vestigates a formula geometrically, to express the ellipticity in terms of such difference; and thus by accurate observations of Foucault's pendulum in different parts of the earth, he conceives the ellipticity might be determined.

As an instance, he cites Foucault's result for the latitude of Paris; which differs by a small amount from the formula, and which he considers accordingly to express the ellipticity, though he does not calculate it.

2. "On the Extension of the value of the Base of Napier's Logarithms; of the Napierian Logarithms of 2, 3, 5, and 10; and of the Modulus of Briggs's, or the Common System of Logarithms; all to 205 places of decimals." By William Shanks, Esq. Communicated by G. B. Airy, Esq., Astronomer Royal, F.R.S. &c. Received January 21, 1854.

The author, after referring to the value of π to 527 decimals computed by him and printed in the 'Proceedings,' for January 20, 1853, states that he has very recently extended and computed the values which form the subject of this communication to 205 places of decimals; and as very great care has been taken to exclude error, it is presumed there exist reasonable grounds for pronouncing them quite accurate. At the same time it should be distinctly understood, that *no direct check or proof* has yet been applied to the values in question. He states that the formulæ employed in finding these logarithms, are investigated by Mr. J. R. Young, in his 'Elementary Essay on the Computation of Logarithms,' pp. 13 and 14, and he considers that no better formulæ than these have yet been published for readily computing, *to a great extent*, the Napierian logarithms of 2, 3, 5, 7, &c.

Subjoined are the values referred to:—

Base of Napier's Logarithms =

2·7182818	2845904	5235360	2874713	5266249
7757247	0936999	5957496	6967627	7240766
3035354	7594571	3821785	2516642	7427466
3919320	0305992	1817413	5966290	4357290
0334295	2605956	3073813	2328627	9434907
6323382	9880748	2070767	3049394	92+&c.

Napierian Logarithm of 2 =

·6931471	8055994	5309417	2321214	5817656
8075500	1343602	5525412	0679523	5847083
2754439	2266635	5206804	5602137	0371911
8226310	4298719	4582110	0448886	1731607
5101002	4259177	6434321	7424545	3493150
3980048	7339123	6947695	8281006	80+&c.

Napierian Logarithm of 3 =

1·0986122	8866810	9691395	2452369	2252570
4647490	5578227	4945173	4693570	0667031
1626456	2261348	7915959	6453630	4663543
4230252	7148232	3776931	0688498	5615669
0906550	5814573	8582278	9682167	2037498
0000626	1111154	1362298	9315024	24+&c.

Napierian Logarithm of 5 =

1·6094379	1243410	0374600	7593332	2618763
9525601	3542685	1772191	2646780	8257554
5759268	0738412	2078288	5798574	2982618
5124170	8082338	1773353	3644800	7450691
6314333	5570584	1878072	7874564	5612567
3804931	0408586	1451680	3463508	54+&c.

Napierian Logarithm of 10 =

2·3025850	9299404	5684017	9914546	8436420
7601101	4886287	7297603	3326304	4104637
8513707	3005047	7285093	1400711	3354530
3350481	2381057	6355463	4093686	9182209
1415335	9829761	8312394	5299109	9105717
7784979	7747709	8399376	1744515	35+&c.

Modulus of Common System of Logarithms =

·4342944	8190325	1827651	1289189	1660508
2294397	0058036	6656611	4454084	2952103
2056138	9388912	2647096	6953461	1420043
3938056	4705613	4312230	2306044	2927744
1521725	4737266	8184290	1672329	4707564
5865061	2932297	5502468	1291564	99+&c.

The foregoing values are, it is presumed, correct to the last figure inclusive.

February 9, 1854.

SIR FREDERICK POLLOCK, M.A., V.P., in the Chair.

A paper was in part read, entitled "Further researches into the properties of the Sulphate of Iodo-Quinine or Herapathite, more especially in regard to its Crystallography, with additional facts concerning its optical relations." By William Bird Herapath, M.D. Communicated by Golding Bird, M.D., F.R.S. Received Jan. 27, 1854.

February 16, 1854.

COLONEL SABINE, R.A., Treas. and V.P., in the Chair.

Joseph Beete Jukes, Esq., was admitted into the Society.

The reading of Dr. Herapath's paper was resumed and concluded.

After referring to the observations of Professors Stokes and Haidinger, as well as to papers already published by himself on this subject in the Philosophical Magazine, the author gives an account of a set of prisms perfectly complementary in their optical characters to those previously described by him, and proves this fact by an elaborate comparison of their various optical relations; from which it appeared, that whilst the α-prisms (those described in Philosophical Magazine for March 1852) were totally impervious to a beam of polarized light, reflected from glass plates, when the plane of the length of the prism was at right angles to the plane of primitive polarization, the β-prisms (those now examined) were equally ab-