inci-
dence confirms previous reports and is consistent with publications from other countries. Tuberculosis in general shows a greater incidence, morbidity and mortality in the 'Negro' than in the White.\textsuperscript{12} This has been particularly shown in the USA\textsuperscript{13} and in Africa.\textsuperscript{14, 15}

TABLE III. RACIAL INCIDENCE OF NON-RHEUMATIC PERICARDITIS

<table>
<thead>
<tr>
<th>Race</th>
<th>ECGs performed</th>
<th>Patients with pericarditis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>White</td>
<td>21,176</td>
<td>53</td>
</tr>
<tr>
<td>Coloured</td>
<td>15,672</td>
<td>40</td>
</tr>
<tr>
<td>Bantu</td>
<td>2,560</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>39,408</td>
<td></td>
</tr>
</tbody>
</table>

3. Myocardial Failure of Obscure Origin and from Beri-Beri

These conditions are common throughout Africa, particularly in the Bantu.\textsuperscript{15-16} However, because clear-cut separate clinical entities are difficult to define, all cases of obscure myocardial failure, including myocarditis, are included under this heading. During the years 1952-56 a special study with close follow-up was made of all patients with heart failure of obscure origin, including beri-beri; but during the subsequent 5 years this was discontinued. Table IV therefore includes all cases of obscure origin and primary myocardial failure in which the aetiology has been reasonably established. There were 389 patients—85 White, 160 Coloured, and 144 Bantu. Males outnumbered females by more than 3 to 1. The condition was far commoner in the Coloured and Bantu than in the Whites, and the contrast is even greater if beri-beri is excluded.\textsuperscript{6}

4. Congenital Heart Disease

A diagnosis of congenital heart disease is generally made on the basis of cardiac murmurs or cyanosis, and ECG study is routine in all cases. Most of the patients were referred to me for special study in the Cardiac Clinic and many were investigated by cardiac catheterization and angiocardiography. Experience with 1,439 patients seen in the Cardiac Clinic during the 11 years 1952-62 has already been published.\textsuperscript{2} In Table V the racial incidence is shown both from this experience and from ECG data. The disease is common in all 3 races, comprising 4% of all patients in whom ECGs were recorded. The incidence is roughly equal in males and females. The sex incidence in the various defects has been reported elsewhere.\textsuperscript{6} Congenital heart disease accounted for the majority of patients with heart disease under the age of 10. The incidence in the Whites slightly exceeded the Cape Coloured, but this was probably not significant.

5. Arrhythmias

Arrhythmias unassociated with overt forms of heart disease were noted in 533 patients, 376 being White, 143 Cape Coloured, and 14 Bantu. 'Lone atrial fibrillation', which may well be a reflection of occult coronary vascular disease, was noted in 218 Whites, 71 Cape Coloured, and only 6 Bantu, during a 7-year period.

6. Miscellaneous Conditions

This group, which was not analysed, included conditions such as collagenosis, haemochromatosis, myopathies, scur­derma, sarcoid, diabetes, anaemia, carcinoma, liver disease, ionic disturbances, endocrine disturbances, and various abnormalities of undetermined cause. 'Possible coronary disease' (i.e. patients in whom there was either a clinical suspicion of coronary vascular disease but a normal ECG, or an abnormal ECG suggesting coronary vascular disease without the clinical counterpart) made up the major proportion.

**CONCLUSIONS**

The interracial incidence of heart disease, as assessed on routine ECG request forms, varies considerably in the 3 racial groups in Cape Town. This is well shown in Table \textsuperscript{VI}. Thus, after excluding 8,592 found on ECG to be normal (4,706 White, 3,158 Cape Coloured, and 628 Bantu), there were 30,916 patients, of whom 16,450 were White, 12,514 Cape Coloured, and 1,952 Bantu. Coronary vascular disease was analysed according to rigid criteria of trans-mural infarction, as well as ischaemic patterns associated with a definite picture (as previously described).\textsuperscript{3} Bundle-branch block, right or left, without a history of coronary disease was present in 233 Whites, 120 Cape Coloured, and 141 Bantu. 'Possible coronary disease' was not analyzed (see above).

