

obtained of considerable size and great lustre, closely resembling chlorate of potassa in appearance. This body also contains sulphur. The second substance, the quantity of which is comparatively small, crystallizes in long thin plates.

The oil, when treated with concentrated sulphuric acid, dissolves with a fine purple colour, and from this solution water precipitates a crystalline body, an organic acid remaining in solution, which forms a crystalline lime-salt.

I have likewise subjected to destructive distillation the sulphobenzolates of lime, ammonia, and copper. The two last yield very different products from the soda-salt.

I am at present engaged in examining these as well as the other bodies mentioned in this Notice, and hope soon to be able to communicate to the Society the results of my investigations.

### III. "Preliminary Note on the Radiation from a Revolving Disk."

By BALFOUR STEWART, M.A., F.R.S., and P. G. TAIT, M.A.

Received February 23, 1865.

The authors having been led by perfectly distinct trains of reasoning to identical views bearing on the dissipation of energy, have had preliminary experiments made on the increase of radiation from a wooden disk on account of its velocity of rotation, both in the open air and *in vacuo*.

These experiments were made with a very delicate thermo-electric pile and galvanometer. In the experiments in the open air the disk was of wood; its diameter was 9 inches, and it was made to rotate with a velocity somewhat less than 100 revolutions in one second.

A sensible effect was produced upon the indicating galvanometer when the disk was made to rotate, and this effect appeared to be due to radiation, and not to currents of air impinging against the pile. In amount it was found to be nearly the same as if the disk had increased in temperature  $0^{\circ}\cdot75$  Fahr.

In the experiments *in vacuo* the diameter of the wooden disk was over 12 inches; its velocity of rotation was about 100 revolutions in one second, and the pile was nearer it than when in air. Under these circumstances, with a vacuum of 0·6 in., an effect apparently due to radiant heat was obtained, amounting to nearly the same as if the disk had increased in temperature  $1^{\circ}\cdot5$  Fahr.

Bearing in mind the increased diameter of the disk, the effect is probably equivalent to that obtained in air, and these preliminary experiments would tend to show that when a wooden disk is made to revolve rapidly at the surface of the earth, its radiation is increased to an extent depending on the velocity; and it would appear that this effect is not materially less in a vacuum of 0·6 in. than in the open air.

The authors intend to work out this and allied questions experimentally, and hope, if successful, to communicate the result to this Society.

March 2, 1865.

Major-General SABINE, President, in the Chair.

In accordance with the Statutes, the names of the Candidates for election into the Society were read, as follows :—

James Abernethy, Esq., C.E.  
 A. Leith Adams, M.B.  
 Alexander Armstrong, M.D.  
 William Baird, M.D.  
 George Bishop, Esq.  
 John Charles Bucknill, M.D.  
 Lieut.-Col. Cameron, R.E.  
 Henry Christy, Esq.  
 The Hon. James Cockle.  
 The Rev. William Rutter Dawes.  
 W. Boyd Dawkins, Esq.  
 Henry Dircks, Esq.  
 Thomas Rowe Edmonds, Esq.  
 Professor Henry Fawcett.  
 Peter Le Neve Foster, Esq.  
 Sir Charles Fox, C.E.  
 Archibald Geikie, Esq.  
 George Gore, Esq.  
 Professor Robert Grant.  
 George Robert Gray, Esq.  
 William Augustus Guy, M.B.  
 Capt. Robert Wolseley Haig, R.A.  
 George Harley, M.D.  
 Benjamin Hobson, M.B.  
 William Huggins, Esq.  
 Fleeming Jenkin, Esq., C.E.  
 Edmund C. Johnson, M.D.  
 Henry Letheby, M.B.

Professor Leone Levi.  
 Waller Augustus Lewis, M.B.  
 John Robinson M'Clean, Esq., C.E.  
 Capt. Sir F. Leopold M'Clintock,  
 R.N.  
 Robert M'Donnell, M.D.  
 Hugo Müller, Esq., Ph.D.  
 Charles Murchison, M.D.  
 Andrew Noble, Esq., C.E.  
 Sir Joseph P. Olliffe, M.D.  
 William Kitchen Parker, Esq.  
 William Henry Perkin, Esq.  
 Thomas Lamb Phipson, Esq., Ph.D.  
 Charles Bland Radcliffe, M.D.  
 Lovell Reeve, Esq.  
 John Russell Reynolds, M.D.  
 Thomas Richardson, Esq., Ph.D.  
 Wm. Henry Leighton Russell, Esq.  
 Edward Henry Sieveking, M.D.  
 Alfred Tennyson, Esq., D.C.L.  
 George Henry Kendrick Thwaites,  
 Esq.  
 The Rev. Henry Baker Tristram.  
 Lieut.-Col. James Thomas Walker,  
 R.E.  
 A. T. Houghton Waters, M.D.  
 Charles Wye Williams, Esq.  
 Henry Worms, Esq.

The following communications were read :—

- I. "On the Quadric Inversion of Plane Curves." By T. A. HIRST,  
 F.R.S. Received February 16, 1865.

*Introduction.*

1. The method of inversion which forms the subject of the present paper is an immediate generalization of that now universally employed. In place of a fixed circle with the origin at its centre, any fixed conic (*quadric*)