Notes, Short Comments, and Answers to Correspondents.

SOME COMMON INDUSTRIES AND INCIDENTAL DISEASES IN THEIR VICINITY.

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THE industries I propose to inquire into are those of the blacksmith and the plumber. Roughly speaking, a blacksmith is one who works in iron, and a plumber is one who works in lead. It might be contended that there is little use in finding fault with the melting of some tons of iron and lead in any small burgh when millions of tons of iron and lead ores are smelted in the mining districts. But the iron ore smelter has an eye to economy. He finds that the gases escaping from his blast furnace are highly inflammable. He therefore prevents their escape into the air and utilises them to assist in keeping up the necessary heat. In the same way the lead ore smelter constructs flues of great length into which he conducts the lead fumes. These flues are subsequently swept to recover the lead.

The Blacksmith and Plumber.

But it is otherwise with the blacksmith and the plumber. They allow their fumes to go right out to the air, generally at a very low level, and their chimneys never require to be swept. The blacksmith is only exposed to fumes when withdrawing glowing metal from his fire. In this connexion I would note that blacksmiths are reputed to be especially subject to cancer.

The intercepted fumes from a lead-melting furnace in Crieff referred to were examined by the city of Dundee analyst and found to contain manganese. The business was officially declared injurious to health and closed.

On Sept. 28th, 1895, I issued the following report:—

"No one would contend that a lump of lead would be rapidly acted upon when exposed to the air, but if it be in a finely powdered state it rapidly ignites. In the method detailed in my report of March, 1894, there exist very favourable conditions for the fusion and volatilisation of the metal. The material is in the shape of flat sheets, or in tubes, and contains a quantity of tin in the form of solder, and carbon in the form of wood and dirt. It is well known that the fusibility of lead is greatly increased by adding tin, and its volatility by adding carbon. In estimating the nature of the fumes the impurities of commercial lead and tin have to be taken into account.

"The following is an analysis of such fumes made by the city of Glasgow analyst: lead, 0.08 per cent.; manganese, 0.05 per cent.; iron, 5.06 per cent.

"There was a large percentage of dirt, but antimony, arsenic, &c., were not present, or were in such inappreciable quantities as not to be recognised. Where the metals are fused by an ordinary fire the fumes travel no great distance. This method is now discontinued in Crieff and was only used on five occasions. It is different where the metals in quantities of 1 cwt. or less are melted by means of a small blast or reverberatory furnace. In this case the fumes travel much further and are emitted daily. In September, 1895, I certified the death of a young girl as inherited and acquired poisoning, lead and manganese. An analysis of the deposited fumes on the cottage where she lived 200 feet from the blast furnace gave: manganese, 0.102 per cent.; iron, 3.40 per cent. There was a large percentage of dirt, with traces of lead and arsenic. This analysis was made by a chemist whose business it was to examine iron rails for the presence of the required manganese and the absence of arsenic. The father of this girl also died of chronic metallic poisoning early in the same year. The girl when an infant suffered from colic."

Composition of Fumes.

As to the composition of the very hot fumes escaping from the chimney of the two trades, the natural inference would be that in the one they would be iron and coal smoke and in the other lead and coal smoke. But the blacksmith does not use pure iron, nor does the plumber use pure lead. The iron used by the blacksmith may contain carbon, manganese, silicon, sulphur, phosphorus, copper, and perhaps tungsten and chromium. And the plumber uses more than lead. He uses tin, copper, zinc, &c. These metals are no more pure than his lead. Lead occurs in nature as an oxide and as a sulphide, also in saline combinations forming the native sulphate, phosphate, carbonate, chromate, molybdate, and arsenate. Tin in its natural state is generally found associated with arsenical iron pyrites and a mineral called wolfram, which is tungstate of iron and manganese. Copper is found naturally associated with iron, arsenic, sulphur, tin, and tungsten. Zinc is found associated with iron, sulphur, and manganese.