In Whites, the incidence of the different forms of heart disease was as follows: Coronary vascular disease occurred in about one-fifth of the patients and hypertension in about two-fifths; one-tenth had rheumatic heart disease and one-
In the Cape Coloured, as compared with the Whites, hypertension was equally common, coronary vascular disease half as common, and rheumatic heart disease 1½ times as common. Syphilitic heart disease, non-rheumatic pericarditis, and cardiomyopathy, were significantly more common in the Cape Coloured than in the Whites, but were still relatively uncommon.

In the Bantu, on the other hand, coronary vascular disease was excessively rare, the commonest cardiac conditions being hypertension, rheumatic heart disease, pericarditis, cardiomyopathy, and congenital heart disease. Syphilitic heart disease was even more common than in the Cape Coloured.

These data confirm those of previous studies.

SUMMARY
1. A total of 56,807 electrocardiograms from 39,408 patients attending Groote Schuur Hospital, Cape Town, during the 10 years 1952 - 61 has been analysed in order to determine the interrracial incidence of different forms of heart disease.
2. Pulmonary heart disease occurs equally frequently in the 3 racial groups but ECG evidence of severity appears to be greater in the Cape Coloured than in the Whites.
3. Pericarditis occurred out of all proportion in the Bantu, being the third commonest form of heart disease in this racial group. It was far more common in the Cape Coloured than in the Whites. The high incidence of tuberculous pericarditis is mainly responsible for these findings.
4. Cardiac failure of unknown aetiology (cardiomyopathy) was far more common in the Bantu than in other races, and accounted for a significant proportion of heart disease in the Bantu.
5. Congenital heart disease was equally common in all 3 racial groups.
6. Isolated arrhythmias, particularly atrial fibrillation, was far more common in the Whites than in the Cape Coloured or the Bantu, presumably caused by occll coronary vascular disease.
7. These findings confirm previous experience reported from this Clinic.

I wish to thank the staff of Groote Schuur Hospital for their cooperation throughout this study, and Dr. J. G. Burger, Medical Superintendent of Groote Schuur Hospital, for permission to publish. My special thanks are due to Mrs. C. M. Hall for her untiring assistance with the analysis of the data, and to Dr. W. Beck for his help with the interpretation of the electrocardiograms during 1961. My thanks are also due to the City Council of Cape Town and the Council for Scientific and Industrial Research for their financial support.

REFERENCES

HEIGHTS AND WEIGHTS OF WHITE NURSERY-SCHOOL CHILDREN IN PRETORIA

J. G. PRINSLOO, M.B., CH.B. (PRETORIA), National Nutrition Research Institute, Pretoria

In 1947 Woodrow and Robertson investigated the heights and weights of White and Cape Coloured children in Cape Town in the age group 0 - 6 years. It was stated that the height and weight of each child were recorded by these authors within two weeks of the child's actual birthday, but no details of the techniques employed were given. The results were compared with values from Sheldon's "Diseases of Infant and Childhood". No sex differentiation was made. The values for the White children studied approximated Sheldon's values for normal children, but the Cape-Coloured children were shorter and lighter; the difference in weight being more pronounced than in height.

Robertson (1952) published the results of a survey of the heights and weights of 170 pre-school children residing near Pretoria.

Phillips (1953) conducted an investigation on the heights and weights of nursery-school children who resided in Cape Town, Johannesburg and Durban; the total number of children being 801. The children were divided into a White upper-income group, a White lower-income group and a Bantu group. The measurements were taken by the staffs of the nursery schools. In the White upper-income and Bantu groups the nude weight was recorded. In the remaining group the children wore 'underclothes' or 'light indoor clothing'. The children were divided into quarter-year age groups ranging from 2½ - 6½ years.

Other than those listed above, no studies appear to have been carried out on the heights and weights of pre-school children in South Africa, and it was decided to carry out a survey on Pretoria nursery-school children in order to render more complete the data available on White children in this country.

THE SURVEY

During the period August—September 1960, 15 nursery schools in Pretoria or its immediate vicinity were visited. All the children present at each school on the day of the visit were measured, with the exception of those who refused to cooperate. The sample was, therefore, reasonably representative of the nursery-school children of Pretoria, but not necessarily of Pretoria's pre-school children. As the number of children was small, only 5 age groups were considered, viz. 2, (i.e. from 2nd birthday to day preceding 3rd birthday) 3, 4, 5 and 6 years. The children were divided into groups according to age and sex and...