

THE
MONTHLY REVIEW;
OR,
LITERARY JOURNAL,
ENLARGED:

From MAY to AUGUST, *inclusive*,

M, DCC, XCIV.

With an APPENDIX.

Defendat quod quisque sentit: sunt enim judicia libera: nos institutum tenebimus; nullisque unius disciplinæ legibus adstricti, quibus in philosophiâ necessariò pareamus, quid sit in quâque re maxime probabile semper requiremus.

CIC. *Disp. Tusc. lib. iv. cap. iv.*

Judicavimus tamen: neque enim soli judicant, qui malignè legunt.

PLIN: *Epist.*

VOLUME XIV.



LONDON:
Printed for R. GRIFFITHS;
AND SOLD BY T. BECKET, IN FALL MALL.
MDCCXCIV.

(RLPPG)

0901

.m811 N.S. V 14

T A B L E

OF THE

TITLES, AUTHORS' NAMES, &c. of the Publications reviewed in this Volume.

N. B. FOR REMARKABLE PASSAGES, in the *Criticisms* and *Extracts*, see the INDEX, at the End of the Volume.

☞ For the Names, also, of those learned Foreigners who are the Authors of new Dissertations, or other curious Papers, published in the MEMOIRS and TRANSACTIONS of the Scientific ACADEMIES on the Continent, and also for the Titles of those Dissertations, &c. which they include, and of which Accounts are given in the Review,—see the *Index*, printed at the End of this Volume.

A			
<i>ADAM's</i> Speech,	470	<i>Bate</i> Dudley's Travellers in Switzerland,	350
<i>Aikin's</i> Letters to his Son,	1	<i>Beaumont's</i> Views in the South of France,	183
<i>Aken</i> on Extinguishing Fires,	527	<i>Bell, Dr.</i> on West India Diseases,	334
<i>Alarms.</i> See <i>M'Leod.</i>		—, <i>Mr. John</i> , on the Anatomy of the Bones, &c.	ib.
<i>Alexander.</i> See <i>Clayton.</i>		—, (<i>Mr. Benj.</i>) on <i>Gonorrhoea Virulenta,</i>	410
<i>America.</i> See <i>Message; View; United States.</i>		<i>Bengal Sugar.</i> See <i>Sugar Case.</i>	
<i>Anatomy.</i> See <i>Bell.</i> See <i>Baillie.</i>		<i>Bennett's</i> (<i>Mrs.</i>) <i>Ellen</i> , a Novel,	74
<i>Andrew's</i> History of Great Britain,	361.	<i>Berington's</i> Memoirs of <i>Pansani</i>	388
—'s (<i>David</i>) Letter to <i>Wakefield,</i>	461	<i>Berlin</i> Literary Journal,	513
<i>Annuity Act.</i> Cases on,	539	<i>Beschryving van den Veldtoot, &c.</i>	559
<i>Antiquities,</i> Miscellaneous,	205	<i>Bigge</i> on the State of Parties,	208
<i>Apoplexy.</i> See <i>Kirkland.</i>		<i>Bildnisse, &c.</i>	548
<i>Arnold's</i> Case of Hydrophobia,	233	<i>Biographica Britannica,</i> Vol. V.	172
<i>Art,</i> Society for, their Transactions, Vol. XI.	54	<i>Birds,</i> Natural History of,	238
<i>Asiatic</i> Researches, Vol. III.	496	<i>Bischoff</i> on the Cataract,	108
<i>Athenians.</i> See <i>Morris.</i>		<i>Bladder.</i> See <i>Weldon.</i>	
<i>Austria,</i> Account of, Vols. III. & IV.	481	<i>Boaden's</i> Fontainville Forest,	350
		<i>Bombay.</i> See <i>Observations.</i>	
		<i>Bond's</i> Oration,	540
		<i>Book</i> of Common Prayer reformed,	267
		<i>Boroughs,</i> History of,	471
		<i>Boscawen's</i> Horace,	427
		<i>Botany,</i> Study of, Oration on,	540
		<i>Botany Bay.</i> See <i>Johnson.</i> See <i>Thomson.</i>	
		<i>Box-lobby</i> Challenge,	350
		<i>Briffot's</i> Life,	237
		<i>British</i>	

B

<i>Baillie's</i> Morbid Anatomy,	405
<i>Balfour</i> on Putrid Fevers,	330
<i>Barruel's</i> History of the French Clergy,	458

