

Tapeworms (human entozoa) : their sources, nature, and treatment / by T. Spencer Cobbold.

Contributors

Cobbold, T. Spencer 1828-1886.
Francis A. Countway Library of Medicine

Publication/Creation

London : Longmans, Green, 1866.

Persistent URL

<https://wellcomecollection.org/works/ucvcwuff>

License and attribution

This material has been provided by This material has been provided by the Francis A. Countway Library of Medicine, through the Medical Heritage Library. The original may be consulted at the Francis A. Countway Library of Medicine, Harvard Medical School. where the originals may be consulted. This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

Tapeworms

Copyright © 2004 John Wiley & Sons, Ltd.

COBBOLD



BOSTON
MEDICAL LIBRARY
ASSOCIATION

Section

10

Shelf

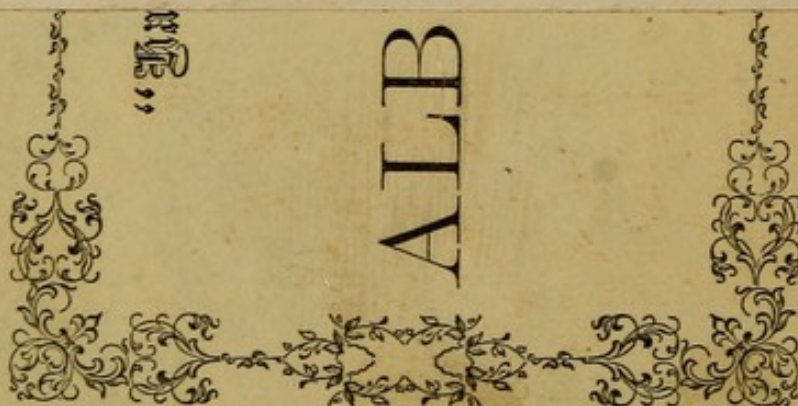
6

No.

10

GIVEN BY

Dr. Albert Day





Bind
aon

20 May

HUMAN ENTOMOZOA

LONDON
PRINTED BY SPOTTISWOODE AND CO.
NEW-STREET SQUARE

T A P E W O R M S

(HUMAN ENTOMOZOA)

THEIR SOURCES, NATURE, AND TREATMENT

BY

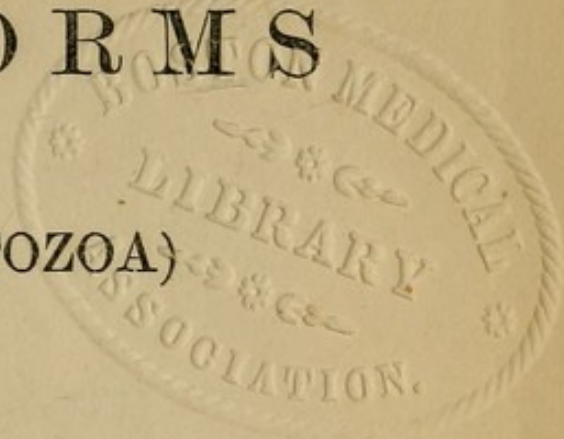
T. SPENCER COBBOLD, M.D. F.R.S.

LECTURER AT THE MIDDLESEX HOSPITAL

LONDON

LONGMANS, GREEN, AND CO.

1866





✓

PREFATORY NOTE.

ESSENTIALLY PRACTICAL in its character, this little work is not intended to supersede my larger treatise on 'Entozoa.'

The favourable reception of that work by the profession and by the scientific public leads me to believe that a less expensive volume, free from unnecessary technicalities, may not prove unacceptable.

I have purposely limited my remarks to one great group of the numerous parasites which invade the human body; but to render the work generally useful, I have added a complete list of the human entozoa in the introduction.

The Appendix is based upon observations which I publicly communicated at the last meeting of the British Association held at Birmingham.

The experience I have acquired in practice has led me to insist strongly on the employment of pure and freshly prepared drugs. In old standing cases of tapeworm and threadworm (*Ascarides*) attention to this point will often command success, even where the same drug had been previously used.

T. S. C.

84 WIMPOLE STREET, CAVENDISH SQUARE:

June 1, 1866.

CONTENTS.

	PAGE
INTRODUCTION	1
THE ARMED, OR PORK TAPEWORM	11
THE UNARMED, OR BEEF TAPEWORM	33
THE PIT-HEADED, OR BROAD TAPEWORM	41
THE GREENLAND TAPEWORM	44
THE ELLIPTIC TAPEWORM	46
THE MARGINED TAPEWORM	47
THE TRIPLE-CROWNED TAPEWORM	49
THE SPOTTED TAPEWORM	50
THE RIDGED TAPEWORM	52
THE EGYPTIAN, OR DWARF TAPEWORM	54
THE HYDATID-FORMING TAPEWORM	55
APPENDIX	73

THE HISTORY OF THE

PROGRESS OF THE

ART OF PRINTING IN

ENGLAND, FROM THE

INTRODUCTION OF THE

PRINTING PRESS, TO THE

PRESENT TIME.

BY

JOHN BARNARD, ESQ.

OF THE MIDDLE TEMPLE.

IN TWO VOLUMES.

LONDON, 1774.

Printed by J. BARNARD, at the

PRINTING OFFICE, in

ST. MARTIN'S LANE.

AND BY J. BARNARD, at the

PRINTING OFFICE, in

ST. MARTIN'S LANE.

AND BY J. BARNARD, at the

PRINTING OFFICE, in

ST. MARTIN'S LANE.

AND BY J. BARNARD, at the

PRINTING OFFICE, in

ST. MARTIN'S LANE.

AND BY J. BARNARD, at the

TAPEWORMS



INTRODUCTION.

PERSONS entertain remarkably different views respecting the dealings of Providence in relation to the welfare of the human species. It is certainly difficult in every case to trace a direct connection between wrong doing and suffering, and most people believe that, whatever inconveniences they have to put up with here below, all is ordered for the best. Whilst they enjoy good health, and are not troubled with internal parasites, this kind of doctrine is extremely agreeable to them, but when they find themselves constituted as 'hosts' or 'entertainers' of certain well known forms of entozoa, they begin to doubt the need-be for such an arrangement in the parasite's favour. The fiery serpents of the wilderness (*Dracunculus medinensis*)

and the worms which devoured King Herod, assure them that the possession of similar 'guests' must be regarded as a special evidence of Divine displeasure; yet, when they think the matter over more considerately, they cannot understand how it is that all the higher animals are liable to the same or similar verminous disorders. The difficulty of maintaining their original and preconceived opinions becomes considerably enhanced when they further reflect upon the intimate relation subsisting between the forms of parasites dwelling in the human territory and those occupying the bodies of our domestic animals. The difficulty becomes yet further increased when it is found (by the light of modern scientific discovery) that certain of the forms in question are only stages of growth of one and the same parasitic creature, whose welfare and existence is absolutely dependent upon the life of either 'host.' Moreover, as in the case of the so-called common tapeworm, the human 'host' must devour part of the animal 'host,' the migration of the parasite being effected passively and independently of any will on its part. Paradoxical as it may