I have no analytical evidence that the blacksmith's fumes contain chromium, tungsten, copper, and phosphorus, but they certainly contain iron, manganese, carbon, sulphur, and silicon. The intensely poisonous nature of ferro-silicon is well known. In the same way I have no analytical

evidence that the plumber's fumes contain chromium, tungsten, molybdenum, or phosphorus, but they certainly contain lead, iron, manganese, copper, zinc, tin, and arsenic. In each trade there is in addition to the metallic fumes, the coal smoke. Coal, as we all know, is principally composed of carbon, and also contains hydrogen, oxygen, nitrogen, sulphur, &c. When coal is kindled the mass is gradually heated, producing various compounds of carbon, hydrogen, and sulphur. Some of the compounds, such as marsh gas and olefiant gas, burn without much smoke. But others, such as benzene and naphthalene, important constituents of tar, are only partially burnt and are deposited in the chimney as soot. But no soot is deposited in the chimneys of the industries in question: it is sent right out into the air.

With regard to the composition of the metallic fumes, I give an analysis of the deposits found 400 feet from a blacksmith's shop and of those found 120 feet from a plumber's shop. These analyses were kindly made by the late Mr. Ivison McAdam, F.R.S.E., F.I.C., F.C.S., Analytical Laboratory, Surgeons' Hall, Edinburgh, on June 27th, 1895, and are as follows:—

(A) Blacksmith. (B) Plumber or Tinsmith.							
	(A)	(B)		(A)	(B)		
Moisture ...	17.22	22.16	Zinc oxide ...	0	0.04		
Organic vegetable matter	66.93	3.63	Manganese oxide ...	s.t.	s.t.		
Mineral matter	15.85	74.21	Plumbic oxide (lead)	0	s.t.		
	100.00	100.00	Arsenic ...	0	s.t.		
Mineral matter consists of—			Carbonate of lime ...	1.84	2.54		
Insoluble silicon matter	77.52	90.29	Sodium chloride ...	1.23	0.24		
Tin oxide ...	0	s.t.	Sodium sulphate ...	0.17	0.14		
Ferric oxide	18.01	6.16					
Ferrous oxide	1.23	0.38					
Copper oxide	0	0.21		100.00	100.00		

s.t. = slight trace.

The deposit marked "Blacksmith" was of a bright green colour and when examined under the microscope was seen to consist of vegetable cells of a very simple character. When heated the residue was red in colour from the presence of iron oxide. The insoluble portion consisted of fragments of siliceous matter. The plumber or tinsmith's sample had a dark green colour and when burned the residue was red. The insoluble matter consisted of small stones and other siliceous particles."

The following are passages from reports issued by me in 1895:—

"Blacksmith.—I am of the opinion that the business of a blacksmith is an offensive process of trade, and so far as I have been able to observe it is carried on without any precaution. I am informed that in the forging of horseshoes, &c., about 25 per cent. of iron is lost probably in the shape of fumes driven into the air at a low level by the bellows or wind furnace. In the neighbourhood of forges the fumes are to be seen as a green deposit or pigmentation of buildings, fences, trees, &c. In estimating the nature of the fumes in addition to the iron, we have to take into account its impurities, such as arsenic, phosphorus, and the added manganese. Some new and dangerous compound seems also to be formed. Singular and fatal cases of sickness are to be met with among individuals long exposed to the fumes. [A number of cases were here recorded.] I should recommend that the chimney of every forge should be provided with a cap or hood."

"Plumber.—These diseases and symptoms were observed in the neighbourhood of a plumber's place of business, with notes on the effects of the fumes on animal and vegetable life. Vegetation wherever exposed to the fumes succumbed or was arrested in growth. Animals suffered from rheumatic, digestive, respiratory, circulatory, nervous, genito-urinary, and integumentary disturbances. The diseases observed in man were rheumatic, digestive, respiratory, circulatory, nervous, genito-urinary, and integumentary disturbances. Rheumatism, lumbago, sciatica, and persistent pains in the muscles and tendons were common; audible creaking in joint and of tendons was noticed."

Manganese Poisoning.

