

# PHILOSOPHICAL TRANSACTIONS.

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## The Contents.

*The Generation of an Hyperbolical Cyliadroid demonstrated, and the Application thereof for Grinding Hyperbolical Glasses hinted at. Experiments lately made concerning the Motion of the Sap in Trees. An Extract of a Letter lately written from Vienna, about Damps in the Mines of Hungary, and their Effects. A Chronological Account of the severall Eruptions of Mount Ætna. A Relation concerning a Woman, not long since open'd at Paris, having a double Matrix. An Account of 4 Books* I. THOMÆ HOBBS *Quadratura Circuli, Cubatio Sphæræ, Duplicatio Cubi, Confutata à IOHANNE WALLIS &c. II. HISTORIA GERAL DE ETHIOPIA A ALTA; Pelo Padre BALTHASAR TELLES &c. III. AN HISTORICAL ESSAY, Endeavouring to make it Probable, that the LANGUAGE of CHINA is the PRIMITIVE Language; by JOHN WEBB Esquire. IV. AN EXAMEN of the way of TEACHING THE LATIN TONGUE by Use alone.*

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### Generatio

Corporis Cylindroidis Hyperbolici, elaborandis Lenti-  
bus Hyperbolicis accommodati, Auth. Christophoro  
Wren L L D. et Regionum Ædificiorum Præfecto, nec  
non Soc. Regiæ Sodali.

**S**int (in Fig. I.) Hyperbola opposita  $DB, EC$ , qua-  
rum Axis transversus est  $BC$ , Centrum  $A$ , et una ex Asympto-  
tus  $GP$ ; item per Centrum fit  $OM$  ducta ad angulos rectos ipsi  $BC$ .  
I t t c  
Quare

Quare si circumducantur Hyperbola circa Axin  $OM$ , manifestum est, ex ea revolutione generari corpus Cylindroides Hyperbolicum cujus Bases sectionesque Basi parallelae sunt Circuli. Dico insuper, si idem corpus secetur per Asymptoton  $GP$ , erit sectio Parallelogrammum.

Secetur per Axin transversum sectione circulari  $BNC$ ; item per  $O$  et  $M$  in Circulos aequales & aequaliter a Centro distantes; item per Axin in figuram Geometricam cujus semissis est  $BDEC$ , in cujus plano erit Asymptotes  $GP$ , per quam ad rectos angulos planum  $BDE$  secetur in plano  $FHP$ ; jungantur denique  $HO$ .

Quoniam Triangulum  $OGH$  est Rectangulum, Ergo Quadratum  $OH$  sive  $OD$  minus Quadrato  $OG$  est aequale Quadrato  $GH$ ; et quoniam  $DO$  parallela est ipsi  $BA$ , et Asymptoton secatur in  $G$ , erit (ex proprietatibus Hyperbolae, quae in Conicis demonstrantur) Quadratum  $OG$  una cum Quadrato  $AB$  aequale Quadrato  $OD$ , h. e. Quadratum  $OD$  minus Quadrato  $OG$  aequale Quadrato  $AB$  sive Quadrato  $AN$ . Ergo Quadratum  $GH$  aequale est Quadrato  $AN$ . Quare  $GH$  et  $AN$  aequantur et sunt ad angulos rectos ipsi  $GA$ ; idemque demonstratur de omnibus aliis sectionibus Basi parallelis. Quare Cylindroides Hyperbolica sic secatur per Asymptoton in Parallelogrammum. q. e. d.

### Corollarium

Hinc patet, in superficie Cylindroidis, quamvis e duplici flexura constet, rectas nihilominus innumeras duci posse: Patet etiam, aliam esse hujus Corporis generationem, nimir. ex revolutione Parallelogrammi circa Axin manente angulo ad Axin aequali  $GAO$ , vel denique manente Linea Generatrice  $HR$  immobili, et massam volubilem formante aut secante. Et si acies Dolabri acutissima et rectissima ita disponatur ad Axin, sicut se habet Linea Generatrix, rotante interim Mampure, manifestum est, Torno tam accuratas posse elaborari Hyperbolas quam Circulos, cum nihil aliud requiratur ad formandam Cylindroidem quam ad Cylindrum, nisi quoadin Cylindris acies dolabri est Axi parallela, hic vero inclinata. Itaque notandum est, pro Inclinacione Anguli  $GAO$ . variari speciem Hyperbolae; adeoque facilius accommodatur ad datam Hyperbolam quam ut demonstratione opus habeat: At si manente angulo Generatrix magis ad Centrum accedat, exsurgit inde minor Hyperbola, sed praei prorsus similis.

Ex hoc Principio fabricari jara curavit Ingeniosissimus Author Machinam, simplicitate sua perquam commendabilem, cujus beneficio lentae elaborentur Hyperbolicae. Illius descriptionem una cum Leone brevi nos etiam edituros speramus