seem, we human beings are essential to the existence of particular species of tapeworm. It is only by accepting Mr. Darwin's hypothesis that we can escape the undignified conclusion that parasites were specially created to dwell in us, and consequently, also, that we were destined to entertain them. Whatever view we may adhere to, the facts speak for themselves. Undoubtedly the human body, in common with the bodies of animals, constitutes a peculiar territory for entozoa. To reside in this home of theirs, and to enjoy themselves at our expense, is their especial prerogative. The entire organisation of these creatures is admirably contrived for this purpose. Some will resist extremes of heat and cold. Many are furnished with a special cyst or protective covering. Most of the juvenile forms are supplied with a tearing or boring apparatus, the same creatures in their adult condition having remarkable 'hold-fasts' for the purpose of anchorage. For details respecting the varied and singular arrangements which obtain in many of the species, I must refer the reader to my larger treatise; but in order to

convey some general notion of the character, number, and variety of entozoa which have been called into existence, I append a detailed list of those species at present known to infest the human body. Exclusive of external parasites (ectozoa), the following helminthic and other creatures have been recorded as infesting man :—

HUMAN ENTOZOA.

CESTODES.

1. The pork tapeworm—*Tænia solium*, Linneus. *Tænia humana armata*, Brera. *Tænia lata*, Pruner.
2. The beef tapeworm—*Tænia mediocanellata*, Küchenmeister. *Tænia inermis*, Moquin-Tandon. *Tænia cucurbitina grandis saginata*, Goeze.
3. The broad tapeworm—*Bothriocephalus latus*, Bremser. *Tænia lata*, Pallas. *Tænia humana inermis*, Brera.
4. The Greenland or heart-shaped headed tapeworm—*Bothriocephalus cordatus*, Leuckart.
5. The dwarf or Egyptian tapeworm—*Tænia nana*, Siebold. *Tænia ægyptiaca*, Bilharz.
6. The elliptically-jointed tapeworm—*Tænia elliptica*, Batch. *Tænia cucumerina*, Bloch. *Tænia canina*, Pallas.
7. The crested or ridge-jointed tapeworm—*Tænia lophosoma*, Cobbold.
8. The spotted tapeworm—*Tænia flavopuncta*, Weinland. *Tænia flavomaculata*, Molin.

LARVAL CESTODES.

9. The hydatid or acephalocyst—*Echinococcus hominis*, Rudolphi. *Acephalocystis endogena*, Hunter. Juvenile stage of growth of *Tænia echinococcus*, Siebold.
10. The pork or common 'measle'—*Cysticercus cellulosæ*, Rudolphi. *Finna humana*, Werner. An early or so-called scoleciform stage of the *Tænia solium*.
11. The slender-necked hydatid—*Tænia hydatigena*, Pallas. *Cysticercus tenuicollis*, Rudolphi. The larval stage of the *Tænia marginata*, Batsch.
12. The triple-crowned hydatid—*Cysticercus acanthotrias*, Weinland. The larval or scoleciform stage of an undiscovered tapeworm.

NEMATODES.

13. The fleshworm or spiral threadworm—*Trichina spiralis*, Owen. *Pseudalius trichina*, Davaine.
14. The common threadworm or maw-worm—*Oxyuris vermicularis*, Bremser. *Ascaris vermicularis*, Linneus.
15. The common roundworm—*Ascaris lumbricoides*, Linneus. *Lumbricus teres hominis*, Tyson.
16. The moustached roundworm—*Ascaris mystax*, Rudolphi. *Ascaris alata*, Bellingham.
17. The common whipworm—*Trichocephalus dispar*, Rudolphi. *Ascaris trichiura*, Linneus. *Trichocephalus hominis*, Goeze.
18. The human lung-strongle—*Strongylus bronchialis*, Cobbold. *Filaria bronchialis*, Rudolphi. *Strongylus longevaginatus*, Diesing.
19. The human intestinal strongle—*Strongylus quadridentatus*, Siebold. *Sclerostoma duodenale*, Cobbold. *Anchylostoma duodenale*, Dubini.

20. The renal or great strongyle—*Strongylus gigas*, Rudolphi. *Eustrongylus gigas*, Diesing. *Lumbricus in renibus*, Blasius.
21. The guineaworm—*Filaria medinensis*, Gmelin. *Filaria dracunculus*, Bremser. *Dracunculus medinensis*, Cobbold.

LARVAL NEMATODES.

22. The loa—*Filaria oculi*, Gervais and Van Beneden. *Dracunculus oculi*, Diesing. *Dracunculus loa*, Cobbold.
23. The eye threadworm—*Filaria oculi humani*, Nordmann. *Filaria lentis*, Diesing.
24. The tracheal threadworm—*Nematoideum tracheale*, Rainey and Bristowe. *Filaria trachealis*, Cobbold.

TREMATODES.

25. The common fluke—*Fasciola hepatica*, Linneus. *Distoma hepaticum*, Abildgaard. *Fasciola humana*, Gmelin.
26. The lancet-shaped fluke—*Distoma lanceolatum*, Mehlis. *Distoma hepaticum*, Zeder. *Fasciola hepatica*, Bloch.
27. The broad fluke—*Distoma crassum*, Busk. *Distoma Buskii*, Lankester. *Dicrocælium Buskii*, Weinland.
28. The blood infesting fluke—*Distoma hæmatobium*, Bilharz. *Gynæcophorus hæmatobius*, Diesing. *Bilharzia hæmatobia*, Cobbold.
29. The Egyptian fluke—*Distoma heterophyes*, Siebold and Bilharz. *Dicrocælium heterophyes*, Weinland. *Heterophyes ægyptiaca*, Cobbold.

LARVAL AND DOUBTFUL TREMATODES.

30. The four-suckered fluke—*Tetrastoma renale*, Delle Chiaje. Probably, the sexually immature condition of a *Polystoma*.
31. The fat-infesting fluke—*Polystoma pingucicola*, Zeder. *Hexathyridium pingucicola*, Treutler *Pentastoma denticulatum*, according to Gervais and Van Beneden.
32. The vein-infesting fluke—*Polystoma venarum*, Zeder. *Hexathyridium venarum*, Treutler. The young of *Distoma hepaticum* or of *Distoma lanceolatum*, according to Davaine.
33. The eye-infesting fluke—*Distoma ophthalmobium*, Diesing. *Distoma oculi humani*, Gescheidt. The juvenile condition of *Distoma lanceolatum*, according to Leuckart.