O.P.P.
409

K.14

<i>British Patriot</i> , a Poem,	348	<i>Debtor and Creditor Laws</i> ,	341
<i>Brown's Sermon at Utrecht</i> ,	512	<i>Defence of the Right to Tithes</i> ,	463
<i>Brunswick, Duke of, Account of his Campaign</i> ,	559	<i>Delme's Life of Maria Antoinette</i> ,	355
<i>Bucanan's Defence of the Highlanders</i> ,	284	<i>Devotion, Thoughts on</i> ,	338
<i>Burke's Speech, May 22</i> ,	229	<i>Dialogue in the Shades</i> ,	328
<i>Button's Fast Sermon</i> ,	115	<i>Dissertation on the Eleusinian and Bacchic Mysteries</i> ,	29
C			
<i>Cary's Account of the Philadelphia Fever</i> ,	187	<i>Doig's Letters on the Savage State</i> ,	173
<i>Cartwright's Journal at Labrador</i> ,	43	<i>Dundas's Speech on embodying French corps</i> ,	457
<i>Castle of Andalusia</i> ,	349	<i>Duenna, an Opera</i> ,	349
<i>Cataract</i> . See <i>Bischoff</i> .		<i>Dukinfield Lodge, a Poem</i> ,	235
<i>Cavern of Death, a Tale</i> ,	464	<i>Dumourier's Memoirs</i> ,	397
<i>Chantreau's Journey in Russia</i> ,	521	<i>Dupe, a Sketch</i> ,	113
<i>Chemical Nomenclature, Table of</i> ,	317	E	
— <i>Annals, by Crell</i> ,	515	<i>Earle on the Stone</i> ,	385
— <i>Magazine, by Kastelein</i> ,	533	<i>Edmunds's Solicitor's Guide</i> ,	341
<i>Chronology</i> . See <i>Mayo</i> .		<i>Edwards's Hist. of the West Indies</i> ,	158.
<i>Clarendon, Sir Roger de, Memoirs of</i> ,	152		292
<i>Clayton's (Sir R.) Translation of St. Croix on the Life of Alexander</i> ,	435	<i>Eighteenth Century</i> . See <i>Essays</i> .	
<i>Clergy, French</i> . See <i>Barruel</i> .		<i>Electric Atmospheres</i> . See <i>Pearce</i> .	
<i>Coalition, a Comedy</i> ,	111	<i>Electricity, Animal</i> . See <i>Valli</i> .	
<i>Cogan on the Rhine</i> ,	12	<i>Ellen, Countess of Castle Howell</i> ,	74
<i>Comets</i> . See <i>Englefield</i> .		— and <i>Julia</i> ,	465
<i>Common Prayer-book reformed</i> ,	267	<i>Englefield, Sir H. on the Orbits of Comets</i> ,	255
<i>Considerations on the Causes and Consequences of the War</i> ,	218	<i>Engravings</i> . See <i>Hamilton</i> .	
— on the Internal and External Situation of France,	454	<i>Equivalents</i> . See <i>Craufurd</i> .	
<i>Convention</i> . See <i>Proceedings</i> .		<i>Eschine's Sermon</i> ,	239
<i>Corporations, Law of</i> ,	339	<i>Essay on the Manners of the 18th Century</i> ,	545
<i>Correspondence between Jefferson and Hammond</i> ,	459	<i>Europe, Antient</i> . See <i>Ruffell</i> .	
• CORRESPONDENCE with the Reviewers, 118—120. 240. 359—360. 476—480.		— in Danger,	327
<i>Cottingham's Fast Sermon</i> ,	239	<i>European States</i> . See <i>Mayo</i> .	
<i>Court de Villeroi, a Tragedy</i> ,	466	<i>Ewald's Letters to Emma</i> ,	541
<i>Coup d'Oril Philosophique, &c.</i>	566	<i>Extempore preaching recommended</i> ,	203
<i>Courthly's Poetical Epistles</i> ,	344	<i>Eyes</i> . See <i>Rowley</i> .	
<i>Courts of Europe, their Political Interests</i> ,	507	<i>Eyre's Maid of Normandy</i> ,	467
<i>Craufurd on Equivalents</i> ,	504	F	
<i>Crell's Annals</i> ,	515	<i>Fast Sermons</i> , 114. 115. 239. 355. 356	
<i>Crime of neglecting Inoculation</i> ,	234	<i>Fenwick's Translation of Dumourier's Memoirs</i> ,	397
<i>Crying Epistle to Col. Mack</i> ,	469	<i>Fever</i> . See <i>Carey</i> . See <i>Balfour</i> .	
<i>Cumberland's Box-lobby Challenge</i> .	350	<i>Filson on the Discovery of Kentucky</i> ,	143
<i>Curates</i> . See <i>Wood</i> .		<i>Fires, Experiments on extinguishing</i> ,	527
D			
<i>Dangers which threaten Europe</i> ,	286	<i>Fite's (Madame de la,) Questions, &c.</i>	354
<i>Debate on Thanks to the Managers</i> ,	453	<i>Fontainville Forest</i> ,	350
<i>Debates on the Suspension of the Habeas Corpus Act</i> ,	452	<i>Forceps</i> . See <i>Rawlins</i> .	
		<i>Foreign Troops</i> . See <i>Thoughts</i> .	
		<i>Fortifications</i> . See <i>Observations</i> .	
		<i>Fox's (W.) Discourse on the Fast</i> ,	115
		<i>France, Tracts relative to</i> , 83. 97. 177. 215. 222. 397. 454. 458. 519. 559. 566	
		<i>Francis</i> ,	

CONTENTS.

<i>France, South of, Views in,</i>	183
<i>Francomania,</i>	318
<i>Franks on Animal Life,</i>	333
<i>Freedom. See Patton.</i>	
<i>Frost's Annual Songster,</i>	348
<i>Friend's Account of Proceedings,</i>	468

G

<i>Gazetteer of the Netherlands,</i>	471
<i>Genius of Shakspeare,</i>	345
<i>Geometry. See Malton.</i>	
<i>German Literati, Portraits of,</i>	548
<i>Glimpse through the Gloom,</i>	215
<i>Gonorrhoea. See Bell.</i>	
<i>Gordon's Fast Sermon,</i>	355
<i>Government, Civil. See York.</i>	
<i>Groves's Coalition, a Comedy,</i>	111
<i>Gren's Journal,</i>	522
<i>Gymnastica Democratica,</i>	352

