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encouragement in carrying out these studies. Thanks also go to the technicians and staff of the *J. S. Marais Surgical Research Laboratory* for invaluable assistance, and particularly to Mr. C. C. Goosen for the photography. I am, of course, indebted to Messrs. African Explosive and Chemical Industries for making this investigation possible.

REFERENCE

1. Savitt, S. (1957): *Burns*. London: Butterworth.

DIE BASAALMETABOLISME-SNELHEID VAN BLANKE MANS

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In 'n vroeëre verslag,[1] waarin 'n vergelyking getref is tussen die basaalmetabolisme-snelheid (*B.M.S.*) van plaaslike Blanke- en Bantoeverpleegsters met dié van Britse vroue, is dit onder andere bevind dat die *B.M.S. van die Blanke verpleegsters* nie betekenisvol verskil het van dié van die ooreenstemmende ouderdomsgroep in die Britse *vrouebevolking nie*. Die moontlikheid is in die vooruitsig gestel dat, indien mans bestudeer word en weer eens geen *statistiese verskil* tussen die B.M.S. van plaaslike persone en Britte gevind word nie, die Britse standaarde vir *B.M.S. van Robertson en Reid*[2] *hier* gebruik sal kan word. Derhalwe is die B.M.S. van 'n verdere 102 Blanke *mans* tussen die *ouderdomme van 19 en 23 jaar* bepaal en statisties vergelyk met die ooreenstemmende ouderdomsgroep van *die Robertson en Reid-standaardgroepe* van die Britse bevolking.

Proefpersone en Metode

102 fisies gesonde Blanke mediese studente het as proefpersone opgetree. Die volgende prosedure is deurgaans gebruik: Alleen 'n ligte, lae, proteïenmaaltyd is gedurende die aand voor die bepaling deur die proefpersone genuttig. Die volgende oggend is die proefpersone, voordat enige voedsel of vloeistof ingeneem is, na 'n metaboliese kamer geneem, waar hulle dan 2 uur lank rustig gelê het voordat die bepalings gedoen is. Presies dieselfde prosedure is hierna gevolg as wat in die vorige ondersoek die geval was.[1]

Resultate

In Tabel I word die gemiddelde waardes vir lengte, gewig, liggaamsoppervlakte en B.M.S., sowel as die getal proefpersone in elke ouderdomsgroep, aangegee.

TABEL I. GEMIDDELDE LENGTE, GEWIG, LIGGAAMSOPPERVLAKTE EN B.M.S. EN DIE GETAL PROEFPERSONE IN DIE VERSKILLENDE OUDERDOMSGROEPE *

Ouderdom (jaar)	*Getal*	*Lengte (duim)*	*Gewig (lb.)*	*Liggaams-opper-vlakte (M^2)*	*B.M.S. (Kal./m^2/ uur)*
19	28	70·59	155·89	1·88	38·72
		(2·2)	(15·26)	(0·36)	(2·10)
20	34	70·95	166·51	1·94	38·81
		(1·91)	(16·80)	(0·30)	(2·99)
21	24	70·77	167·42	1·94	37·99
		(1·53)	(17·48)	(0·11)	(2·24)
22	9	70·27	172·57	1·96	38·50
		(1·28)	(22·30)	(0·10)	(1·77)
23	6	69·85	156·00	1·86	37·86
		(2·37)	(21·25)	(0·15)	(1·86)

* Standaardafwykings word tussen hakies aangegee.

Die regressielyn vir B.M.S. op ouderdom is bereken; die regressie-vergelyking $y=43{\cdot}3373-0{\cdot}2392x$ is gevind van toepassing te wees op die proefgroep. Voorts is die regressielyn vir Britse mans tussen die ouderdomme 19 en 23 jaar uit die standaardwaardes van Robertson en Reid bereken. In hierdie geval is die regressievergelyking $y=47{\cdot}554-0{\cdot}465x$ van toepassing gevind. Die variasie vir die bepalings het 5·777 vir Suid-Afrikaanse mans en 5·733 vir Britse mans beloop.

Ten slotte is die regressie-koëffisiënte vir Suid-Afrikaanse Blanke *mans statisties met die vir Britse mans* vergelyk. Geen betekenisvolle verskil tussen hierdie regressie-koëffisiënte is gevind *nie*.

