at the bottom, hanging over the city. The morning was clear and mild, and no other cloud was in sight. Cumulus clouds over fires have frequently been observed, and they have several times received mention in these columns (see SCIENCE, V., N. S., 1897, 60–61, for a good illustration of a cumulus cloud thus formed).

R. DEC. WARD.

HARVARD UNIVERSITY.

PROPOSED UNION OF MEDICAL SOCIETIES IN LONDON.[1]

A MEETING of the General Committee of Representatives of Medical Societies in London was held on July 17 to consider the report of the organizing committee.

Sir William Church, who was in the chair, pointed out that at the first meeting of the members of societies, which was held at the Royal College of Physicians in 1905, the feasibility of union was considered, and that as the outcome of the opinions expressed at that meeting a committee of representatives of the various societies was appointed. The committee of representatives appointed an executive committee to go more thoroughly into the feasibility of union and to outline some scheme of union if such were thought possible. This executive committee reported that a union was feasible on certain lines, and its report was confirmed by the committee of representatives on July 19, 1905. With that report the executive committee's work came to an end, and an organizing committee was appointed to draw up a definite and, as far as possible, a detailed scheme of union. This scheme was before the meeting, and if approved would be sent to the societies to act upon or not as they thought fit. Those societies which approved of the report and decided to join the proposed union would be asked to appoint a representative before December 7 next to sit upon a committee which would act as the first council of the new society and deal with the necessary details of amalgamation.

The report recommended that all male members of those societies which took part in the amalgamation should be permitted to join the new society on its formation as members or fellows without election, and that all women members of a society taking part in the amalgamation should become members of the corresponding section or sections of the new society. It was further recommended that the society should consist of the following sections which represented existing societies, but that the new society should have power to add new sections:

1. Anæsthetic.
2. Balneological and Climatological.
3. Clinical.
4. Dermatological.
5. Diseases of Children.
6. Electro-Therapeutical.
7. Epidemiological.
8. Laryngological.
9. Life Insurance.
10. Medical.
11. Neurological.
12. Obstetrical and Gynæcological.
13. Odontological.
14. Ophthalmological.
15. Otological.
16. Pathological.
17. Surgical.
18. Therapeutical.

It was hoped that in the early future an anatomical and physiological section and a section of preventive medicine might be formed. The Medico-Psychological Association and Medico-Legal Society hoped to join the new society at some future date. It was recommended that each section should be self-governing as far as possible, and should have direct representatives on the council of the society and on the editorial committee, but that its expenditure should be subject to the control of the finance committee of the general council. The general management of the society would be under the control of a general council consisting of the president, the presidents of the various sections, two treasurers, two librarians, two secretaries and eight other fellows.

[1] From *The British Medical Journal.*

CHEAPER LIQUID AIR.

ACCORDING to a consular report recent experiments in England of an invention by Mr. Knudsen, a Dane, furnished liquid air at

one sixth of the present market price, and give promise of an ultimate low price of a fraction over two cents per gallon. The result is secured by purely mechanical means, without an atom of added chemicals. Atmospheric air is first purified and then compressed by stages to 2,500 pounds to the square inch. It is finally reduced to 125 pounds to the square inch, which then cools and liquefies the high-pressure air. The oxygen gas produced by separating the nitrogen from the liquid air is claimed to be purer than that of the old method, and can be supplied in the liquid as well as in the gaseous form. One gallon of liquid air equals approximately 128 cubic feet of oxygen gas, which retails at six cents per cubic foot. The new price is one cent. Liquid air has been successfully used in coal as an explosive, being quite safe where fire damp and other explosive gases exist. Liquid oxygen is also used for welding steel pipes, boiler shells and plates for shipbuilding instead of riveting. That oxygen and nitrogen can be separated from liquid air and sold retail at $1.20 per gallon shows great commercial possibilities. The use of nitrogen for agricultural purposes opens yet another field. The maturing of liquors will be helped by liquid air, as also the preservation and purification of milk. As a motive power its use is considered to be quite practicable for small powers. The British government is already carrying out a number of experiments with a view to the utilization of liquid air for various purposes.

RADIUM.[1]

I venture to think that the thanks of the public are due to Lord Kelvin for his timely and outspoken protest against the conclusion being drawn, from the evidence at present before us, that it is proved that there is a 'gradual evolution of one element into others.' No one has yet handled 'radium' in such quantity or in such manner that we can say what it is precisely. That helium can be obtained from 'radium' appears to be proved; but no proof has yet been given that it is not merely contained in it. As I remarked at York last week, physicists are strangely innocent workers; formulæ and fashion appear to exercise an all-potent influence over them. There was a time when the expression 'scientific caution' meant the highest degree of caution, and it was supposed to be the attribute of workers in science. Workers in the radium school appear to have cast caution to the winds and to have substituted pure imagination for it. Among ourselves, we should always be at liberty to postulate the most crack-brained of hypotheses, to dream the wildest of dreams, as a means of guiding inquiry; but we should not court popularity on such a basis. By so doing we lose all claim to guide public opinion.

HENRY ARMSTRONG.

I am glad to have contributed towards eliciting Lord Kelvin's views on this subject. Those interested will no doubt judge for themselves whether or not the precautions adopted by Ramsay and Soddy, Himstedt and Meyer, and Curie were such as to make it certain that helium is continuously evolved from radium, as those writers supposed.

As to the internal heat of the earth, Lord Kelvin quotes the generally accepted conclusion that the life of radium is limited to a few thousand years. From this he argues that the radium now in existence has not been there long enough to heat the earth to its present high internal temperature. To this I reply that it is true that the actual radium now in existence has not done the work throughout, but that the supply of radium in the earth is maintained at a constant level by the production of fresh radium by uranium, contained in a small proportion in the rocks. Lord Kelvin, anticipating this reply, expresses his dissent from the view, current among workers on radioactivity, that radium is continuously produced by uranium. I should like to ask a simple question. Lord Kelvin disbelieves that radium is being generated from any parent substance. How does he explain the existence of radium in the earth at present? On his own showing the identical radium now existing has not been there long. Is he prepared to assume that it was miraculously created in comparatively recent times?

R. J. STRUTT.

In your yesterday's issue I see letters of Sir Oliver Lodge and Mr. R. J. Strutt, replying to

[1] Correspondence in the London *Times*, called forth by a letter from Lord Kelvin, reprinted in the issue of SCIENCE for August 24, p. 255.