in effect given in Sarrer's Algebra, and the solution is wonderfully simple. Write \(a, b, c, d = a', b', c', d'\), then the equations

\[
\begin{aligned}
\frac{1}{2} + x &= \frac{1}{2} + y = \frac{1}{2} + z = \frac{1}{2} + w = 1 - a', \\
\frac{1}{2} + x &= \frac{1}{2} + y = \frac{1}{2} + z = \frac{1}{2} + w = 1 - b', \\
\frac{1}{2} + x &= \frac{1}{2} + y = \frac{1}{2} + z = \frac{1}{2} + w = 1 - c', \\
\frac{1}{2} + x &= \frac{1}{2} + y = \frac{1}{2} + z = \frac{1}{2} + w = 1 - d',
\end{aligned}
\]

giving of \(a' = b' = c' = d' = 1\), and \(a + b + c + d = 0\), whereas \(a'' + b'' + c'' + d'' = 0\), the condition, \(a'' + b'' + c'' + d'' = 0\) of the third order \(p_3 = a'x + b'y + c'z + d'w\) is a good deal that is pretty in the working out.

Eötvös' theory of the eigensystems of a plane quartic—see my solution at end of Salmon's P. C. O. but a slight change of notation gives a different context to the solution: take \(x, y, z, w, x', y', z', w'\), arbitrary \(f_1 = 1\), and then the best three of the following seven equations determine \(x', y', z', w'\) as linear functions of \(x, y, z, w\), and it is possible to determine and that in one way only \(a, b, c, d, x, y, z, w\) of the equations determine \(x', y', z', w'\), in terms of \(x, y, z, w\), and the constant.

A consequence of the change is that it appears that one of the eigensystems can be expressed as such of them in a double form, i.e., the two equations

\[
\begin{aligned}
a_1x + b_1y + c_1z + d_1w &= 0, \\
a_2x + b_2y + c_2z + d_2w &= 0,
\end{aligned}
\]

can be expressed very simply in terms of \(x, y, z, w\), and the constants.

A consequence of the change is that it appears that one of the eigensystems can be expressed as such of them in a double form, i.e., the two equations

\[
\begin{aligned}
a_1x + b_1y + c_1z + d_1w &= 0, \\
a_2x + b_2y + c_2z + d_2w &= 0,
\end{aligned}
\]

represent one and the same double tangent [in fact we get each of these equations, and see in all \(22 + 6 + 6 = 34\). 5 double tangents too many, if they were not identical], but then the posterior determination of the identity of the two equations is not by any means easy.

Next, the writing the idea developed across me that the former referred to the linear quartic surface, etc., etc., which is in fact, that the linear quartic contained the linear tangents and the two equations of the quartics (of these there may be \(a, b, c, d\), such that identically

\[
\begin{aligned}
a_1x + b_1y + c_1z + d_1w &= 0, \\
a_2x + b_2y + c_2z + d_2w &= 0,
\end{aligned}
\]

then the quartic surface \(x + y + z + w = 0\), has the 16 singular tangent planes:

\[
\begin{aligned}
x + y + z + w &= 0, \\
x + y + z + w &= 0, \\
x + y + z + w &= 0, \\
x + y + z + w &= 0,
\end{aligned}
\]

I gave some time up in the Proc. L. M. S., I have just revived it, and I H. Cotton: 1 "a" "b", "c", "d", are not identical; they are the linear tangent planes of the quartics, which I was about to use instead of the "essential singular points" of Weierstrass, etc., and not algebraically identical, such as \(a = 0\) for \(b = 0\) is "essential"—a function in general has thus many plane, etc., etc.

[Extract from a letter of Professor Cayley to Dr. Franklin, read at the meeting of the University Mathematical Society, February 21, 1892.]