BESPREKING

Uit die vergelyking tussen die B.M.S.-waardes van plaaslike Blanke mans met dié van Britse mans in dieselfde ouderdomsgroep, is dit duidelik dat die Britse standaardwaardes vir B.M.S. vir die betrokke groep plaaslik gebruik kan word. In 'n vorige ondersoek is dit aangetoon dat die gemiddelde B.M.S.-waardes van lokale Blanke vroue ook nie statisties betekenisvol van die ooreenstemmende groep in die Britse bevolking verskil nie.

Die twee lokale proefgroepe, in die geval van mans, sluit slegs die ouderdomme 18 - 23 jaar, en in die geval van vroue, slegs die ouderdomme 18 - 26 jaar in.

Vir hierdie ouderdomsgrense is die Britse standaarde beslis van toepassing. Verdere studies sal bepaal of in die geval van *laer en hoër ouderdomsgroepe dieselfde* gevolgtrekking geregverdig sal wees.

Aangesien dit egter welbekend is dat 'n uniforme afname in B.M.S. met ouderdom in verskillende bevolkingsgroepe intree,[3] kan ons verwag dat die Britse standaarde ook vir ander ouderdomsgroepe in die Suid-Afrikaanse bevolking van toepassing sal wees.

OPSOMMING

Die B.M.S. van 102 Blanke mans tussen die ouderdomme 18 — 23 is bepaal. Dit is gevind dat die B.M.S.-waardes van plaaslike Blanke mans nie statisties betekenisvol verskil van die standaardwaardes van Britse mans in dieselfde ouderdomsgroepe nie. Die gevolgtrekking word gemaak dat binne bogenoemde ouderdomsgroepe Britse B.M.S.-standaarde plaaslik aangewend kan word.

VERWYSINGS

1. Booyens, J. *et al.* (1961): *S.Afr. T. Geneesk.*, 35, 71.
2. Robertson, J. D. en Reid, D. D. (1952): *Lancet* 1, 940.
3. Quenouille, M. H. *et al.* (1951): *Commonwealth Bureau of Animal Nutrition*, Tech. Comm. No. 17.

RESEARCH FORUM

MESOTHELIOMA OF PLEURA OR PERITONEUM AND LIMITED BASAL ASBESTOSIS*

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Mesothelioma is now accepted by the majority of pathologists as an entity, and in recent years *diffuse or malignant mesothelioma* has been shown to be associated with pulmonary asbestosis *in Canada, Holland, South Africa, and Germany*. All these cases were *primary* in the pleura and in subjects *who had worked with asbestos in mines* or asbestos factories, or who lived in areas where asbestos was mined or treated.

In the autopsy service of one teaching hospital we have encountered 7 examples of mesothelioma, 4 in pleura and 3 *in peritoneum*, all but one in the last 3 years. None had had asbestosis clinically or radiologically where such examination was done, and only one patient had a history of occupational exposure to asbestos. At autopsy in all, the lungs did not show the appearances of asbestosis, but careful examination revealed scattered small carbon-pigmented foci of fibrosis in the basal 1 cm. or so of the lower lobes. These lesions were inconspicuous and readily overlooked, but in 6 of them the microscopical picture was that of pulmonary asbestosis

* Abstract of a paper presented at the Research Forum, University of *Cape Town, on 14 June 1962.*

with abundant asbestos bodies. Sections from elsewhere in the lungs showed no asbestosis and usually no asbestos bodies. In the one case where no asbestos bodies and no basal asbestosis was demonstrated, a section appeared to have been taken of the base of a lung, and though no smears were taken from this area to look for asbestos bodies, we must regard this case as not having the basal asbestosis.

Six were males and 1 was a female. Two were in their late thirties, the one with a 15-year history of working in asbestos mines and the other a builder. One was 46, and the remaining 4 were over 60 years of age. Two were Native Africans, 2 Coloured, and 3 Whites. From the pathological point of view they did not differ from other reported cases of mesothelioma; 4 were examples of mixed sarcomatous — carcinomatous type, and one each of sarcomatous, carcinomatous and anaplastic types.

It is suggested that gravity and lung movements determine the basal accumulation of inhaled asbestos fibres, which then become asbestos bodies and attain locally a carcinogenic concentration. This is effective on the basal pleura or the peritoneum over the diaphragm, which is only a few millimetres distant. The usual neoplastic response to asbestosis is bronchial carcinoma, but an increasing number of cases of mesothelioma in ordinary industrial asbestosis is being reported. In the region of this limited basal asbestosis there are no bronchi with glands, only bronchioles, and bronchial carcinoma is not to be expected.