ACARINE PARASITES.

34. The armed pentastome—*Pentastoma denticulatum*, Rudolphi. *Linguatula tænioides*, Lamarck. The young of *Pentastoma tænioides*, according to Leuckart.
35. The smooth pentastome—*Pentastoma constrictum*, Siebold. *Linguatula constricta*, Küchenmeister. *Nematoideum hominis*, Pruner.

PARASITES OF OTHER CLASSES.

36. The vaginal monad—*Trichomonas vaginalis*, Donne, Davaine, Leuckart, Kölliker.
37. The leaping monad—*Cercomonas saltans*, Ehrenberg, Wedl, Leuckart.
38. The urinary monad—*Cercomonas urinarius*, Hassal, Leuckart.

39. The intestinal monad — *Cercomonas hominis*, Davaine. *Cercomonas intestinalis*, Lambl. *Balantidium coli*, Lachmann. *Paramecium coli*, Malmsten.
40. The blood animalcule — *Bacteridium sanguinis*, Davaine, Jamin, and others.
41. The human psorosperm—Eggs of *Distoma hepaticum*, according to Gubler; variously described by Virchow, Dressler, Lindemann, Leuckart, Beale, Cobbold, and others.

Such is the list; yet I have omitted all mention of the numerous forms of insect larvæ which have been recorded as intestinal worms. The Rev. J. F. Hope's catalogue alone enumerates forty-three different kinds or species. Undoubtedly some of them, perhaps the majority, have really come from man; but, since it cannot be shown that the human body is, in any sense, their proper home, habitat, or territory, I do not choose to regard them as entozoa in any technical sense of the word. Their presence is invariably accidental, so to speak.

Again, none of those parasites which infest or penetrate the skin are included in the above list. The *Entozoon* or *Demodex folliculorum* and its allies are therefore omitted. In like

matter, I have had still less hesitation in rejecting a variety of reputed entozoa, which, in truth, either do not belong to the human body, or, as most frequently happens, are no parasites at all. Amongst these may be mentioned the *Spiroptera hominis*, which is the common *Filaria* of fishes; Farre's *Diplosoma crenatum*; Curling's *Dactylius aculeatus*; De Gland's *Nematoideum hominis*, which is the common hair-worm or *Gordius aquaticus*, so frequently employed to deceive the medical practitioner; Cloquet's *Acephalocystis racemosa*, or hydatigenous formations connected with the chorion; Sultzer's *Ditrachyceras rudis*, and such-like matters, which, when carefully investigated, have turned out to be extraneous substances, macerated and deprived of their original character during their passage through the alimentary canal. Scarcely a week passes that I do not receive reputed worms of this nature, either from patients or their medical advisers. Sometimes these pseudelminths are really so worm-like that a mere naked eye examination is insufficient to determine their nature. In such cases, the expressed opinion

of a well-informed helminthologist is occasionally of great value, as a subsidiary means of diagnosis and prognosis, often, at the same time, bringing great relief to the patient's mind.

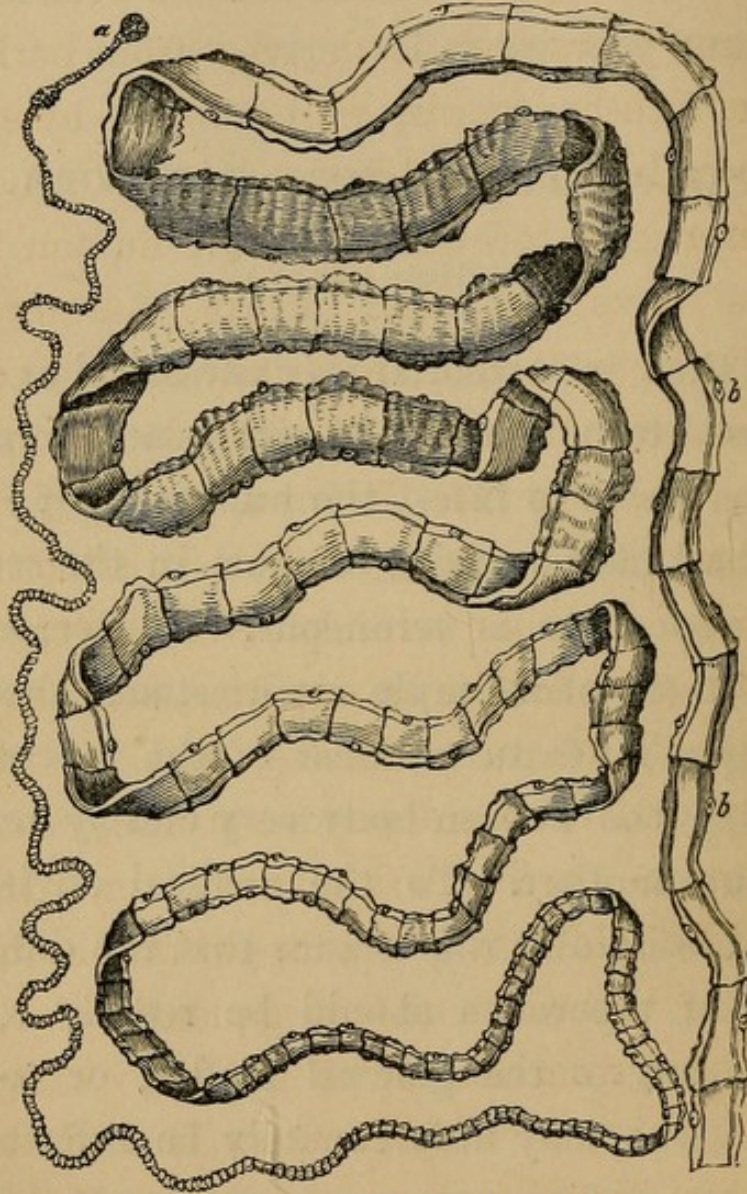
THE ARMED, OR PORK TAPEWORM.

(*Tænia solium*.)

FROM time immemorial this parasite has been supposed to be one of the commonest forms of entozoa liable to infest the human body; but, as I shall take occasion to show in the sequel, this supposition is erroneous. The error has arisen from the simple circumstance that, in their general features, most of the tapeworms infesting the human body very closely resemble one another. To the medical adviser it is of considerable importance that the different forms of tapeworm should be readily recognised; but to the general reader, or to the patient who may unfortunately be infested, it is a matter of no very great consequence. To enter minutely into the differences subsisting between the two commonest forms of human tapeworm is not my present purpose, since to

render these distinctions clear, it would be necessary to supply a series of illustrations.

FIG. 1.



The Pork Tapeworm (*Tænia solium*), showing the head (*a*), neck, and part of the body (*b*). Reduced to one half the natural size.

