

Later.—The Finlay ephemeris needs corrections of  $-24m$ . R.A.,  $-3^{\circ}$  decl.

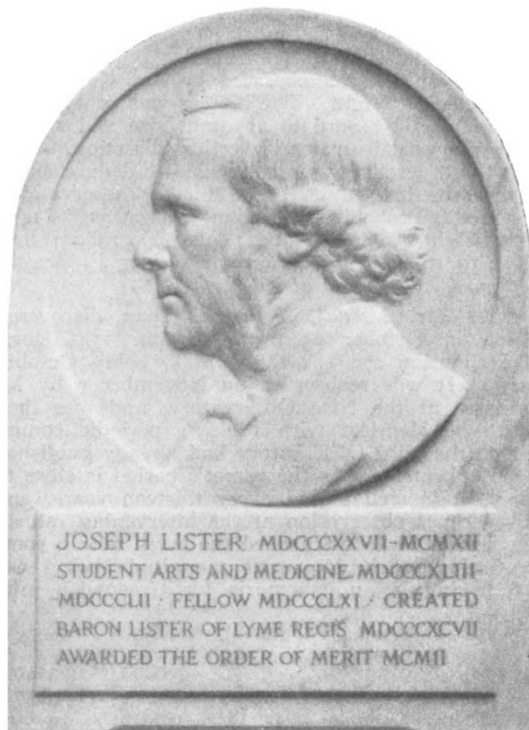
M. Ebell gives the following orbit of Kopff's comet 1919a, from observations 1919 July 31, August 20, September 16 (*Ast. Nach.*, 5016):—

T = 1919 June 28 <sup>h</sup> 21 <sup>m</sup> 0 <sup>s</sup> G.M.T.	$\phi = 30^{\circ} 56' 40.6''$
$\omega = 19^{\circ} 43' 51.0''$	$\mu = 538.904''$
$\Omega = 263^{\circ} 48' 51.4''$ } 1919 <sup>o</sup>	$\log a = 0.545664$
$i = 8^{\circ} 41' 30.1''$	Period = 6.5841 years

The mean observed period between 1906 and 1919 is 6.5766 years.

### UNVEILING OF LISTER MEMORIAL TABLETS.

BRIEF mention was made last week of the unveiling at University College, London, of two bas-relief tablets in memory of Lord Lister, one of the most distinguished *alumni* of the college. There were present the Duke of Bedford (president of the Lister Memorial Committee), the president of the Royal Society, the president of the Royal College of Surgeons, Sir William Lister, the Misses Lister, and Miss Godlee (relatives of the late Lord Lister), the



Lister Memorial Tablet at University College, London. A similar tablet has been secured for University College Hospital, where Lister was student and house surgeon in 1843-52.

Vice-Chancellor of the University, the Provost of University College and Lady Foster, Sir John Bradford, Sir George Thane, Sir Thomas Barlow, Sir John Tweedy, Sir Ernest Hatch, and many others. The proceedings were opened by the Duke of Bedford, who referred to Lister's connection with University College, and commented upon the great value of Lister's presence in the House of Lords. Before unveiling the tablet destined to be erected at University College Hospital, where Lister was once house surgeon, Sir George Makins outlined the main events of Lister's life, the success of which was due to his thorough training as a student. Sir

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Joseph Thomson unveiled the tablet for University College. He said that Lister, one of the glories of British science, began his connection with the Royal Society at the early age of thirty-three, when he was elected a fellow. During Lister's five years' tenure of the presidency of the society much excellent administrative work was carried out, and this epoch saw the inception of several famous biological investigations organised by the society. The Provost (Sir Gregory Foster) then invited Sir Edwin Cooper Perry (the Vice-Chancellor), Sir George Thane, Sir Ernest Hatch, and Mr. Raymond Johnson to accept the tablets on behalf of the bodies they represented. Sir George Thane, in reply, mentioned that University College had that day been presented with one of Lister's prizes received whilst a student, and he expressed the hope that owners of Lister mementoes might present them to the college. On behalf of the memorial committee Sir John Tweedy conveyed the thanks of the subscribers to the sculptor, Prof. Havard Thomas.

### THE BRITISH ASSOCIATION AT BOURNEMOUTH.

#### SECTION I.

##### PHYSIOLOGY.

OPENING ADDRESS (ABSTRACTED) BY PROF. D. NOËL PATON, M.D., F.R.S., PRESIDENT OF THE SECTION.

IN the advance of every science certain difficulties and dangers which must be encountered tend to make the progress of knowledge somewhat devious, somewhat zigzag in character.

(1) The study of the metabolism of proteins in the animal body, especially when they are considered as a source of energy, illustrates this in a striking manner. Liebig's teaching insisted on their prime importance. The investigations of Voit and of Fick and Wislicenus—unsatisfactory as the latter were—caused a swing to the other extreme, to the view that carbohydrates, not proteins, are the main source of energy. The work of Pflüger and of his school brought about a temporary swing back to Liebig's teaching. Only when it became possible to study the respiratory exchanges along with the excretion of nitrogen was a true knowledge gained of the relative importance of proteins and of the other two proximate principles.

(2) As regards the use of proteins in the building and repair of the tissues, progress has been more direct, and has ultimately led to the recognition of the importance of the constituent amino-acids as the "building stones" of the proteins. In this connection the importance of the diamino-acids lysin, histidin, and arginin must be recognised. Their presence has been shown to be necessary for growth. The presence of guanidin in the arginin molecule requires more attention than it has yet received.

(3) An aspect of protein metabolism which has been more recently elucidated is the physiological activity of the constituent amino-acids in explaining the stimulating action—the specific dynamic action—of proteins upon the general metabolism and upon heat production.

The evidence of whether guanidin may be a product manifesting a physiological action in the body is worthy of study. The investigations of Kossel and Dakin and the earlier work of Thompson do not negative the probability of the liberation of guanidin from arginin in muscle, while the more recent work of Inouye and of Thompson indicate that guanidin may be split off from arginin. The formation of guanidin, either free or combined, from non-protein sources was demonstrated by Burns to occur in the hen's egg during