It is I think noticeable that your theory in connexion with the product \(1 - x, 1 - y, 1 - z, 1 - w\) does something more than group the partitions into pairs. In addition to the existing division \(E + E\) of the partitions into even and odd, it establishes a new division \(E + D\) of the same partitions into irreducible and reducible. There is thus a fourfold division.

\[
E \text{ or } D = E \text{ or } D\]

For instance, if \(N = 10\), the arrangement is

\[
\begin{aligned}
E + D + E + D + E + D + E + D + E + D, \\
E + D + E + D + E + D + E + D + E + D, \\
E + D + E + D + E + D + E + D + E + D, \\
E + D + E + D + E + D + E + D + E + D, \\
E + D + E + D + E + D + E + D + E + D, \\
E + D + E + D + E + D + E + D + E + D, \\
E + D + E + D + E + D + E + D + E + D, \\
E + D + E + D + E + D + E + D + E + D, \\
E + D + E + D + E + D + E + D + E + D, \\
E + D + E + D + E + D + E + D + E + D,
\end{aligned}
\]

where the \(E\) and \(D\) taken in order pair with each other, and similarly the \(D\) and \(E\).

The case for the exceptional numbers \(N = 1, 2, 3, 4, 5, 6, 8\), etc., there is just one partition which is neither \(E\) or \(D\) and according as it is \(E\) or \(D\) we have in the product a coefficient of 

\[
E \text{ or } D\]

A Note from Professor Sylvester

March 9, 1892.

My attention has been called to an apparent contradiction between an error which I inserted on page 61 of the Circle and a remark made in a previous number (20, Jan., 1892). I think the enquiring copyist will disregard the point I desire to make in due appreciation. I think (on the evidence) it is possible to understand that it is Mr. Price's statement and not mine that the "sermo" in question is to be derived from his Logic of Relatives. I certainly knew what he had told me and should insist implicitly on it unless I have been misinformed from him, but here is not the knowledge which would come from myself having found in his Logic of Relatives the forms referred to as previously stated. I have not read his Logic of Relatives and am not acquainted with its contents.

J. J. S.

A Communication from the Rev. Mr. Price

Readers of Professor Sylvester's communication entitled "Evocies" in the last number of these Circle have probably inferred that my conduct in the matter referred to had been unfavourable. Professor Sylvester's "Evocies" refers to "his Word upon Nothing," printed in the Johns Hopkins University Circulars No. 17, p. 212. In that article appears the extract:

"Thus arises [i.e., a certain group of nine terms is brought to the subject of Nothing] as derived from an algebra given by Mr. Charles S. Peirce, [Logic of Relatives, 1881."

The object of Professor Sylvester's "Evocies" would seem to be to say that Fishman was lost to me in his exposed without his knowledge or authority on the occasion of the proof being unsatisfactory to me; to apply a "sermo", and to separate the sentence, because he "lacked nothing whatever" of the facts drawn.

I think this time Professor Sylvester's meaning is made clear by simply citing the following incisiveness of Professor Sylvester himself, printed in the Johns Hopkins University Circulars, No. 15, p. 201:

"Mr. Sylvester remarks: 1... that he had given a system of "words on a system of Nothing, etc., etc., to the Honorable Members...", "Mr. Charles S. Peirce, it should be said, to the certain knowledge of Mr. Sylvester to arrive at the same result many years ago in connexion with his theory of the logic of relatives... but the result had been published by Mr. Price, he was told, to say.""

This being so, I think that the essential of Professor Sylvester's publishing these forms I was entitled to some information, if I had already published them, and a "sermo" (if I did not). When the gentleman put his hands in my hands, the required mode to me, by an oral or written, was not simply to reply a "sermo" but to express a statement relating to my work in the body of the text. And I find no reason to say that having thus submitted his text to me, Professor Sylvester would omit to hold at his proof sheet after it left up to date, whether or not it be approved, of some attention as I might have proposed. At any rate, when from these "words" Professor Sylvester's "Word upon Nothing," had been published with the above statement concerning me, I would have had too much to expect that he should take the trouble to refer to my mode in order to see whether the statement was not after all true, before publicly protesting against it.
is in effect given in Serret's Algebra, and the solution is wonderfully simple.

Write \( A, B, C = ac - bc, ad - bd, bd - ca, \lambda = \sqrt{-\frac{3}{2}}, \Omega \) the discriminant \( \Delta = \lambda a^2 + \text{c.c.} \), then the values are

\[
\begin{align*}
\alpha &= \frac{-2\sqrt{\Delta} + B}{2\sqrt{\Delta}}, \\
\beta &= \frac{2C}{2\sqrt{\Delta}}, \\
\gamma &= \frac{-2A}{2\sqrt{\Delta}}, \\
\delta &= \frac{2C}{2\sqrt{\Delta}},
\end{align*}
\]

giving \( \alpha \beta = 1 = a + b \) and \( a + \beta = -1 \), whence \( a\alpha + b\beta + \gamma = 0 \), the condition for \( a\alpha + b\beta + \gamma \) periodic of the third order \( a\alpha + \beta = x \). There is a
good deal that is pretty in the working out.