H

<i>Habeas Corpus Act. See Debates.</i>	
<i>Hamilton's Jurymen's Guide,</i>	230
<i>———'s (G.) Voyage round the World,</i>	417
<i>———'s (Sir W.) Engravings from Vases,</i>	555
<i>Hampson's Dukinfield Lodge,</i>	235
<i>Harrington's Chemical Essays,</i>	462
<i>Hastings, Mr. See Letter; Burke; Report; Debate.</i>	
<i>Herdman's Sermon,</i>	240
<i>Heron's Journey through Scotland,</i>	300
<i>Herr's Occasional Poems,</i>	346
<i>Hewson's Fast Sermon,</i>	355
<i>Highlanders. See Buchanan.</i>	
<i>Hindoostan. See Rennell.</i>	
<i>History of Philip W. degrave,</i>	113
<i>——— of Boroughs,</i>	471
<i>———. See Andrews. See Payne. See Russell. See Plowden.</i>	
<i>Hobhouse's Reply to Randolph,</i>	227
<i>Holt's Vindication,</i>	230
<i>Horace. See Bojardes.</i>	
<i>Horne's Discourses, Vols. III. and IV.</i>	254
<i>Horse, Laws respecting,</i>	340
<i>Horsley, Bishop, farewell Epistles to,</i>	108
<i>Housson's Facts on the Venereal Disease,</i>	334
<i>Howe, Earl, Documents relative to his Victory,</i>	353
<i>Humphreys's Sermon,</i>	359
<i>Hunt's Cases on the Annuity Act,</i>	339
<i>Hunter on the Causes, &c. of the War,</i>	91
<i>Hurd's Sermon,</i>	357
<i>Hutton's Barbers, &c.</i>	343

<i>Hydraulics. See Schryers.</i>	
<i>Hydrophobia. See Arnold.</i>	

I

<i>Jackson's Dermato Pathologia,</i>	428
<i>Jacobin Principles. See Observations.</i>	
<i>Jefferson. See Correspondence.</i>	
<i>Jebbson's Confessions of Couteau,</i>	236
<i>Indian Antiquities, Part III.</i>	311
<i>Inoculation. See Crims.</i>	
<i>Johnson's Fast Sermon,</i>	174
<i>———'s Address to the Inhabitants of New South Wales,</i>	473
<i>Jonas's Sermon on the Man of Sin,</i>	116
<i>Jordan's Parliamentary Journal,</i>	214
<i>Journal de Berlin,</i>	513
<i>——— der Physik,</i>	522
<i>Jurics. See Hamilton. See Observations.</i>	
<i>Jurics on Scripture Prophecies,</i>	109

K

<i>Kantian Philosophy, Letters on,</i>	541
<i>Kasselin's Chemical Magazine,</i>	533
<i>Kentucky. See Filson.</i>	
<i>Kippis's Biographica Britannica, Vol. V.</i>	171
<i>Kirkland on Apoplexy,</i>	335
<i>Knigbi's Landscape, a Poem,</i>	78
<i>Kyd on the Law of Corporations,</i>	339

L

<i>Labrador. See Cartwright.</i>	
<i>Landscape, a Poem,</i>	78
<i>Langrishe, Sir H., his Speech,</i>	95
<i>Law. See Woodruff.</i>	
<i>Laws concerning Literary Property,</i>	340
<i>Leach's Edition of Showers's Reports,</i>	341
<i>Leake on the Viscera,</i>	335
<i>Leizit, Emperor of Morocco, Account of,</i>	546
<i>Letter to the D. of Grafton,</i>	87
<i>——— to the greatest Hypocrite,</i>	93
<i>——— to Mr. Fox, on the Trial of Mr. Hastings,</i>	228
<i>——— to F. Plowden, Esq.</i>	261
<i>Lettice's Tour through Scotland,</i>	132
<i>Louis XIV. new Age of,</i>	566
<i>Literary Property, Laws concerning,</i>	340
<i>Long side discovered,</i>	464
<i>Looking-glass for a Right Hon. Mendicant,</i>	273
<i>Lowth. See Smith.</i>	
<i>———'s Sermon,</i>	239
<i>Lucas's ditto,</i>	240

Macgregor

M

<i>Macgregor</i> on Mathematics,	110
— on Mensuration,	<i>ib.</i>
<i>Mack</i> , Col. Epistle to,	469
<i>MacLeod</i> on Alarms,	211
<i>Mad Dog</i> . See <i>Mease</i> .	
<i>Magic Lantern</i> ,	349
<i>Maid</i> of the Hamlet,	465
— of Normandy,	467
<i>Major Piper</i> ,	465
<i>Maitland's Sermons</i> ,	338
<i>Mallet du Pas</i> on the Dangers of Europe,	286. 327
<i>Malton's Road</i> to Geometry,	226
<i>Man</i> , Isle of, Tour through,	193
<i>Maniacal Disorders</i> . See <i>Pargeter</i> .	
<i>Manners</i> of France, Italy, &c. present State of,	544
<i>Mariotini's Milton</i> ,	235
<i>Marmontel's New Tales</i> ,	354
<i>Maurice's Indian Antiquities</i> , Part III.	311
<i>Mauvillon</i> . See <i>Mirabeau</i> .	
<i>Mayo's Chronol. History</i> of European States,	201
<i>May's Sermons</i> ,	460
<i>Mease</i> on the Bite of a Mad Dog,	144
<i>Medical Facts</i> , Vol. IV.	25
<i>Message</i> of the President of the United States,	103
<i>Miles's Letter</i> to the D. of Grafton,	87
—'s Vindication of the Letter to the Duke of Grafton,	446
<i>Milton</i> . See <i>Mariotini</i> .	
<i>Mirabeau's Friendly Letters</i> to Mauvillon,	519
<i>Miscellaneous Antiquities</i> , Nos. 1 and 2,	205
<i>Monetary System</i> . See <i>Prinsep</i> .	
<i>Monarchical Sovereignty</i> , View of,	566
<i>Monro</i> on the Nervous System,	414
<i>Moore</i> on the <i>Materia Medica</i> ,	129
<i>Morocco</i> . See <i>Leizit</i> .	
<i>Morris</i> on the Constitution of the Athenians,	221
<i>Murder</i> . See <i>Russ</i> .	
<i>Myseries</i> . See <i>Dissertation</i> .	