When I commenced the inquiry into metallic fumes in 1892 little seemed to be known about manganese. In an official document I characterised it as a poison possessing properties like arsenic and phosphorus. More recently some information was to be gained from books, especially from Dr. Phillips's "Inorganic Materia Medica." From that book it may be learned that Kobert found that manganese when given by the mouth is inert, but when injected subcutaneously it is an active agent. I think it is equally active when it is inhaled. According to Phillips, manganese slows the pulse and heart's action and produces convulsions; when long continued it produces progressive wasting and feebleness, or staggering gait and paraplegia, with vomiting and purging. Phillips thinks its action is like that of lead or zinc.

From the reports submitted it may be gathered that my opinion is that large quantities of metal are fumed from the forge of the blacksmith and the furnace of the tinsmith and the plumber. From both manganese seems to be emitted; it has a strong affinity for carbon, and the deposited fumes are principally seen on wooden fences and trees, and on the slates and stones of buildings. Both also emit iron, and so far there is a similarity. While the tinsmith or the

plumber's fumes contain lead and small quantities of zinc, tin, arsenic, copper, and perhaps antimony, the blacksmith's probably emits larger quantities of arsenic, and in addition phosphorus, sulphur, and silicon, and the products from the combustion of coal. The complaints observed in the houses of the neighbourhood of the trades are similar. There is, however, a difference. While cancer and erysipelas seem common in the vicinity of the blacksmith's they are not observed in the case of the other trade. On the other hand, cases of persistent pains in the bones and of onychia were observed in the vicinity of the tinsmith and plumber's furnace. The foregoing details were practically embodied in my annual report of 1895, which was printed and circulated at that time. In the "Nomenclature of Diseases, 1906," iron is scheduled as one of the poisonous metals as well as 12 others, including arsenic, copper, lead, and zinc, but neither tin nor manganese is mentioned. These are the seven metals found in the fumes by Mr. McAdam, one of the first analytical chemists of his day. Anilin, benzene, &c., are to be found scheduled under the poisonous organic substances.

As I have already said, little was known about manganese when I commenced my inquiry, and as little about coal-tar as a poison. Four or five years ago, however, there appeared a work on industrial poisoning, written by Dr. Rambousek, Professor of Factory Hygiene, Prague.

According to Rambousek, as early as 1837 nervous disorders had been described in workmen who ground manganese dioxide. He goes on to say that the malady was forgotten till 15 years ago, when von Jaksch, in Prague, demonstrated several such cases in persons employed in a large chemical factory in Bohemia for the drying of Weldon mud. Von Jaksch is of the opinion that only manganese dust rich in manganese protoxide is dangerous. According to Rambousek, the important constituents of tar are:—(1) Hydrocarbons of the methane series: paraffin, olefine. Hydrocarbons of the methane series: benzene and its homologues, naphthalene, anthracene, phenanthracene, &c. (2) Phenols, cresols, naphthols. (3) Sulphides, sulphuretted hydrogen, carbon bisulphide, mercaptan, thiopen.

Rambousek adds that in tar distillation industrial poisoning frequently occurs. Workmen coming into contact with tar suffer from an inflammatory affection of the skin—so-called tar eczema—which occasionally takes on a cancerous nature similar to chimney-sweeper's cancer. In lampblack workers, who tread down soot in receptacles, the malady has been observed to affect the lower extremities, and especially the toes. Anilin is a very frequent cause of poisoning, and it is apt to produce pneumonia. Rambousek gives the case of a workman employed for 1½ years in the anilin department who died of cancer of the bladder. He says that cancerous tumours are frequently observed in anilin workers and that anthracene workers suffer from a skin eruption on the hands, arms, feet, knees, &c., which sometimes develops into cancer. He considers benzene to be very poisonous, producing unconsciousness and sudden death, and industrial benzene poisoning to be especially frequent now in view of the increasing use to which it is put, and productive of pneumonia and severe inflammation of the respiratory passage.

Rambousek does not seem to have observed the digestive diseases observed by Phillips and myself, and neither of them note the rheumatic condition I recorded. Possibly the difference between Rambousek's observations and mine may be accounted for by the mental and physical character of the different nations. In Rambousek's cases, also, it is the workmen who suffer. In my case it is the general outside public.