That the association of a limited basal asbestosis and mesothelioma is not confined to South Africa is shown by the finding of a basal asbestosis in 9 patients with mesothelioma, examined personally in 1961 in 4 centres in the Unit States, out of 15 in whom adequate lung was available f study. In all but 2 of them the basal asbestosis had be overlooked.

The two factors against recognition of this association a the reluctance of some pathologists to diagnose mesothelion and the failure to see or recognize the limited asbestos which will also be missed microscopically unless sections a taken from the lung bases.

The enormous increase of the world consumption asbestos, and its use in a wide variety of industrial product makes it possible for an increasing number of people man facturing, handling, or using these products to inhale enou asbestos fibres to produce this limited basal asbestosis, wit out having any clinical or radiological evidence of it. In modern home asbestos may be present, from the roof — asbestos tiles or roofing, in ceilings, in floor tiles, as insul tion in electrical equipment such as electric irons — to U asbestos-insulated pipes in the basement. It may well that the home hazard from asbestos is theoretical rather tha practical to the occupant, but it may not be so to the builde It does indicate, however, how widespread is the use of asbest today, and while the number of cases of classical asbestos with pulmonary signs and symptoms may not significantl increase, we may have a marked increase in those with t limited basal asbestosis described, and of mesothelioma pleura and peritoneum in people who have occupations which association with asbestos is not suspected. This may we be the explanation why 6 cases of a rare tumour were en countered in the autopsy service of one hospital in 3 years.

MEDICAL SERVICES PLAN

REPORT BY THE CHAIRMAN, DR. M. SHAPIRO, TO THE THIRD ANNUAL GENERAL MEETING

I have pleasure in presenting to you the Third Annual Report of Medical Services Plan. This report covers the period 1 January to 31 December 1961.

The balance sheet shows that at the close of the year under review the capital account stood at R36,533, which represents the balance of R16,199 brought forward from the last balance sheet plus the sum of R20,334 which was the excess of revenue over expenditure for the year. The Plan holds as additional reserve the capital sum of R15,000 which is the aggregate amount of loans of R20 each subscribed by the 750 participating doctors in the Plan. As at the date of the close of the balance sheet, the cash resources at the bank in savings account and on fixed deposits amounted to R103,080.

The income for the year was R258,218 being R256,756 from subscriptions and R1,462 from interest on investments. The expenditure amounted to R237,884 made up as follows: R202,864 (equivalent to 79% of subscription income) was allocated for medical services and hospitalization. Of this amount, R145,501 had been paid as at 31 December 1961. A further R42,363 had been set aside for claims approved but not yet paid at the closing date of the period under review, and R15,000 was earmarked as an estimated provision for benefits for services rendered during the year, but for which accounts were not yet to hand at 30 December 1961. Administration expenses for the year amounted to R33,933 which is 13·2% of subscription income. This is somewhat less than last year and reflects a continuing trend of economy in the administration of the Plan.

The remarkable growth of subscriber membership and of monthly subscription income is shown in the following Table:

In order that members may be brought up to date with th latest position, the figures for the first 6 months of the curre year have also been included.

The rapid and sustained increase in the membership of th Plan is eloquent testimony of the need which exists f insurance against the cost of illness and of the appreciatio by the public of the advantages of the very comprehensiv cover offered by the Plan.

The surplus of subscription income over expenditure fo benefits and administration expenses was 7·8% of the sub scription income. In view of the fact that more than ha the total membership of the Plan was enrolled during the yea under review, it is apparent that services have been demande and rendered on a most generous scale. As members know conditions from which subscribers are already suffering o the date of their admission to the Plan are excluded fro benefits. It follows therefore that the incidence of cost illness for which the Plan is financially liable must be sub stantially less in the initial stages of membership than it wil be later. A surplus of only 7·8% at this early stage of th development of the Plan is viewed by your Board with grav concern, since it is clearly inadequate to provide the substan tial reserves which will be necessary to safeguard the futur interests of the members. I should like to take this opportunit to warn subscribers that demands for services other than ar justifiable and necessary may have to be compensated for b increased premiums or by reduction of benefits.

In this connection, I feel it my duty also to quote th following from the subscriber's contract with the Plan: "I is the intention of the Plan to provide comprehensive medica

	31 Dec. 1960	*30 June 1961*	*31 Dec. 1961*	*30 June 1962*
1. Number of groups	61	89	114	144
2. Number of subscribers	1,733	3,105	3,977	5,028
3. Number of persons covered	4,852	8,605	11,141	14,289
4. Monthly subscription income	R10,400	R18,882	R24,391	R31,114