N

<i>Nature</i> , View of,	121. 257
<i>Natural History</i> of Birds,	238
<i>Norwits</i> . See <i>Monro</i> .	
<i>New Age</i> of Lewis XIV.	566
<i>Nevry</i> . See <i>Pollock</i> .	
<i>New South Wales</i> . See <i>Johnson</i> .	
<i>Nouveau Siecle</i> de Louis XIV.	566
<i>Nyctroem</i> on extinguishing Fires,	527

O

<i>Observations</i> on the War,	96
— and Reflections on Jacobin Principles,	97
— on the Duke of Richmond's Fortifications,	197
— on the Rights of Juries,	230
— on Bombay Discontents,	462
<i>O'Keefe's Castle</i> of Andalusia,	349
—'s Wild Oats,	<i>ib.</i>
<i>Owen's Retrospect</i> ,	83

P

<i>Paine's Age</i> of Reason,	393
<i>Pakenham</i> , Capt. his Invention;	235
<i>Panzeri</i> . See <i>Berrington</i> .	
<i>Pargeter</i> on Maniacal Disorders,	334
<i>Paris</i> , Picture of,	177
<i>Parkin's Sermon</i> ,	475
<i>Parson's</i> (Mrs.) Ellen and Julia,	465
<i>Parties</i> , State of,	228
<i>Partnership</i> . See <i>Watson</i> .	
<i>Paton</i> on the Basis of Freedom,	51
<i>Payne's Epitome</i> of History.	353
<i>Pearson's Sermons</i> , Nov. 5, and Jan. 30,	115
—'s (Dr.) Translation of the Table of Chemical Nomenclature,	317
<i>Peart</i> on Electric Atmospheres,	235
<i>Peller's Picture</i> of Paris,	177
<i>Pharmacopœia Col. Reg. Med. Edin.</i>	108
— <i>Chirurgica</i> ,	234
<i>Philadelphia Fever</i> . See <i>Carey</i> .	
<i>Philosophical Transactions</i> of the Royal Society, Part II. for 1793,	67
<i>Physic</i> . See <i>Temple</i> .	
<i>Pindaric Disaster</i> , a Tale,	111
<i>Plague</i> . See <i>Russil</i> .	
<i>Plain Suggestions</i> of a Seaman,	328
<i>Plan</i> for commut'g Tithes,	463
<i>Plato</i> . See <i>Taylor</i> .	
<i>Plowden's short History</i> of the British Empire,	31. 137
—'s Friendly Address,	324
— See <i>Letter</i> .	
<i>Poems</i> . See <i>Knigh</i> , <i>Whitehouse</i> , <i>Robinson</i> , <i>Courtney</i> , <i>Hett</i> , <i>Fleetb</i> , <i>Tosker</i> .	
<i>Politique de tous les Cabinets</i> de l'Europe,	507
<i>Pollock's Letter</i> to the Inhabitants of Newry,	104
<i>Portraits</i> of German Literati,	548
<i>Poti's Elementary Discourses</i> ,	460
<i>Poulter's Fast Sermon</i> ,	114
<i>Practice</i> of Extempore Preaching recommended,	203
<i>Priestley's farewell Sermon</i> ,	358
— Principles	8

T H E
M O N T H L Y R E V I E W ,

F o r M A Y , 1794.

ART. I. *Letters from a Father to his Son, on various Topics relative to Literature and the Conduct of Life. Written in the Years 1792 and 1793. By J. Aikin, M.D. 8vo. pp. 348. 5s. Boards. Johnson. 1793.*

IT is impossible to compare the established modes of education with the present state of knowledge without perceiving that they are defective, in several respects, but particularly in this, that the plans of instruction commonly followed are by no means sufficiently varied and extensive. The grand object ought not so much to be to form great scholars, or great mathematicians, as to furnish young men with such general principles of knowledge and taste as may be useful to them in future life:—whereas the fact is, that, in our public schools and universities, one or two objects of pursuit, and these often only indirectly connected with the scholar's future destination, are almost exclusively regarded. Classical or mathematical learning, in relation to other studies, like the serpent of Aaron, swallows up all the rest. Whatever temporary benefit may accrue to individuals from the arbitrary connection which has been established between high attainments in these branches of learning and the acquisition of academical honours, or professional emolument, the general inconveniencies attending this narrow plan of education are very seriously felt; and it is become a concern of the first moment so far to new model our systems of instruction, as to accommodate them to the present enlightened and improved state of society.

The ingenious and judicious author of the work now before us is so strongly convinced of the propriety of such an extension of the current plans of education, that, as we learn from the introductory letter, he has educated his son, to whom the letters are addressed, on a broad scale, which has comprized many changes of discipline, and has embraced a large field of instruction. By these means, he has endeavoured to give the

VOL. XIV.