2nd. Riemann's theory of the bisectors of a plane quartic—see my addition at end of Salmon's H. P. C.—but a slight change of notation gives an additional symmetry to the solution; take \( a_3, a_4, a_5, b_3, b_4, b_5, c_3, c_4, c_5 \), arbitrary \( f_1 = \frac{1}{a_3} \), c.c., then the first three of the following four equations determine \( \xi, \eta, \zeta \) as linear functions of \( x, y, z, t \) and it is possible to determine and that in one way only \( a_3, a_4, a_5, b_3, b_4, b_5, c_3, c_4, c_5 \), and so as to satisfy the fourth equation

\[
\begin{align*}
a_3x^2 + b_3y^2 + c_3z^2 + f_3x + g_3y + h_3z &= 0, \\
a_4x^2 + b_4y^2 + c_4z^2 + f_4x + g_4y + h_4z &= 0, \\
a_5x^2 + b_5y^2 + c_5z^2 + f_5x + g_5y + h_5z &= 0,
\end{align*}
\]

and the being \( c_6 \), the equations of the 28 bisectors of the curve

\[ \sqrt{x^2} + \sqrt{y^2} + \sqrt{z^2} = 0, \]

can be expressed very simply in terms of \( x, y, z, t, u, v, \xi, \eta, \zeta \), and the constants.

In consequence of the change it appears that six of the bisectors can be expressed each of them in a double four, viz., the two equations

\[
\begin{align*}
\xi & = \sqrt{x^2} + \sqrt{y^2} + \sqrt{z^2} = 0, \\
\eta & = \sqrt{x^2} + \sqrt{y^2} + \sqrt{z^2} = 0,
\end{align*}
\]

represent one and the same double tangent (in fact we get each of these equations, and so in all 22 + 6 + 6 = 34, 6 double tangents too many, if the two were not identical), but the a posteriori verification of the identity of the two equations is not by any means easy.

Since this writing the idea flashed across me that the same formulae apply to the 14-nodal quartic surface, viz., if \( x, y, z, \xi, \eta, \zeta \), are linear functions of four coordinates (of course these may be \( x, y, z, t \) such that identically

\[
\begin{align*}
x + y + z + \xi + \eta + \zeta &= 0, \\
ax + by + cz + \xi + \eta + \zeta &= 0,
\end{align*}
\]

then the quartic surface \( \sqrt{x^2} + \sqrt{y^2} + \sqrt{z^2} = 0 \), has the 16 singular tangent planes

\[
\begin{align*}
x = 0, & \quad y = 0, \quad z = 0, \quad \xi = 0, \quad \eta = 0, \quad \zeta = 0, \\
x + y + z = 0, & \quad ax + by + cz = 0, \\
x + y + z = 0, & \quad \xi + \eta + \zeta = 0, \\
x + y + z = 0, & \quad ax + by + cz = 0, \\
x = y + z = 0, & \quad ax + by + cz = 0,
\end{align*}
\]

\( i, e, \) it is a 16-nodal surface. I have identified the form with one which I gave some time ago in the Proc. L. M. S.

I have just received No. 50 of the J. H. Circular: "infinity" or "pole" is the French expression for your infinity-root—a word which occurred to me instead of the "essential singular point" of Weierstrass, \( i.e. \), a non-algebraical infinity [such as \( x = 0 \) for \( \log x \)] is a "chasm"—a function in general has thus roots, poles, and chasms.

---

**A Communication from Professor Sylvester.**

March 29, 1852.