THE ALTERATION OF THE ŒSTROUS RHYTHM IN GUINEA-PIGS BY UNDER-FEEDING.

UNDER well-regulated food conditions the Œstrous cycle in the guinea-pig is almost uniformly 16-17 days in duration. G. N. Papanicolaou and C. R. Stockard, of the Rockefeller Institute, find that under-feeding with a diet of 20 g. of carrots per day produces a prolongation of the diœstrum, and at the same time a congestion of the ovary and uterus with degeneration of the Graafian follicles; the extent of the prolongation depends upon the stage at which the animal is underfed. Under-feeding during the first 5-7 days of the diœstrum has only a slight effect, the next Œstrus being postponed for one or two days, while under-feeding during the latter part of the diœstrum—that is, 12-17 days after an ovulation and Œstrus—leads to a delay of about 7 days, the ovum being expressed at the twenty-third to twenty-fifth day instead of at the seventeenth day. Should an animal be underfed for 7 days—from the tenth to the seventeenth day—after Œstrus, the next ovulation and Œstrus is postponed for 10-11 days, arriving at the twenty-seventh or twenty-eighth day instead of at the seventeenth day. These variations are associated with the fact that the conditions of the ovary vary at the different times. Shortly after an ovulation the ovary contains almost entirely small primary follicles, not so unfavourably affected by food conditions as are the large Graafian follicles, which begin their growth and development during later stages of the diœstrum. A large follicle at the height of its development seems to require much better nutrition than does a small primary follicle, and the lack of proper food arrests its progress very readily; thus late under-feeding has the more injurious effect, and the postponement of the next

Œstrus is correlated with a retarded development of new ripe follicles in the ovary. The entire Œstrous activity depends on the conditions prevailing in the ovary. The delay of ovulation for 11 days following late and long under-feeding and after the under-feeding has been stopped is in accord with experiments which show that after removal of all young corpora lutea following an ovulation the next ovulation arrives in about 11 days instead of 16-17. This acceleration of 5-6 days is due to the absence of the corpora lutea, which, if present, evidently inhibit the maturation or prolong the time necessary for the development of ripe follicles in the ovary. These experiments all demonstrate the sensitivity of the follicles in the ovary to environmental conditions. Extreme variations in the Œstrous cycles have been observed in rats, and may in part be due to variations in diet.

COLONIAL HEALTH REPORTS.

St. Helena.—Major H. E. S. Cordeaux, C.B., C.M.G., Governor and Commander-in-Chief, in his report for 1919, states that the estimated civil population on Dec. 31st was 3468. The death-rate was 7.94 per 1000, and the birth-rate 33.98, being the lowest and highest respectively since 1909. The general health of the colony during the year was remarkably good, taking into consideration the state of semi-starvation in which a large portion of the poorer classes live. The want of a qualified dentist becomes more pressing every year. The colonial surgeon reports: "The state of the teeth and degree of oral sepsis found amongst the people of St. Helena, through years of neglect, is truly appalling, and is, no doubt, responsible for the large proportion of septic cases dealt with at the Civil Hospital. A great part of the colonial surgeon's time in the out-patient department of the hospital is taken up with extracting teeth, which in most cases could have been saved by the timely aid of a dentist." Hitherto, all efforts to induce a qualified dentist to visit the island have proved unsuccessful, mainly on the score of expense. There were 213 admissions to the hospital during the year, and there were 6 deaths. Miss Hart, the lady superintendent, resigned towards the end of the year, owing to failing health, after 14 years' devoted service in a position of exceptional difficulty and responsibility, and was succeeded by Miss Bennett. Referring to the scarcity of foodstuffs and the high cost of living, the Governor remarks: "The shortage of rice, though regarded as little short of a calamity by the poorer classes, may eventually prove a blessing in disguise by demonstrating that what has from long habit come to be regarded as an indispensable article of diet can be replaced by cheaper and more wholesome substitutes grown at their own doors. It is hoped that the efforts now being made to encourage increased production of foodstuffs and fodder will bear good fruit next year."