B

young

T H E
M O N T H L Y R E V I E W ,

F o r J U N E , 1794.

ART. I. *A View of Nature, in Letters to a Traveller among the Alps: with Reflections on Atheistical Philosophy, now exemplified in France.* By Richard Joseph Sullivan, Esq. F.R.S. and F.A.S. 8vo. 6 Vols. About 500 Pages in each. 11. 16s. Boards. Becket. 1794.

ONE principal cause of the vices, the follies, and the miseries of the world is the general want of those clear and steady principles of conduct, which are the result only of diligent inquiry. A more essential service cannot, therefore, be rendered to mankind, than by enticing them to think. Were all men, indeed, duly sensible of the value of knowledge, enticement would be unnecessary. The direct road of systematic instruction would then, in all cases, be the best; for every man would find a sufficient inducement to submit to the labour of investigation, in the prospect of the benefit attending the acquisition of knowledge:—but, in the present state of society, in which objects more powerfully attractive than truth are continually presenting themselves to the imagination and the passions; and in which the pursuit of pleasure, or of gain, scarcely leaves men leisure for momentary reflection, much less for deliberate investigation;—it requires no small degree of address to draw them aside from their favourite walks in active life, and to lead them into the silent retreats of contemplation.

The author of the important work now before us appears to have been aware of the great difficulty of prevailing on the busy and the gay, especially in the higher ranks of life, to advert to any subjects, however important, which require much thought and reflection. Accordingly, instead of carrying his pupil within the dull walls of the schools, and there giving him a course of formal lectures from the preceptorial chair, he takes him by the hand, and conducts him, with easy and polite familiarity, into the museum of science; in which he presents

VOL. XIV.

K

before

before him, in pleasing succession, a great variety of curious and interesting objects of attention.

Were we to consider these volumes merely as a collection of materials from various authors, on different branches of knowledge; or of facts accumulated by observation in travelling, or ascertained by experiment; we should say that they are of great value, and must have been the result of diligent attention:—but Mr. Sullivan's merit is of a higher kind than that of an industrious and judicious collector. Every subject, in passing through his hands, is treated in a manner which discovers an active, vigorous, and well cultivated mind, enlarged and comprehensive views, and an ardent thirst of knowledge. On many topics, he speculates with a considerable degree of originality: and, when the subject will permit, he diversifies the uniformity of scientific disquisition, by an occasional stroke of pleasantry or flight of fancy, the easy effort of native genius. His style is not of that studied kind which gratifies, and often fatiates, the ear with a perpetual succession of well turned and harmonious periods: but it has the rare merit of varying with the subject; being, as occasion requires, simple, nervous, figurative, or animated; and, through all its varieties, preserving the graceful ease of epistolary writing.

Still higher praise, however, is justly due to Mr. Sullivan on account of that benevolent spirit, and that zeal for the cause of religion and virtue, which appear to have first suggested the idea of the work, and to have supported him through the very considerable labour of executing it. Fully persuaded that an atheistical system of philosophy is equally irrational and pernicious, he takes an extensive and scientific *view of nature*, in hopes that those, who may be disposed to follow him in the survey, will be hereby confirmed in a rational conviction of the existence of a Supreme Being, and of the consequent truth of the great principles of religion. If, on this subject, it should be thought that he sometimes steps, farther than was necessary, from the province of the cool reasoner into that of the indignant Censor, it ought to be recollected that the cause which he is pleading involves in it the dearest comforts and the best hopes of human beings. It should be added also that, if, in a certain sense of the appellation, he condemns free thinkers, he is no enemy to free inquiry; and his work is itself an excellent guide in that noble kind of *free thinking*, the office of which, (as Dr. Young expresses it,) is

“ To send the soul, on curious travel bent,
Through all the provinces of human thought.”

Having said what we judged necessary in order to give our readers a general idea of the character and merit of this work,

we

We must now endeavour to introduce them to a more particular acquaintance with its contents. Here, however, the limits of our work, and the present numerous demands on our time and attention from various quarters, compel us, instead of attending the author, as we wished to have done, through all the fields of science which he has visited, to confine ourselves to a few miscellaneous extracts and observations.

In several introductory letters, Mr. S. expresses his general sentiments on the danger of contracting early prejudices against religion, in travelling; on the illiberality of ridiculing priests and religious institutions; and on the compatibility of philosophical researches with active life. We extract the remarks on the latter subject, as a specimen of the easy vivacity of the author's style:

‘ It is an erroneous opinion, that sequestration from the world, and a total dereliction of all pleasures and all business, are essential to the full and powerful exertion of our mental faculties. The man who has received from nature a sound and discriminating judgment, and who, as a stock of materials on which to exercise his faculties, has acquired a fund of useful knowledge, cannot be deprived of his ability and inclination for study, by any active pursuits for the benefit of society, or by any lassitude or fatigue from public employments. An ardent and a versatile mind will find moments for study and for amusement, as well as for business. Trying its force on variety, its keenness and assiduity will increase. Pleasure springs from the source of unfettered scientific investigation; and stability of strength from the exertion of our faculties. Men of feeble parts, I confess, are not to be included in this number. I speak of those select and exalted minds, “*quos ardens evexit ad æthera virtus.*” But, retirement is far from being indispensably requisite. Cicero, Xenophon, Cæsar, Bacon, De Thou, and a variety of others, not only did more, but thought more, and wrote more, than any mistaken recluse that ever existed. But, thrift, and frugality in the disposition of time, are points which are in that case absolutely necessary. Careful and undissipated in the application of them, a man's hoard will so rapidly increase, that in the end, he will have accumulated a stock, not only adequate to every common demand, but amply sufficient for every future contingency.