My attention has been called to an appearance of contradiction between an erratum which I insert on page 49 of the *Circles* and a reminder of mine in a previous number (No. 15, May 1851). I think the seeming discrepancy will disappear if the point I desire to make is duly apprehended. I wished (as I still wish) it to be understood that it is Mr. Peirce's statement and not mine that the "forms" in question can be derived from his Logice of Relatives. I certainly know what he has told me and should attach implicit credit to any statement emanating from him, but have not the knowledge which would come from having myself found in his Logice of Relatives the forms referred to: as previously stated I have not read his Logice of Relatives and am not acquainted with its contents.

J. J. S.

---

**A Note from Professor Sylvester.**

Readers of Professor Sylvester's communication entitled *Erratum* in the last number of these Circles have perhaps inferred that my conduct in the matter there referred to had been in fault. Professor Sylvester's *Erratum* relates to his "Word upon Nonions," printed in the Johns Hopkins University Circulars No. 17, p. 242. In that article appears this sentence: "These forms (i.e. a certain group of nine forms belonging to the algebra of Nonions) can be derived from an algebra given by Mr. Charles S. Peirce, (Logice of Relatives, 1850)." The object of Professor Sylvester's "Erratum" would seem to be to say that this sentence was inserted by me in his proof-sheets without my knowledge or authority on the occasion of the proof being submitted to me for supply a reference, and to repudiate the sentence, because he "knows nothing whatever" of the fact stated.

But I think this view of Professor Sylvester's meaning is refuted by simply citing the following testimony of Professor Sylvester himself, printed in the Johns Hopkins University Circulars, No. 15, p. 203.

"Mr. Sylvester mentioned . . . that . . . he had come upon a system of Nonions, the exact analogues of the Hamiltonian Quaternions . . . Mr. Charles S. Peirce, it should be stated, had to the certain knowledge of Mr. Sylvester arrived at the same result many years ago in connection with his theory of the *logic* of relatives; but whether the result had been published by Mr. Peirce, he was unable to say."

This being so, I think that on the occasion of Professor Sylvester's publishing these forms I was entitled to some mention, if I had already published them, and a *fortiori* if I had not. When the proof-sheets was put into my hands, the request made to me, by an oral message, was not simply to supply a reference but to correct a statement relating to my work in the body of the text. And I had no reason to suppose that having thus submitted his text to me, Professor Sylvester would omit to look at his proof-sheets if he left my hands to see whether or not he approved of such alteration as I might have proposed. At any rate, when these causes Professor Sylvester's "Word upon Nonions" had been published with the above statement concerning me, would it have been too much to expect that he should take the trouble to refer to my memoir in order to see whether the statement was not after all true, before publicly protesting against it?
I will now explain what the system of Nonions consists in and how I have been concerned with it.

The calculus of Quaternions, one of the greatest of all mathematical discoveries, is a certain system of algebra applied to geometry. A quaternion is a four-dimensional quantity; that is to say, its value cannot be precisely expressed without the use of a set of four numbers. It is much as if a geographical position should be expressed by a single alphabetical letter; the value of this letter could only be defined by the use of two numbers, say the Latitude and Longitude. There are various ways in which a quaternion may be conceived to be measured and various different sets of four numbers by which its value may be defined. Of all these modes, Hamilton, the author of the algebra, selected one as the standard. Namely, he conceived the general quaternion \( q \) to be put into the form

\[
q = xi + yj + zk + w,
\]

where \( x, y, z, w \) are four ordinary numbers, while \( i, j, k \) are peculiar units, subject to singular laws of multiplication. For \( ij = -ji \), the order of the factors being material, as shown in this multiplication table, where the first factor is entered at the side, the second at the top, and the product is found in the body of the table.

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As long as \( x, y, z, \) and \( w \) in Hamilton's standard tetranomial form are confined to being real numbers, as he usually supposed them to be, no simpler or more advantageous form of conceiving the measurement of a quaternion can be found. But my father, Benjamin Peirce, made the profound, original, and pregnant discovery that when \( x, y, z, w \) are permitted to be imaginaries, there is another very different and preferable system of measurement of a quaternion. Namely, he showed that the general quaternion, \( q \), can be put into the form

\[
q = xi + yj + zk + w,
\]

where \( x, y, z, w \) are real or imaginary numbers, while \( i, j, k, l \) are peculiar units whose multiplication obeys this table.