Those, therefore, who on professional or scientific grounds desire to make themselves masters

of the subject should consult the larger treatise referred to in my preface.

The armed tapeworm, as has now been known for many years past, is derived from pork; or rather, in other words, we obtain it by eating the so-called 'measly' flesh of swine. A general impression prevails, that all human tapeworms have a similar origin, but without entering into particulars, I may state, once for all, that such a notion is entirely groundless. Every tapeworm has its own special form of larva, and the larva itself is as distinctive as is its own peculiar adult parent. Every full-grown tapeworm has an appetite, so to say, for a certain kind of residence, and, as in the species under consideration, usually confines itself to one particular kind of bearer. It may almost be said that every tapeworm has its own 'host' or 'bearer,' and consequently also, that every bearer carries, or is liable to carry, his own tapeworm. Very contrary, indeed, does it appear to the presumed dignity of the human species, that man should be, as it were, singled out as the legitimate home and territory of a tapeworm; but not only is this the case, but

science almost teaches us to aver that, so far as this life is concerned, man appears to have been made expressly for the accommodation of certain tapeworms. At all events, without man, two apparently distinct species of tapeworm could not, it would seem, exist. The armed tapeworm has never yet been found in any 'host' save man, and the same may be said of the unarmed human species. Of course, in making the above statement as regards cause and effect, I am only, for the time, adopting the ordinary mode of teleological reasoning; but however logical the deduction may at first sight appear, I need not say that I can hardly bring myself to believe in the correctness of such a conclusion.

The perfect armed tapeworm, as it is usually presented to the observer, is a long, soft, whitish, jointed animal, which, when alive, elongates and contracts itself with great facility. Though commonly spoken of as a single animal, it is in truth a compound of many individuals. These individuals are called 'cucurbitini,' 'zooids,' or 'proglottides,' by scientific persons, and they are likewise occasionally termed links,

or joints. By whatever name they are called they represent so many distinct segments of the body, and, when fully grown, they are capable of detaching themselves and of enjoying a free and independent existence. Very annoying it is to the human bearer to be continually reminded by his unwelcome 'guests' that, for their own pleasure or life-necessities, they desire to quit his interior. Not, indeed, do they oblige him by departing all at once; but their habit is to wander, solitarily and in succession as it were, as if purposely 'to plague his very life out.' This expression is one which is not uncommonly used by persons thus afflicted; and I have seen one or two individuals so emaciated by the discomforts arising from the presence of tapeworm, that in reality life itself had almost been 'plagued out.' To say the least, such individuals have wished themselves deprived of existence.

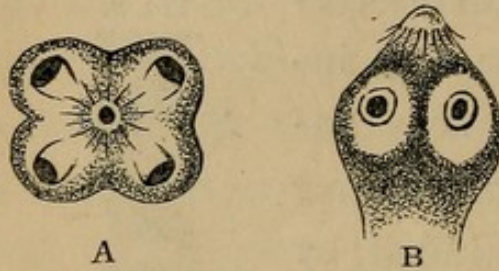
FIG. 2.



Portion of the body of *Tænia solium*, with a naturally produced knot. (b) Reproductive papilla.

The head of the armed tapeworm is characterised by the possession of four sucking disks

FIG. 3.



Head of *Tænia solium* viewed from above (A) and in front (B). Enlarged, and drawn with the aid of a camera. Original.

or cups and a proboscis or rostellum armed with hooks.

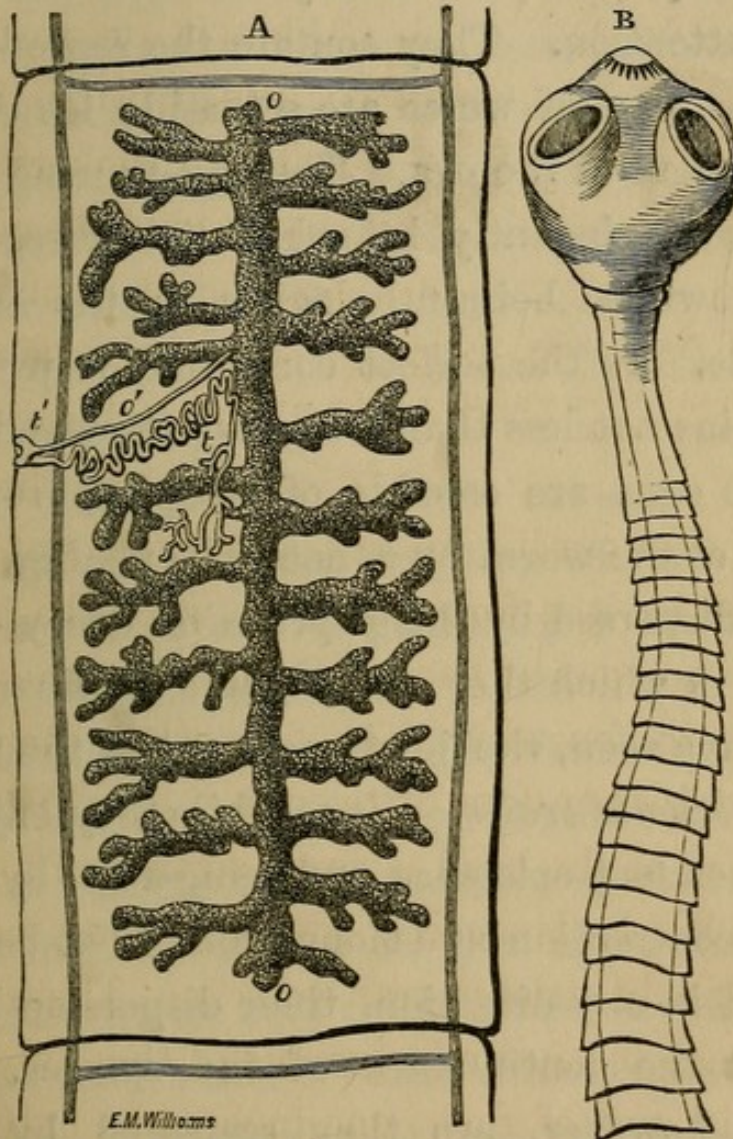
The suckers are placed at the corners of the somewhat

square-shaped head, the rostellum being situated at the cen-

tre and summit. In the projected state this process has the form of a cone whose base supports two rows of hooks. Each row carries from twelve to fourteen hooks, so that there are usually twenty-four or twenty-eight altogether. The size of the head is equal to that of a small pin-cap. It is succeeded by a long narrow neck, finely striated transversely. These striæ represent the future segments of the body, and at a distance of about one inch and a half from the head, their joint-like character can be detected with the aid of a pocket lens. Further down, the joints soon acquire their characteristic individuality, and at about the four-

hundred and fiftieth segment their internal sexual organs become fully developed. In a

FIG. 4.