‘ We sometimes, however, meet with a man who drones away his existence; and who, even in the bustle of the world, is as thoroughly interred, as though he were irrevocably fated to a residence six feet under-ground; who is still, if possible, more to be commiserated than he who devotes himself to the austerities and penance of a cell. Such a living dead man is a wretched being. He neither has intellectual satisfactions, which forcibly give birth to the social affections; nor has he even imaginary plans, to sooth him with the prospect of eventual retribution or reward. Such an animated nothing is pestiferous. The contagion of his baneful apathies has an enfeebling and unwholesome power, like that of the Sirocco wind, so fatal to animal vigour in the south of Italy. No blow which active virtue can receive, can destroy

stroy her native energy. Storms and tempests may howl around, she is still herself: in the midst of every gloom, she is still irradiated by her own native splendor. The warm and properly tempered affections are in every instance the soothers of melancholy, the counterpoises to ill-humour, and I had almost said, the panacea for bodily disease.

Mr. S. commences his extensive view of nature with a general survey of the globe of the earth. The several theories, which have been offered for the solution of the vast problem concerning its formation, are brought in review before the reader, not merely in the narrative form, as a part of the history of philosophy, but with such observations as could only have been the result of diligent inquiry and deep reflection. Our readers may obtain some idea of the author's manner of thinking and writing on physical subjects, from the following letter on the formation of mountains:

L E T T E R X.

The explanation, which had been given of the production of certain mountains by volcanic eruptions, was afterwards, by very intelligent men, applied to account for the existence of all mountains whatever. Mons. Pallas undertook to refute, by what he conceived undoubted facts, the antiquated opinion, that mountains arose from the waters. He travelled, by order of the Empress of Russia, through her dominions in Europe and in Asia; and during the course of a minute and fatiguing investigation, found that the majestic primitive chains of mountains of Siberia were all granite with a basis of quartz, more or less mixed with spars, mica, and little portions of basalt, scattered without order, and in irregular fragments. This ancient rocky substance, and the sand produced by its decomposition, he held to be the basis of all our continents. This granite he never found lying in strata or beds; it was either in blocks, or in masses, accumulated upon each other, and never exhibiting the least mark or vestige of petrification, or of organical impression. Besides which, he maintained, that in addition to these primordial mountains, there were others of a more recent origin. These he called secondary and tertiary: the former, which were schistous, he said, were produced at the sides of the primordial mountains, by the decomposition of the granite; the latter arose from the wrecks and contents of the sea, raised and transported by volcanic eruptions, and consequent inundations.

On an hypothesis somewhat similar, others have ingeniously contended that mountains were incontrovertibly produced by volcanos, and not volcanos by mountains. "The entire basis of the Island of Ischia," says Sir William Hamilton, "about eighteen miles in circumference, is formed by lava. The great mountain in it, formerly called Epomeus, and now San Nicolo, which is nearly as high as Vesuvius, was thrown up by degrees, and the entire island has arisen out of the sea." The same creation he gives to Vesuvius itself. "For why," said he, "should not Vesuvius, in a succession of ages, rise to two thousand feet, when it is well known Montagne Nuovo, near

near Puzzole, rose out of the Lucrine Lake in one night?" But, as I have already said, this was no new doctrine. An Italian writer published a book at Venice in 1740, in which he maintained that mountains had been raised in the sea by subterraneous fires, and had carried with them the shells of fishes, and other marine bodies usually found at the bottom of the ocean. Even in *Hooke's Discourse on Earthquakes*, published in 1688, mention is made of the bottom of the sea having been raised by subterraneous fires; and he accounts for the shells which are found on mountains from that principle, and thinks it not improbable that earthquakes were instrumental in occasioning the deluge. But, a mountain at Taberg in Sweden, said to consist entirely of *iron ore*, (the only ore, by the way, of which entire mountains have ever been found to be composed,) four hundred feet high, and in circumference about three miles, seemed to admit of no positive explication, but on the contrary, went to the solid conclusion, that no hypothesis proposed for the formation of mountains had yet proved satisfactory, or free from contradiction. No ore was found beyond the foot of this mountain. It appeared as if it had been artificially laid upon the land; and yet the bones of animals were found in its interior fissures.

It is no doubt matter of fact, that there are some eminences on this earth, improperly called mountains, which are little else than heaps of cinders and of pumice stones, cast up by eruptions, but aggregated and settled into masses. Yet, such are no sufficient refutation of the opinion, that volcanos, so far from being causes to operate to the raising of mountains, are directly the reverse, and most decidedly tend to their lowering and destruction*. The earth is rather depressed than elevated by forces from beneath.—No volcano, or earthquake, ever produced, within the knowledge of man, what should be called a mountain. The shock would be too great for the globe. In all the tremendous accidents, which have happened within the memory of record, has there ever been one, whence proof can be deduced that a granite mountain has been raised? The contrary I should suppose to be the case. Moreover, the configuration of their internal parts renders it incredible, that structures so uniform and regular, should have been produced by sudden explosions, or desultory succussions of the earth.