Gilbert and Ellice Islands.—In his report on these islands for 1918-19 Mr. E. C. Eliot, the Resident Commissioner, writes:—

"To date we have been spared the ravages of influenza, which took such a heavy native toll in the more southerly Pacific groups. Vaccination was carried out throughout the islands, the natives willingly subjecting themselves to the precaution. An acknowledgment of the willing coöperation, at some financial sacrifice, of shipping firms trading between Australia and these islands, also between Samoa and the Ellice Group, is here recorded, but chiefly are we indebted to Dr. Gould, of Ocean Island, who, by his forethought and untiring efforts as medical officer of health, staved off the danger which closely threatened the island on several occasions. For the time Ocean Island was the only port of entry for the colony, as Tarawa in the Gilbert Group and Funafuti in the Ellice, were closed as ports of entry owing to the lack of medical officers."

"Owing to the lack of communication following the wreck of Messrs. Burns' Philp's Island vessel on the Abemama reef in September, 1919, it has been found impossible to obtain the usual vital statistics from the Ellice Group and from a number of islands in the Gilberts. From the returns received (from eight islands only) a slight increase of births over deaths is shown. The question of infant mortality is receiving closer consideration. Many infants die from lack of natural or suitable feeding, and tinned or preserved milks are both costly and difficult to obtain. If traders would encourage the sale of milk in preference to that of useless scents and other unnecessary and undesirable European luxuries, it would be the means of saving many young lives. The colony lost the services of the European medical officer during the year, but the Tarawa Central Hospital is still full of patients owing to the confidence inspired by native medical practitioner Sowani."

St. Vincent.—According to the Blue-book for 1918-19, the estimated population of the colony is 51,990. The birth-rate for the year was 34.52 per 1000 and the death-rate 21.47. Illegitimate births formed 66.46 per cent. of the total of all births. The daily average number of patients in the Colonial Hospital in 1918-19 was 86, the death-rate being 5.7 per cent. of the 1049 cases treated. The number of operations performed was 352. The Casualty Hospital at Georgetown, with four beds, continued to fulfil its purpose of providing the means of treating emergency cases, 32 cases being dealt with. At the Yaws Hospital 80 cases were treated, and 49 of these were discharged cured. At the usual district dispensaries and at special travelling dispensaries 999 other yaws patients were treated. From April 1st, 1916, to March, 1919, the total

number of cases of yaws treated in the colony was 2688; 1451 have been discharged cured. In the Leper Asylum there were 8 patients on March 31st, 1918; 4 were admitted in the year following and 2 died. The campaign undertaken by the Rockefeller International Health Board for the eradication of the ankylostomiasis, or hookworm disease, was carried on by Dr. P. B. Gardner to Sept. 9th, 1918. Of 21,430 persons examined 12,395 were found to be infected with hookworm; the number treated was 11,577, of whom 10,279 were cured. The sanitary preventive work of providing fly-proof latrines and closets of an approved pattern has proceeded uninterruptedly notwithstanding the closing down of the Rockefeller Health Board's campaign.

THE FLY IN COURT.

AN important decision of the Supreme Judicial Court of Maine is recorded in a recent issue of the U.S.A. Public Health Reports. The court decided in the case of *Williams v. Sweet*, 110 Atl., 316, that a guest who had contracted for a two weeks' stay at an hotel was justified in leaving before the expiration of this period when the dining-room was infested with flies. A contract admittedly was entered into for a fortnight's stay at the hotel, but after three or four days the guests left, paying the usual transient rate for the time they had been at the hotel, the reason assigned for leaving being that the flies in the dining-room were dangerous to health. No complaint was made regarding other conditions at the hotel. The proprietor sought to recover for the full two weeks' stay contracted for, and he succeeded in the lower court. But the supreme court granted the motion of the defendant for a new trial, holding that the guests were justified in leaving the hotel on the ground alleged. During the hearing of the action the dangers of the fly were discussed at great length in court, with free quotation from public health literature on the subject.

"HUMANE-KILLERS" IN SLAUGHTER-HOUSES.

