XV. On the crystallized compounds of osmium and iridium found in the ural

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It is *otherwise* manifest, that provided the fixed points on which the system rests be capable of supplying resistance *in every possible direction*, this parallelism is necessary to the condition of a minimum amount of resistance.

When, however, the resistances of the system are supplied by the contact of surfaces capable of motion upon one another, this condition of resistance in every possible direction is not satisfied; the possible directions of resistance at each point lying within the surface of a right cone having that point for its vertex, the normal to it for its axis, and a certain angle dependent upon the friction of the surfaces in contact for its vertical angle.

In this *general* case, then, a parallelism of the resistances is impossible, and we must determine the direction of each according to the principles laid down in the preceding pages, subject to such modifications as may be imposed by the nature of the resisting surfaces and the other conditions of the equilibrium of the system. The discussion of these is reserved for a future Number of this Journal.

XV. *On the crystallized Compounds of Osmium and Iridium, found in the Ural.* By G. ROSE.*

Osmiridium from Newransk. **T**HE inclination of *r* and *c*, measured with the reflective goniometer, is 118° nearly. The faces *r*, *c* and *g* possess but little lustre. Cleavage parallel to *c*, but obtained with difficulty. Colour tin white, rather darker than native antimony. Lustre metallic. Hardness equal to that of quartz. Specific gravity 19.385, obtained by weighing 2.084 grammes of the mineral, selected with great care, in water, at the temperature of $12^{\circ}.3$ Reaumur: a second experiment gave 19.471, the temperature of the water being 9° Reaumur. Heated before the blowpipe on charcoal, it undergoes no change, and does not give the slightest smell of osmium. It smells slightly of osmium when melted with nitre in a matrass, and forms a green mass after cooling. It is found in the gold-sand of Newransk, 95 wersts north of Catharinenburg. Platina occurs with it, but in much smaller quantities. It is also found at Bilimbajewsk, Ryschtim, and many other places in the Ural.

Osmiridium from Nischne Tagil.—The crystals of this variety

* From Poggendorff's *Annalen*, vol. xxix. Part III.

of osmiridium have the same form, angles and cleavage as the preceding. Colour lead-grey, like antimony glance. Hardness that of the preceding variety. Specific gravity of several crystals, which together weighed 1.5205 grammes, 21.118, the temperature of the water being 13° Reaumur. Heated before the blowpipe on charcoal, it does not melt, but the surface becomes dull, and turns black, giving out at the same time a penetrating smell of osmium.

XVI. On Phenakite, a new Mineral from the Ural. By NILS NORDENSKIÖLD.*

THIS mineral is found in Perm, 85 wersts from Catharienburg. Its form is rhombohedral $PP = 115.25$, $bP = 147.42\frac{1}{2}$, $nP = 122.17\frac{1}{2}$ nearly. Cleavage parallel to n . Hardness greater than that of quartz. Specific gravity 2.969. Lustre vitreous. When pure it is transparent and colourless. Sometimes its colour is a bright wine yellow inclining to red: it is also found white and opaque. According to Hartwall, it is composed of silica 55.14, glucine 44.47, and traces of alumina and magnesia, amounting, together with the loss, to 0.39. The composition of this mineral is expressed by the formula $\ddot{B}e + 2\ddot{S}$.

XVII. On the Influence of the Climate of Naples upon the Periods of Vegetation as compared with that of some other Places in Europe. By JOHN HOGG, Esq., M.A., F.L.S. F.C.P.S., &c.

[Continued from page 50: and concluded.]

III. Efflorescence.

FLOWERING (*Efflorescentia*), or the time in which plants unfold their first flowers, is itself also subject to variations no less remarkable than those mentioned in the other periods of vegetation already described.

By comparing the observations reported by Linnæus in his *Philosophia Botanica* upon the flowering of many plants in the neighbourhood of Upsal, and those by M. Chavassieux d'Audibert in the environs of Paris, with my own researches

* From Poggendorff's *Annalen*, vol. xxxiii.