Borelli on this subject observed, that the fire of a volcano neither proceeded from the center, nor from the bottom of a mountain, but from the top; and that the inflammation never kindled but at a small depth. Buffon adopted the same opinion, and maintained, that the materials which issued from volcanos were always the same with those on the top of the mountains, only disfigured by calcination, and the melting of the metallic particles they contained. "Fire," says he, "it is known, acts equally on all sides. It cannot therefore act upwards with a force sufficient to throw large stones half a league high, without an equal re-action on the base and sides. Why, then, if the volcanic matter lies deep, does it not issue out of plains, where the resistance is less than on the top of mountains? This is not incon-

* Buffon.

sistent with their being the cause of considerable earthquakes, nor with their communication by subterraneous passages. It is not difficult to discover the reason why volcanos appear only in mountains. Greater quantities of minerals, sulphur, and pyrites exist in mountains than in plains. Mountains are more subject to the impressions of the air, and receive more rain and moisture, by which mineral substances are capable of being fermented to such a degree as to produce actual inflammation."

' But, ingenious as this idea is, it is not satisfactorily founded. Fire must be supposed much deeper than either the centers, or the bases of mountains. Buffon, indeed, acknowledges, that volcanos never exist but in high mountains; but yet he supposes that some are connected with others by subterraneous passages, the eruptions not unfrequently happening at the same time. "Volcanos," says he in his figurative language, "are immense caverns, with apertures often of more than half a league in circumference; and certain fanciful writers have considered them as vents to the central fire." Whatever others might have said upon this subject, or whatever Buffon himself might have conjectured, the fair result of investigation seems to establish that volcanos, (and they have been peculiar to no climate,) had neither a necessary, nor, in general, an accidental connection with other mountains*. With the sea, indeed, they invariably appear to have had the closest and most inseparable alliance. All such as have been traced in a living state, have been found, in general, in the neighbourhood of the sea. Those extinguished, though in the inland parts of countries, afford convincing proof that the sea had been in their vicinity, when they probably were in their strength. In Peru, they rest upon granite; in Hesse and Bohemia, on schistus; in Silesia, Italy, and other southern parts of Europe, on lime-stone; and all these substances are indisputably of aquatic origin. Subterraneous fires have existed universally in the bowels of the earth; and there is scarcely a country, where the ravages they have occasioned, are not to be traced. Mons. Condamine, in 1753, writes, that all the hills and mountains about Naples are huge heaps of matter vomited by volcanos, which are now extinct, whose eruptions, anterior to history, seem to have formed the ports of Naples and Puzzoli. He could trace lava the whole way from Naples to Rome. "It is impossible," says he, "for any one not to be satisfied of a perfect resemblance between the productions of Vesuvius and those he will meet with at every step in his way from Naples to Rome; from Rome to Viterbo; and from Rome to Loretto. When I see on an elevated plain," continues he, "a circular basin, surrounded with calcined rocks, the verdure with which the neighbouring fields are covered does not impose upon me; I instantly perceive the ruins of an ancient volcano. If there be a breach in the circle, I find out the passage of the torrent of lava. If there be no breach, the rain and spring waters, which assemble there, having no issue, generally form a lake in the mouth of the volcano. I look upon the Appenines and Cordeliers as a chain of volcanos. I do not, indeed, affirm that all

* • Kirwan.'

mountains

mountains are so. I could not observe the same appearances in the Alps; but I have found the same in Dauphiny and in Provence; and most countries afford instances of it."

What Condamine says, is certainly just.—The coast of Paufflippo, at Naples, the Capo de Monte, and the whole mass through which the catacombs are excavated, are all indurated tufa & piperno, which is so readily distinguished by its fragments of close grained lava. The shores from the ruins of Pompeia to the sea, for the distance of two miles, are known to be formed of pumice stone, pozzolano, and cinders, that fell in the year 79. In short, the whole sweep of the bay of Naples, from Stabea to Baia, is nothing more than volcanic matter, meliorated by time and culture into vegetable earth. On this subject Micheli published in 1733. He was the first who pursued the traces of volcanic productions among the Apennines, particularly in the neighbourhood of Radicofani. The observations of Condamine, however, seemed to establish one strong fact, namely, that the Alps has not the smallest vestige of a volcanic origin. Notwithstanding all this, the theory of the volcanic formation of all mountains was for a long time supported. Philosophers struggled for their opinion with a violence resembling that of their favourite element. But they were at length staggered. Farther observation gave increasing probability to Condamine's ideas relative to the Alps. Monf. De Saussure, the intrepid and respectable ornament of science, at present at Geneva, particularly supported them in one of his publications. "Jusques à ce jour," says this able man, "on n'a trouvé aucun vestige des volcans, ni dans nos environs, ni même dans toute la Suisse; & qu'après avoir visité moi-même en bien des endroits, & avec l'attention la plus scrupuleuse, toute cette partie de la chaîne des Alpes, qui s'étend depuis Grenoble jusques à Inspruck, je n'ai pas apperçu, à l'exception de quelques eaux Thermales, le plus léger indice de feux souterrains." But, of this, we shall have much more to say hereafter; I shall, for the present, merely remark that De Saussure himself has, since this publication, discovered indisputable volcanic remains, not, indeed, immediately among the Alps, but, in fact, not very distant from their neighbourhood.