Head and neck (B), and one of the sexually mature joints (A) of *Tania solium* (after figures by Blanchard), showing more particularly the branched egg-bearing organ (o) filled with ova. It also shows the oviducal canal (o'), the cirrus (t), and the external outlet (t'). Enlarged.

fully grown worm we may count as many as twelve hundred segments, that is, including the

immature or imperfectly formed joints of the attenuated neck.

The perfectly formed joints demand separate attention. They contain the reproductive organs, part of which are set aside for the development of the ova. The egg-bearing organ forms an elegantly branched structure, which is known to helminthologists as the uterine rosette. In the perfect condition, it probably contains not less than forty-five thousand eggs. These eggs are capable of escaping from the body of the worm by a natural opening, being also dispersed by the rupture or decay of the joint in which they are lodged. Ordinarily, as we have seen, the joints pass out of the 'host' *per vias naturales*. For a while they enjoy an independent existence, and being able, by alternate contraction and elongation of the body, to travel in any direction, their dispersion brings about the continuance of the species. Not only, however, are they scattered by these natural means, but they are also, passively as it were, transported by sewage distributors and other benevolent persons. Various agencies in earth, air, and water, lend a helping hand.

In consequence of this distribution, swine

experience little difficulty in picking up more or less of the eggs; and as these eggs measure only the $\frac{1}{700}$ of an inch in diameter, it is easy to understand how we ourselves may be liable to swallow them. In short, the wonder is that we escape infection at all, considering that scores might exist in a glass of water without our being able to see any of them by the naked eye. It must be borne in mind that every perfect egg contains a young tapeworm larva. This larva or embryo measures about $\frac{1}{1250}$ of an inch in breadth; and in place of a crown of anchorage-hooks, it carries six small weapons arranged in three pairs, one central and two lateral. The central pair are simple stilettos for boring, the lateral being used as tearing and locomotive agencies. At all events, by means of this apparatus, the little creature is able to thrust its way through soft animal tissues. When, therefore, a tapeworm egg is swallowed by a pig and transferred to the stomach, the gastric juice dissolves the egg-shell, and the little embryo is set free. The juvenile parasite immediately thereafter proceeds to bore through the walls of the

stomach, and travels onward until it reaches a convenient resting-place. Usually it selects the intermuscular cellular tissue, but, not being very particular in its choice, it may prefer the

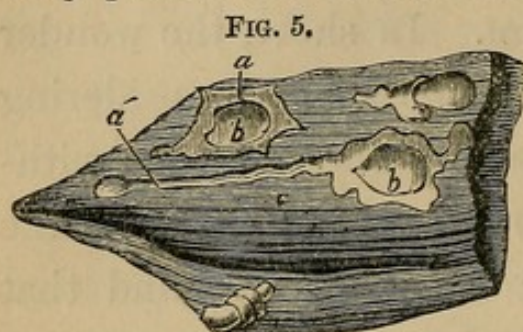


FIG. 5.
Portion of muscle with 'measles' in its substance: *a a'*, the cysts; *b b'*, the tapeworm larvæ.

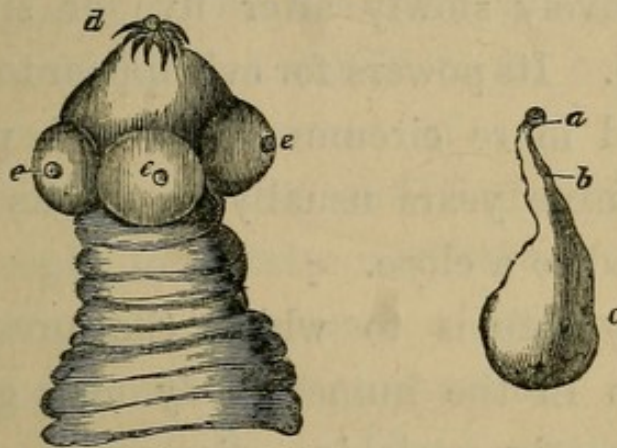
substance of the muscles themselves, or may take up its abode in the liver, brain, or other organs of the body of the animal. The

pig is thus, in common parlance, 'measled.'

Measly pork is probably not so common as formerly; nevertheless it is sufficiently abundant to produce tapeworms, more especially amongst the poorer class, whose meat is not always too carefully inspected before it is purchased. Moreover, it should be borne in mind that a pig might contain many measles, and yet be properly deemed a healthy animal; nay, more, if only a few measles existed, the most careful meat inspector would be almost sure to overlook their presence. As a rule, it may be said that pigs reared in the neighbourhood of thickly populated districts are very likely to

be measly, whilst those reared in country districts are seldom or never so. This explains why so large a part of the community resident in the country escape infection.

FIG. 6.



Cysticercus (telæ) cellulosæ; *a b c*, head, neck, and body of the natural size; *d e*, the crown of hooks and suckers magnified.

The ingestion of measly pork which is not thoroughly cooked gives rise to the formation of the armed tapeworm in the intestinal canal. The larva being set free from its capsule by the action of the gastric juice, attaches itself to the lining membrane of the bowel. For many weeks, or even months, no indication of the presence of the tapeworm is perceptible, but after the expiration of from twelve to sixteen weeks fragments of the worm may be discovered to have passed *per anum*. By this

time, at least, the tapeworm reaches its adult condition, and if nothing be done to dislodge it, the worm may remain within the bearer for six, eight, ten, or even twelve years. So far as my observation extends, the worm grows comparatively slowly after five or six years' residence. Its powers for evil appear to become more and more circumscribed, and probably eight or nine years usually brings its natural life-period to a close.

The symptoms to which the presence of tapeworm in the human body may give rise are extremely variable. Sometimes, indeed, the bearer is fortunate enough to be little inconvenienced by his guest; but even in such instances the immunity from injury is rather apparent than real. It is apparent, inasmuch as the parasite gradually, and to the bearer unknowingly, steals away a portion of his health. The trifling feelings of weariness and lassitude are usually set down to other causes, and it is only when these indications are succeeded by restlessness, nervous irritability, and headache, that proper attention is paid to the true source of these symptoms. Rather than let any fellow-

creature know the fact of their having tapeworm, many persons will not only endure any of these troubles, but even submit to the still more annoying inconveniences arising from the constant passage of the worm-segments. So revolting is it to human nature, especially to refined and educated minds, to be called upon to entertain the presence of such creatures, that only the gravest sufferings will induce some people to obtain medical advice. This applies not only in the case of tapeworms, but also to many other human parasites. Happily, but few individuals are dangerously affected by these unwelcome guests.