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<td>-i</td>
<td>1</td>
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<td>k</td>
<td>1</td>
<td>l</td>
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<td>l</td>
<td>-k</td>
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<td>l</td>
<td>1</td>
</tr>
</tbody>
</table>

A quaternion does not cease to be a quaternion by being measured upon one system rather than another. Any quantity belonging to the algebra is a quaternion; the algebra itself is "quaternions." The usual formulae of the calculus have no reference to any tetranomial form, and such a form might even be dispensed with altogether.

While my father was making his investigations in multiple algebra I was, in my humble way, studying the logic of relatives and an algebraic notation for it; and in the ninth volume of the Memoirs of the American Academy of Arts and Sciences, appeared my first paper upon the subject. In this memoir, I was led, from logical considerations that are patent to those who read it, to endeavor to put the general expression of any linear associative algebra into a certain form; namely as a linear expression in certain units which I wrote thus:

\[
\begin{align*}
(u_{1} : u_{2}) & = (u_{2} : u_{1}) , \ldots \\
(u_{2} : u_{3}) & = (u_{3} : u_{2}) , \ldots \\
(u_{3} : u_{4}) & = (u_{4} : u_{3}) , \ldots \\
\ldots & = \ldots
\end{align*}
\]

These forms, in their multiplication, follow these rules:

\[
(u_{a} : u_{b})(u_{b} : u_{c}) = (u_{a} : u_{c}) ,
\]

\[
(u_{b} : u_{c})(u_{c} : u_{d}) = 0.
\]

I said, "I can assert, upon reasonable inductive evidence, that all such algebras can be interpreted upon the principles of the present notation in the same way," and consequently can be put into this form. I afterwards published a proof of this. I added that this amounted to saying that "all such algebras are complications and modifications of the... Hamilton's quaternions." What I meant by this appears plainly in the memoir. It is that any algebra that can be put into the form proposed by me is thereby referred to an algebra of a certain class (afterwards named quadrites by Professor Clifford) which present so close an analogy with quaternions that they may all be considered as mere complications of that algebra. Of these algebras, I gave as an example, the multiplication table of that one which Professor Clifford afterward named nonions. This is the passage:

"For example, if we have three classes of individuals, \( u_{1}, u_{2}, u_{3} \), which are related to one another in pairs, we may put

\[
\begin{align*}
(u_{1} : u_{2}) & = 1 ,
(u_{1} : u_{3}) = 1 ,
(u_{2} : u_{3}) = 1 ,
(u_{3} : u_{2}) = 1 ,
(u_{2} : u_{1}) = k ,
(u_{3} : u_{1}) = m ,
(u_{3} : u_{2}) = p ,
(u_{1} : u_{3}) = q ,
\end{align*}
\]

and by (155) we get the multiplication table

\[
\begin{array}{c|cccccccc}
\hline
i & j & k & l & m & n & o & p & q \\
\hline
j & 0 & 0 & 0 & i & j & k & 0 & 0 \\
0 & i & 0 & j & k & -l & -m & -n & 0 \\
i & k & -j & 0 & 0 & 0 & 0 & 0 & 0 \\
l & m & n & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline
\end{array}
\]

It will be seen that the system of nonions is not a group but an algebra; that just as the word "quaternion" is not restricted to the three perpendicular vectors and unity, so a nonion is any quantity of this nine-fold algebra.

So much was published by me in 1870; and it then occurred either to my father or to me (probably in conversing together) that since this algebra was thus shown (through his form of quaternions) to be the strict analogue of quaternions, there ought to be a form of it analogous to Hamilton's standard tetranomial form of quaternions. That form, either he or I certainly found. I cannot remember, after so many years, which first looked for it; whichever did must have found it at once. I cannot tell what his method of search would have been, but I can show what my own must have been. The following course of reasoning was so obtrusive that I could not have missed it.