After having discussed the doctrines of the infinite divisibility of matter, and of attraction, Mr. Sullivan proceeds, through the remainder of the first volume, to treat of the four elements. In this part of the work, many curious subjects are discussed in a manner which shews the author to be well acquainted with the modern chemical philosophy. On the much controverted subject of fire, the different opinions of philosophers are stated, particularly concerning *phlogiston*; the existence of which is maintained in opposition to the new theory. Under the article of Air, the late discoveries concerning different kinds of air are accurately related. With respect to water, the question whether it be a simple or a compound substance is ably discussed; the theories concerning the origin of rivers, and the ascent of vapours, are examined; the origin of glaciers is traced; and

St. Pierre's theory of the tides, drawn from the periodical increase and decrease, annual and diurnal, of the polar glaciers, is maintained to be attended with fewer difficulties than the lunar theory. Though we cannot find room for the whole of this ingenious disquisition, we shall copy the author's concluding remarks:

' This simple and plain deduction of the tides of the ocean, from the glacial effusions at the poles, is too novel and too unfriended, I am afraid, to be generally adopted. Yet it bears itself up, with a wonderful appearance of probability. The origin of the flow of rivers from masses of ice, supports it by analogy; and the phenomena of the spring and neap tides are accounted for, both by reasoning and by calculation. In the main of the ocean, for instance, it is proved that there are in general no tides. In the Caspian Sea, which is about 860 miles long, and in one part 260 miles broad, there are no tides, though there are strong currents. In the Baltic, there is no regular flux nor reflux. There is no tide in False Bay at the Cape of Good Hope, which has the aggregated masses of the Indian, Southern, and Atlantic Oceans. The same may be said of the Mediterranean, excepting in a few particularly situated spots, although in the Adriatic there is a flux and reflux. Why are the first of these considerable masses of the general body of the waters never raised, and the others always raised? And why is it, as Addison says, and as I have before remarked that, in summer, the lake of Geneva should have something like an ebb and flow, which arises, as it should seem, says he, "from the melting of the snow that falls into it more copiously at noon, than at other times of the day?"

' These striking deviations from, or rather contradictions to, the received theory of the tides, argue with me strongly, I confess, against the infallibility of the doctrine. I cannot but think we may have imposed upon ourselves, when we have abstractedly given the phenomena of tides, to the operating energy of causes arbitrarily imagined. However the phases of the moon may accord with the swellings of the water, may not both one and the other be looked upon as harmonious and co-ordinate effects of another distinct but powerful principle? What is the augmented quantity, or rather the increased elevation of the main body of the ocean, at the moment of a spring tide? Nothing, comparatively speaking. Does not the fact then seem to be, that it is not the mass of the ocean, which is diurnally raised, but, that it is the volume of the waters which is diurnally augmented? An increase of a fluid, we know, occasions an uniform augmentation in every direction. But, before it gets to its general level, should opposing bodies intervene, those opposing bodies which would otherwise impede its progress, must experience a considerable change in appearance from its unusual elevation. The shores of the northern and southern hemispheres may be considered as opposing bodies of this nature. The shape of the shores, indeed, and the depth of the beds of the rivers, will determine the greater, or the lesser height of the waters at their influx. For instance, in the Severn, the tides do not rise higher than a few feet; whereas in the Wye, whose tides are immediately derived from
the

the Severn, they rise to the extraordinary height of sixty feet. Can this be occasioned by any thing else, than a difference in the planes of the beds of these rivers? In a word, to my apprehension it appears, the swelling of the ocean, by the joint attraction of the sun and the moon, is less physically intelligible, than the periodical effusions of the polar ices: and more especially, as we experimentally know, that the sun's attraction of a fluid occasions its *evaporation*, not its elevation; and that the influence of the moon, if it has any, is at best but problematical, and feeble in its operation.

'It has, indeed, been said, that the lunar energy has been demonstrated, beyond the power of contradiction; and that besides its wondrous influence on the element of the waters, it can be further, and perhaps more clearly proved on the element of the air. This is going a great way. Give such energy, indeed, to the sun, and I am satisfied. But, if one be erroneous, the other must be erroneous. Or if one be true, the other must be true; for the ocean of the fluid air must be affected, as well as the ocean of the fluid water; and in a considerably greater degree, as it has eight hundred times its levity.

'Upon the whole, then, the theory of the polar effusions seems to me, to have less difficulties attached to it, and to demand less implicit faith, than the theory of the solar and lunar attractions.'

Under the general head of Earth, among other subjects, that of crystallization is particularly discussed, and various kinds of substances, produced by crystallization, are described. Treating of calcareous earths, Mr. S. returns to a subject which he seems to have studied with particular attention,—the formation of mountains,—and entertains his readers with many curious facts and ingenious observations, for which we must refer to the work.

[To be continued in the next Review.]

ART. II. *An Essay on the Materia Medica.* In which the Theories of the late Dr. Cullen are considered: Together with some Opinions of Mr. Hunter, and other celebrated Writers. By James Moore, Member of the Surgeons Company. 8vo. pp. 330. 5s. Boards. Cadell.

MANY sensible remarks are presented to us by the author of this essay. He follows Dr. Cullen regularly through his treatise on the *Materia Medica*; previously noticing the obscure and unsatisfactory doctrine of temperaments:—but on this subject we do not meet with much important matter.

Dr. Cullen divides his treatise into two parts: the first speaks of Aliments: the second, of Medicines. On the former of these heads, Mr. Moore's reasonings are judicious; and we were, in particular, pleased with his sentiments on a controverted question: namely, whether a degree of putrescency takes place in the blood, while circulating in the living vessels. He says:

• Having