In bad cases the foregoing symptoms become greatly aggravated. The headache is much increased, and often accompanied with vertigo or giddiness. The sight and hearing may be affected. Noises in the head, itchings at the nose and anus, obscure pains about the body and limbs, loss of appetite, and other dyspeptic symptoms show themselves in greater or less degree in different cases. One of the most common symptoms, however, which I have noticed, is the tendency to faintness. This

is sometimes so marked as to create much alarm, and a person uninformed as to the true cause of the disorder, might be led to treat the symptom as arising from a totally different source. In female patients, the nervous symptoms display features more or less peculiar to the sex. The restlessness and anxiety is excessive, and at times accompanied with chorea and fits of hysteria. In the worst cases, in both sexes, the cerebral disturbance may show itself in convulsions and epileptiform seizures. I regret to have to add, that in not a few instances even mania itself has been entirely attributable to the presence of tapeworms in the intestinal canal.

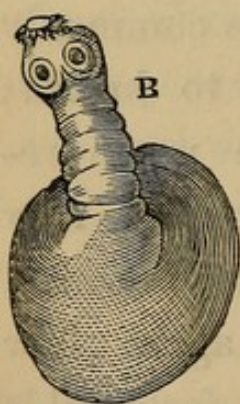
Amongst the more remarkable, I may mention three anonymously reported cases: one of amaurosis, one of convulsions, and one of epilepsy. Another case of amaurosis from tapeworm is recorded by Burgiss. Of those presenting very peculiar features, the case with 'masked symptoms' by W. D. Moore, a case by Steinbeck, and that attended with 'irritability of the bladder and stricture of the urethra' by Tuffnell, are worthy of espe-

cial notice. Mr. J. F. Streatfield publishes a case where tapeworm appears to have caused squint; and Ettmüller records an example of hysteria produced by no less than eighteen tapeworms in one single patient. Cases of insanity arising from tapeworm are more or less fully reported by W. Wood, Ferrus, Ryan, Davey, and Winslow. One case of mania of eight years duration was completely cured by the evacuation of the offending parasite, and a similar happy result followed treatment in Mr. Hutchings' example of convulsions arising from the same cause. In all severe cases the evacuation of the worm is commonly attended with perfect restoration to health; but in those instances where the worm re-developes itself, the return of the malady may be expected. It by no means follows, however, that the identical symptoms will again show themselves, although, in the less formidable attacks, this not unfrequently takes place.

In regard to the evils produced by the larvæ of the armed tapeworm, comparatively little need be said; and yet, some sixty or seventy cases are on record where these measles or

cysticerci in the human body have caused death. My reason for now saying little on the subject arises from the circumstance that I have already treated of it at very considerable length in my larger work. It is also worthy of remark that when these larvæ occasion any mischief to man, they do so by reason of their presence in the brain. In this organ they are totally beyond our reach; and though in a few cases their existence in this situation has been successfully diagnosed during life, yet we have no means in our power to cure the

FIG. 7.



'Measle' removed from the human eye by Dr. Mackenzie. B, the head and neck, magnified five diameters.

disorder. I believe cases of epilepsy, epileptiform seizures, and convulsions arising solely from this cause, are much more common than is generally supposed. I have seen several measles taken post mortem from the human brain; and in some cases the presence of these parasites during life was, naturally enough, not even suspected. Occasionally, cysticerci are found in various other parts of the body, but it is seldom

that they give rise to any marked symptoms. The explanation of their occurrence in any part of the human body seems sufficiently simple. Either they are introduced in the egg condition from without with food, or, by regurgitation, patients may infect themselves. What I mean is this;—the embryos of a tapeworm, when brought in contact with the gastric juice, are liberated from their egg-coverings by chemical decomposition of the latter. Two or three instances have come to my knowledge of tapeworms being passed by the mouth, i.e. by regurgitation. No doubt in the particular case reported in the French journals, where upwards of two thousand ‘measles’ were found in the human body after death, the larvæ had been liberated in this manner. The six-hooked embryos escaping their shells, migrated, as it were, on their own account. Thus, we see, it is possible for an individual having tapeworm to infect himself with the so-called pork-measle.

Apart from the comparative rarity of their occurrence, so extremely diverse are the symptoms produced by the presence of larval tapeworms in the brain, that a correct diag-

nosis becomes extremely difficult. Successful prognostications have, however, been made in one or two cases. Occasionally, these brain-guests afford no indication whatever of their presence during life. At other times there is only slight cerebral irritation, with more or less headache. Griesinger, who has collected records of upwards of fifty cases of cysticerci in the brain, avers that as a rule the physical disturbances have nothing characteristic about them. You may have epileptiform seizures, with or without permanent mental perturbation. There may be more or less complete imbecility, or, on the other hand, true maniacal symptoms. In place of, or at times associated with, these formidable indications, one may encounter a very peculiar set of symptoms, such as squinting, alteration in the pupils, avoidance of light, coma, and anomalous sensations in the limbs. In the case recorded by Mr. Ottley, the parasite gave rise to distressing fits, convulsions, and death; whilst in that which occurred in King's College Hospital in 1855, the poor sufferer's epileptic fits were amongst the most formidable which Dr. Duffin ever witnessed. Illustrations

of the post-mortem appearances in this case, from Mr. Hulke's pencil, are given in my larger work.

In regard to *treatment* it is satisfactory to be able to say that, in so far as the full grown worm is concerned, we have entire mastery over the parasite. We may not, it is true, in every instance, succeed in curing the patient at once, but in the majority of instances this ought to be accomplished. Probably at least half a dozen different drugs will effect the purpose equally well, provided only due regard be had to the mode in which it is administered. Above all, it is most essential that the drug itself be perfectly pure. Cases have come under my knowledge where the successful result manifestly depended upon the source whence the drug was procured, previous administrations of the same remedy from a different druggist having proved entirely useless. Attention to recorded facts bearing on this subject will also, to some extent, explain how it is that different prescribers have arrived at such various conclusions respecting the power of particular remedies. The unsuccessful employment of a particular

remedy is not always attributable to the nature of the prescription itself, but rather to the quality of the article supplied. On the other hand, it must be allowed that there are not a few instances in which the unsuccessful exhibition of the best drugs is dependant upon causes over which we cannot exercise a perfect control.

The remedies for tapeworm are, *par excellence*, male-fern, kousso, kamala, turpentine, panna, pumpkin seeds, and pomegranate-root bark. The right administration of any one of these is likely to produce the desired result, but many others might be mentioned as having been recommended more or less strongly. Some persons seem to think that one vermifuge is just as good as another. Because they find santonine a highly useful remedy for threadworms, it by no means follows that the same drug is effective, or even useful, in tapeworm. Santonine is an excellent oxyuricide and lumbricide; but I agree with Dr. Charles West, that it is of little use in tapeworm. When so many admirable remedies abound, it were a waste of time to dwell upon the virtues of

second and third rate drugs, such as oxide of silver, tin, scammony, and other drastic purgatives, which do not appear to exert any poisonous influence on the worm itself.