AT the last meeting of the Taunton Rural District Council the medical officer of health urged that measures should be taken to prevent the cruelty to animals caused by the work of slaughter-houses being done by inexperienced persons, and through the neglect to use "humane-killers." A retired butcher, a member of the council, supported the medical officer, and said that the use of "humane-killers" should be made compulsory. On the recommendation of the medical officer of health an inspector of the Society for the Prevention of Cruelty to Animals was appointed honorary assistant sanitary inspector, with a right of entry to the rural slaughter-houses.

MALNUTRITION IN NEW YORK.

AN investigation into malnutrition is at the moment being conducted in New York by a body called the "New York Association for Improving the Condition of the Poor." An area of 40,000 inhabitants in the Italian quarter of the city has been selected for an intensive investigation into the causes of disease with a view to its prevention. In addition to dealing with pre-natal and post-natal conditions a thorough medical examination is made of every child. Actual physical defects are dealt with and the children kept under continuous observation for 12 months. This is done either at what are called nutrition clinics or at the home. The precise function of these clinics does not emerge very clearly from the report before us, whether they are purely medical clinics for examination and treatment of selected cases of malnutrition, or whether they are at the same time educational health centres for the whole area. It is found that the most satisfactory work is done in the home, where the child is weighed weekly in the presence of the mother. His diet and daily routine are carefully regulated, and if at the end of four months he makes sufficient improvement he is then visited monthly for the following eight months. The diagrams illustrating the growth and development of children under observation are of little value on account of the small numbers involved. The experiment is being carefully and accurately carried out, and should show interesting findings as to the relation of dietary, regulated exercise, and rest on child growth, but it is possible that the eventual findings may not justify the expensive and elaborate methods employed.

THE NEEDS OF BRUMMANA HOSPITAL.

THE British Hospital on the western slope of Mount Lebanon, under the care of the Friends' Foreign Mission Association at Brummana, has done excellent work for 40 years, but is now in urgent need of medical and surgical materials of all kinds. The Turks occupied the buildings during the war, and on their retirement in 1918 stripped the hospital, leaving it in a filthy condition. Dr. A. J. Manasseh, the medical superintendent, has been able to shelter Syrian and Armenian children there during the past two years, the Red Cross and the Syria and Palestine Relief Fund having furnished necessities enabling 50 patients to be taken; half this number, however, were obliged to sleep

on the floor on account of the shortage of beds and bedding. Dr. Manasseh is now in this country, and expects to return at the end of this month to Brummana, where he hopes to re-establish medical work in a district which the war has left in a very degraded condition. The need of such assistance for Syria can hardly be overstated; malaria, typhus, dysentery, relapsing fever, scurvy, and scabies were rife throughout the war. After the Turkish retirement typhus and relapsing fever were stamped out by means of a campaign against lice, but lack of materials prevented headway being made against the other diseases. Dr. Manasseh was able at one time to clear the hospital compound of mosquitoes by the use of paraffin oil, which was also poured when possible on the surface of all rain-water cisterns, tanks, and ponds in the neighbourhood, but the supply gave out, and malaria continues to be prevalent. Nothing has apparently yet been done by the new French Government to improve the condition of the mass of the people. Any form of medical stores or hospital equipment will be gratefully received by Dr. Manasseh, c/o F.F.M.A., 15, Devonshire-street, London, E.C.2.

THE current issue of "It," the organ of the Federation of Norfolk Teachers, contains an article on the School Medical Services, in which complaint is made of the dogmatic ways of medical officials and their lack of coöperation with the general practitioner, as well as their want of deference to him. It would certainly add to the efficiency of the service if the general practitioner were more often coöpted as a worker in treatment and routine inspections, and we are glad to observe among administrative departments an awakening to a sense of the value of the general practitioner in any scheme for the development of public health.