Hamilton's form of quaternions presents a group of four square-roots of unity. Are there, then, in nonions, nine independent cube-roots of unity, forming a group? Now, unity upon my system of notation was written thus:

\[
(u_{1} : u_{2}) + (u_{2} : u_{3}) + (u_{3} : u_{1}).
\]

Two independent cube-roots of this suggest themselves at once, they are

\[
(u_{2} : u_{3}) + (u_{3} : u_{2}) + (u_{3} : u_{1})
\]

\[
(u_{2} : u_{3}) + (u_{3} : u_{2}) + (u_{1} : u_{3}).
\]

In fact those are hinted at in my memoir, p. 55. Then, it must have immediately occurred to me, from the most familiar properties of the imaginary roots of unity, that instead of the coefficients

\[
1, 1, 1
\]

or

\[
1, \varphi, \varphi^{2}, \varphi
\]

where \( \varphi \) is an imaginary cube-root of unity. The nine cube-roots of unity

*It would have been more accurately analogical, perhaps, to call it nonions.
thus obtained are obviously independent and obviously form a group. Thus the problem is solved by a method applicable to any other quadrate.

My father, with his strong partiality for my performances, talked a good deal about the algebra of notions in general and these forms in particular; and they became rather widely known as mine. Yet it is clear that the only real merit in the discovery lay in my father's transformation of quaternions. In 1876, when I was in Germany, my father wrote to me that he was going to print a miscellaneous paper on multiple algebra and he wished to have it accompanied by a paper by me, giving an account of what I had found out. I wrote such a paper, and sent it to him; but somehow all but the first few pages of the manuscript were lost.

A NOTE ON THE WORD "SOFY" IN SHAKESPEARE'S TWELFTH NIGHT.

Act II, sc. 6, 1595: Fabian. I will not give my part of this sport for a pension of thousands to be paid from the Sofy.

Act III, sc. 4, 265: Sir Toby. They say he has been fencer to the Sofy.

These passages are well illustrated in a letter of a contemporary of Shakespeare, the Italian traveller, Pietro Della Valle.* The letter is dated Isaphan, March 17, 1617, less than a year after Shakespeare's death, and goes into much detail about the origin of the word "Sofy," which was a dynastic title, and hence disappeared with the extinction of the dynasty (vol. I, p. 464 of the Brighton ed. of 1843). Especially interesting is what Pietro has to say about Sir Robert Shirley, whose adventures in Persia had made the Sofy so familiar a name in England. The sheh, he says, always wears a red cap, "like the other guzushez, or Turkoman soldiers," on certain solemnities. This is called tag or crown, and is the sign of belonging to the military and the nobility. This tag is sometimes conferred on foreigners who take service with the king, "just as an order of knighthood with us," but this happens seldom, and a well informed person told Pietro that he had seen it conferred only once in fifteen years. The bestowal of the tag is accompanied with great ceremonies, the king putting his own tag on the person who is to receive the honor. And now we will let Pietro tell the Shirley story in his own sour-sweet way:

"In questo modo fu dato il tag a quel don Roberto Seraly Inghese, che gli anni passati venne in Roma ambasciatore di questo re papa Paolo, e adesso torna un'altra volta a tutti i principi della cittadina; ed ho inteso qui che don Roberto lo domandò: ma lo a dire il vero, non solo nondimeno gli men mai tal cosa al re di Persia, ma mi dispiacebbe sopra modo quando egli me l'offerisse; perché non so come un cristiano possa legittimamente portar quel' insegna, che, insieme con l'onorevole della militare nobilità, ha congiunto anche in sé non posto del superstitioso della falsa loro setta; onde, per rimediare a ciò, conforme lo penso, don Roberto intendendo che in cristianità soleva portarsi in cima una croce. Ma oltre di questo, lo non tengo che un Franco dobbia amare di portare un' insigne d'onore, che è comune a molte migliaia di schiavi e di soldati ordinari; però per chi avesse voglia di vivere in Persia, come forse deve averlo il detto don Roberto, potrebbe passar per cosa, so non desiderabile, almeno onorata."

Pietro was averse to personal display and he might after all have consented to adorn his head as, at an earlier period of his travels, he had contrived to adorn his heels. Being in Constantinople he found that it was the fashion to have boot-heel shoes with miniature horseshoes, and so he had his boot-heel shoes, not with iron but with silver, a bit of danziam, which, as he remarks complacently (vol. II, 87) was sufficiently conspicuous, and very cheap.—(eh per essa cosa insolita e neppure dall' istesso principe usata, con poca spesa in ciò to feci parere una galleria assai riguardevole).