Supposing it were necessary to try a variety of drugs in one or more particular cases, the order in which I have placed the seven best remedies above, is that in which I should be disposed to try them successively. Of course in no individual case is one ever likely to be called upon to adopt such a practice. Not that I regard the first-mentioned drugs as *tæniacides* superior to the others, but that, all things being considered, I should prefer them in the order they there stand. Probably there is no better remedy for tapeworm than oil of turpentine, and yet its nauseous character, combined with the fact that it not unfrequently produces irregular and violent effects, are circumstances which always induce me to recommend other remedies in the first instance. From cases which have come under my notice, as well as from the laudations bestowed upon turpentine by various writers, I have no doubt whatever as to the anthelmintic virtues of this drug.

The mode of administration of the different tæniacides is not altogether a mere matter of taste. True, if your drug is good, you are not unlikely to succeed with any form employed; but of this one point you may be quite certain, that some preparations of the same article are infinitely preferable to others. Thus:—never administer the powdered male-fern root if you can get the properly prepared ethereal extract. The powder is very liable to lose its strength by long keeping, and it is, perhaps, more easily adulterated than the extract. This rule applies to other anthelmintics in the powdered form. I have found the happiest results follow the administration of the oil of male-fern, where the powdered root was absolutely useless. Herein also lies, partly, the objections raised against kousso. In itself, it is a first-rate vermifuge, but the great quantity required to be swallowed is highly objectionable, especially in the case of young children. Even decoctions, as in the instance of pomegranate-root bark, are open to a similar objection on account of the quantity necessary to be exhibited.

THE UNARMED, OR BEEF TAPEWORM.

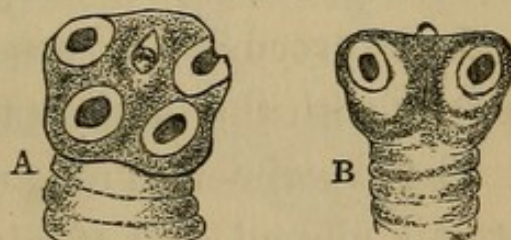
(*Tænia mediocanellata*.)

IF I were to speak of this parasite as the common tapeworm the majority of people would suppose that I was referring to the species previously described; and yet the facts of the case would warrant me in styling this worm as the most common of all *tæniæ* liable to invade the human body. In general appearance, it is very similar to the armed form, at least, when viewed by the naked eye. Commonly it is a larger and broader animal, being at the same time rather stouter.

It varies usually from ten to fifteen feet in length, but specimens have been described as attaining double that extent.

It is called the unarmed tapeworm, in consequence of the absence of any coronet of hooks on the head, and consequently, also, from there being no prominent rostellum or proboscis.

FIG. 8.



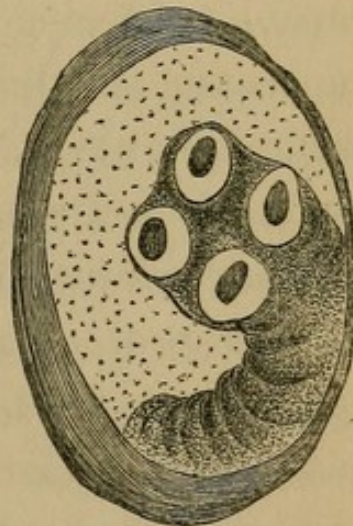
Head of the Beef Tapeworm: A, viewed from above; B, seen from the front. Drawn from a fresh specimen by the aid of a camera. Original.

The place of this last-named structure, however, is supplied by a small rudimentary disk, which I have seen protruded on pressure. Usually this disk forms a more or less conspicuous cup-shaped circular depression, which has been compared to and described as a fifth sucker. That it is not, in any structural sense, comparable to the true suckers, I have had abundant opportunities of ascertaining; nevertheless I do not doubt that it is to a slight extent capable of being used by the parasite as a supernumerary hold-fast. The anchorage thus secured, however, is by no means equal to that obtained by the armed species, a circumstance which explains the comparative difficulty we find in procuring a specimen of the armed species with the head attached.

The experimental researches of Leuckart and Mosler abroad, and of Simonds and myself in this country, have satisfactorily determined the origin of this parasite. We have incontestably proved that the human body becomes infested in consequence of our eating veal and beef. It seems strange to speak of measly beef, and yet, probably, more diseased beef exists in this

country than similarly affected pork. I mean to say that the flesh of cattle used as food is more commonly infested with the larvæ of tapeworms, than is the flesh of swine. But the larvæ in the one case are essentially different from the larvæ in the other. The cysticerci, as they are more properly termed, differ relatively both as regards size and structure. Those in beef are comparatively small, scarcely so large as a pea, and are readily overlooked by the flesher. Those in pork are sometimes as much as nine-tenths of an inch in length, and always sufficiently conspicuous to the naked eye. The beef measles, like its adult representative, has a rather large and unarmed head, whilst the pork measles has a smaller head, surmounted by a double crown of hooks. There is no need therefore to confound the two species either in their larva or adult conditions.

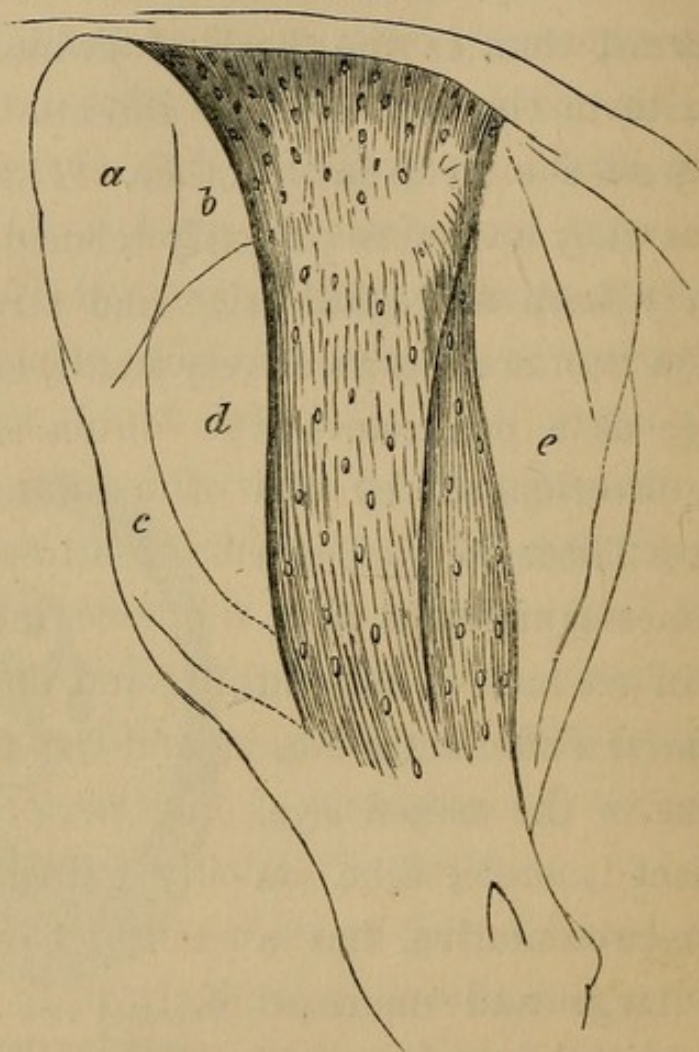
FIG. 9.