Communications, Letters, &c., to the Editor have been received from—

- A.—Mr. S. E. Atkins, Exeter; Sir R. Armstrong-Jones, Lond.; Messrs. Allen and Hanburys, Lond.
- B.—Dr. W. Brown, Lond.; Barnold's International News Service, Lond.; Board of Education, Lond.; Messrs. P. Blakiston's Son and Co., Philadelphia; Brig.-Gen. W. W. O. Beveridge; Dr. A. D. Bigland, Liverpool.
- C.—Child Study Society, Lond.; Charing Cross Hospital Medical School, Lond.; Governors and Staff of; Companhia de Moçambique, Lond.; Dr. C. Coombs, Bristol; Chadwick Trust, Lond., Sec. of; Cunard Steamship Co., Liverpool.
- D.—Sir D. Duckworth, Lond.; Dr. T. M. Draper, Lond.; Mr. A. Doran, Lond.; Dr. V. Dickinson, Lond.
- E.—Mr. W. Edgeley, Lond.; Mr. A. Elliot, Edinburgh; Edinburgh Dental Hospital School.
- F.—Mr. R. Farrant, Lond.; Dr. A. Florence, Geneva; Faraday Society, Lond., Sec. of; Mr. W. R. Farebrother, Lond.; Dr. R. M. Frazer, Belfast; Dr. H. W. Frauenthal, New York.
- G.—Dr. W. Griffith, Lond.; Dr. A. M. Gossage, Lond.; Great Northern Central Hospital, Lond.; Dr. J. Gairdner, Crieff; Dr. H. Gluckman, Johannesburg.
- H.—Mr. H. E. Haynes, Brentwood; Dr. P. Hamill, Lond.; Dr. R. Howden, Newcastle-on-Tyne; Mr. J. T. Henderson, Pietermaritzburg; Hospital for Sick Children, Lond.; Hull, Medical Officer of Health of; Major W. E. Home, R.A.M.C.; Dr. A. Hay, Aberdeen; Dr. J. R. Harper, Barnstaple; Hunterian Society, Lond.
- I.—Insurance Committee for the County of London.
- J.—Mr. G. Jefferson, Manchester.
- K.—Dr. W. N. W. Kennedy, Croydon; King's College Hospital Medical School, Lond., Sec. of.
- L.—London Medical Exhibition, Manager of; Dr. R. B. Low, Lond.; London Hospital Medical College, Sec. of; Dr. L. Ley, Great Yarmouth.
- M.—Dr. J. E. R. McDonagh, Lond.; Mr. G. Mayall, Bolton; Mr. R. F. Moore, Lond.; Capt. J. F. McMillan, R.A.M.C.; Ministry of Health, Lond.; Dr. W. A. Murray, Leeds; Manchester Medical War Committee; Dr. J. L. Martin, Chelmsford; Medical Society of London; Dr. A. McDougall, Alderley Edge; Dr. G. N. Meachen, Westcliff-on-Sea; Morocco, Lond., Editor of; Ministry of Pensions, Lond.; Mr. L. McMillan, Glasgow; Dr. R. Miller, Lond.
- O.—Col. M. D. O'Connell, Leeds; Dr. E. R. Ormerod, Nottingham; Oxford Medical Publications, Lond., Manager of.
- P.—Sir John Phillips, Lond.; Professional and Business Women's Hospital League, Lond.; Post-Graduate College, West London Hospital.
- R.—Royal Society of Tropical Medicine and Hygiene, Lond.; Dr. J. D. Rolleston, Lond.; Dr. R. R. Rentoul, Liverpool; Royal Society of Medicine, Lond.; Mr. W. Robertson.
- S.—Prof. C. E. Spearman, Lond.; St. Mary's Hospital Medical School, Lond.; Prof. W. Stirling, Manchester; Sheringham Daylight, Lond.; Lt.-Col. J. W. Springthorpe, A.A.M.C., Melbourne; Mr. C. H. Stevens, Wimbledon; Seamen's Hospital, Lond., Sec. of; St. Thomas's Hospital Medical School, Sec. of; Dr. C. Singer, Oxford; Scientific and Industrial Research Dept., Lond., Sec. of; St. Marylebone General Dispensary, Lond., Sec. of; Mr. W. M. Scott, Bridgewater; South Australia, Registrar-General of, Adelaide; Dr. D. A. Stewart, Ninette, Manitoba; Dr. G. A. Stephens, Swansea; Dr. F. Shuffelbotham, Lond.; Dr. G. H. Simmons, Chicago.
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