B. L. G.

*Pietro Della Valle, characterized by Gibbon (c. xxiv) as "an intelligent man, a gentleman and a scholar, but intolerably vain and profuse," was born in Rome, April 11, 1586, and died in the city of his birth, April 21, 1652. He was a great traveller, for his time, and out of the heap of curious details much interesting matter might be sifted.

A letter has been received from Dr. C. S. Hastings, dated Callao, March 21, 1883. He had just arrived at Callao and expected to leave, March 22, on the U. S. steamer Hartford for the Caroline Islands, the point selected for the observation of the eclipse of May 6.

SIDNEY LANIER MEMORIAL FUND.

Mr. Lawrence Turnbull, treasurer of the committee of the Sidney Lanier Memorial Fund, makes the following report:

"The friends of the late Sidney Lanier collected the sum of $8,250, as a tribute of affection and honor, to be used for the benefit of his family. Of this amount, a concert in Baltimore yielded $543.56, and a reading by Mr. Victor Riguero yielded $46.50. A concert in Augusta, Ga., yielded $231.00. A concert in Macon, Ga., yielded $208.25. The remainder was contributed by individuals in sums varying from $5 to $500.

Baltimore contributed in all, — — $4,556.56
New York " " " 75.60
Philadelphia " " " 545.00
Boston " " " 350.00

and there were scattering subscriptions from Newport, New Orleans, Charleston, North Carolina, and Texas.

The Committee in charge, after consultation, placed the fund in the hands of one of their number as trustee, to be put at interest and disbursed for the benefit of Mr. Lanier's family in annual instalments.

For the Committee,

L. TURBULL."

In this connection, it may be mentioned that by an additional contribution of some of the friends of Mr. Lanier, a memorial tablet has been placed in Hopkins Hall, bearing this inscription:

Aspicio dum Essepro
SIDNEY LANIER
Poet
Lectured here on Literature, 1879-1881.

COMMEN SEATION DAY.

The twenty-second day of February, 1883, was observed according to usage as the Commemoration Day of the University. The public exercises of the day were held in Hopkins Hall at four o'clock in the afternoon. Brief addresses were made by President Gilman, and by Professor C. A. Young, of Princeton College. An announcement of the establishment by the Trustees of eighteen Honorary Hopkins Scholarships was made by the Hon. George William Brown, Chairman of the Executive Committee.

The degree of Doctor of Philosophy was conferred upon two candidates, viz:

Kakichi Mitsukuri, (Ph. B., Yale College, 1879), who here pursued studies in Biology and has since been called to the Professorship of Zoology in the University of Tokio, Japan. His thesis on "The Structure and Significance of some Aberrant Forms of Lamellibranchiate Gills," has been published in the Monthly Journal of Microscopical Science.

Bernard F. O'Connor, (Inch. es Lettres, Université de France, 1874). His principal study was the Romance Languages, the subordinate, Latin. He submitted a thesis on "The Syntax of Ville-Hardouin."

The principal address by the Hon. S. Tusek Wallis was a discussion of the Johns Hopkins University in its relation to Baltimore. It has been printed in pamphlet form.

In the evening, there was a social assembly of the officers and students and their friends. The library and halls of the University were thrown open to a company of gentlemen and ladies, several hundred in number.
A NOTE ON THE WORD "SOPHIE" IN SHAKESPEARE'S TWELTH NIGHT.

Johns Hopkis. [No. 22.]

Mr. Lawrence Turnbull, treasurer of the committee of the Sidney Lanier Memorial Fund, made the following report:

The friends of the late Sidney Lanier collected the sum of $10,000, as a tribute of affection and honor, to be used for the benefit of his family. Of this sum, $5,000 was received in New York, and a reading by Mr. Victor Borge yielded $500. A concert in Augusta, Ga., yielded $200. A concert in New York yielded $210. The remainder was contributed by individuals in various ways, $1,500 being raised in Baltimore, Md., $150 in New York, and $100 in Philadelphia.

In this manner, in addition to the sale of several of Mr. Lanier's letters, and the sale of materials for the benefit of his family, the committee have raised $5,000 for the purpose of establishing a memorial to Mr. Lanier's memory.

Sidney Lanier Memorial Fund.

Lanier's personal tablet was lost in Bermuda Island last year, and a memorial to his name was inscribed on it.

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