Magnified view of one of the beef 'measles' reared by experiment in a calf; showing the head, neck, caudal vesicle (or body) and enveloping cyst. Original.

It may interest the reader to explain briefly the nature and circumstances attending one of

FIG. 10.



Representation of the hinder part of the body of the left side of the calf after removal of the skin: *a b c d e* the muscles (*tensor vaginæ*, *gluteus externus*, *rectus femoris*, *vastus externus*, and *biceps rotator tibialis*) still covered with *fascia*, and surrounding the large muscle (*vastus externus* of Bourgelat) here exposed. The surface of this muscle displayed upwards of 130 separate 'measles,' part of which are here shown *in situ*. Original.

our experiments. In the case of the calf, I procured a quantity of the ripe or sexually

mature segments of the unarmed tapeworm. These were immersed in warm milk, and introduced by the mouth. Sixteen days after the worm feeding, some symptoms of infection showed themselves, but in a few days more they entirely subsided. A second administration of the worm-segments was therefore decided on. Again, fifteen days after the second feeding, fresh symptoms of irritability supervened; and for a few days the distress of the animal seemed to forebode the likelihood of a fatal result. However, after a while its condition improved; the general expression of the face indicated returning health; the breathing and pulse improved; the tremors subsided, and the appetite returned. Convalescence being perfectly re-established, the animal quickly gained flesh, and in two months' time it might have been sold to a butcher as a perfectly healthy and well nourished animal. In truth it was healthy. Only, as we shall presently see, its body was full of parasites resulting from the worm feeding. About three months after the date of the first administration the calf was slaughtered. The flesh was carefully examined, and according

to my estimate it contained no less than eight thousand measles. These measles were undoubtedly the young of the unarmed tapeworm, presenting as they did all the essential characteristics which I have already described. The experiment was a perfect success. It proved the source whence the human body derives the unarmed tapeworm; and also whence cattle derive the eggs necessary for the development of the measles. As it is by such means that our science is advanced and the welfare of the human race is provided for, no person can fairly object to the legitimate employment of these experiments.

Although, up to the present time, no one has recorded the occurrence of the beef-measle in the human body, yet it is by no means improbable that it will sooner or later be recognised as an occasional visitant. Very probably it has frequently been seen, but has hitherto escaped recognition; and no wonder either, seeing that it has not even been recognised in butcher's meat in this country save by myself in the first instance, and by Mr. Simonds subsequently. The symptoms to which its presence

would give rise in the human body, will doubtless be found to correspond with those produced by the pork-measle. These I have already described. In like manner, the presence of the unarmed tapeworm in the intestinal canal gives rise to morbid phenomena which, so far as our present means of diagnosis allow us to judge, are in no way distinguishable from those occasioned by the armed species. It is not improbable that the symptoms produced by the armed tapeworm are more persistent than those of the species under consideration; nevertheless, it should be borne in mind that the greater bulk of the unarmed form may be the cause of more severe irritation. It does not seem likely that the anchorage-hooks of the former species are materially concerned in the production of unpleasant symptoms, though they undoubtedly render the total expulsion of the parasite a matter of comparative difficulty.

The *treatment* for this species is the same as that employed in the case of the armed form; nevertheless, it is highly important to ascertain previously which parasite you have to battle against. If the practitioner is satisfied that he

has to deal with the unarmed form, he may express himself much more hopefully as regards the final result of his efforts to effect a cure. If the armed form be present he is exceedingly unlikely to procure the head of the worm, but in the present case success is just about as likely as not to attend his treatment, provided, of course, he employs the best remedies. Out of upwards of one hundred fresh or recently passed tapeworms which I have examined, only one of them displayed a perfect armed head, whilst ten presented the unarmed head, characteristic of the species just described. If, in any particular case, the head of the worm has not been discovered by the patient's attendant, the practitioner would never conclude on such evidence that the head had not been removed. It requires, indeed, no inconsiderable amount of knowledge and experience to settle this point accurately. However, the patient's mind is always greatly relieved when you can say positively that the head, neck, and body of the worm have passed either separately or in their entirety.

THE PIT-HEADED OR BROAD TAPEWORM.

(Bothriocephalus latus.)

THIS species, though seldom seen in England, is sometimes brought hither by persons who have been residing for a time in foreign countries. Curiously enough, however, it is indigenous in Ireland; though, as compared with the two former species, it is by no means common. It has been called the Irish tapeworm, but is much better known as the Swiss or Russian tapeworm. It is especially prevalent in Russia and Switzerland, being likewise a native of other parts of Europe, and especially of Sweden and Germany. It is endemic in the countries bordering the shores of the Gulf of Bothnia.

FIG. 11.



Lateral view of the head of *Bothriocephalus latus*, showing the pointed crown (a) and the fossa or depression (b b) on one side.

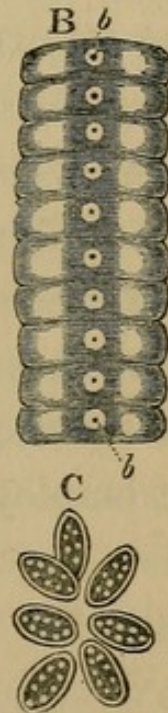
The broad tapeworm is readily distinguishable from the other species. Its remarkable breadth, associated with extremely numerous

and closely packed joints, having a very small vertical diameter, is alone sufficiently distinctive. A full grown specimen attains the length of twenty-five feet, and may carry no less than four thousand segments. It has generally a more or less strongly marked brownish-yellow tint, due to the presence of coloured eggs in the interior of the segments. The reproductive apertures, instead of being placed at the margin of the joints, are situated in the centres of the successive segments on the ventral aspect of the body. Unlike the ordinary tapeworms, the joints of this animal do not naturally separate themselves so as to become independent organisms. This circumstance is highly favourable to the patient, who is thus spared the continual annoyance usually arising from the daily passage of worm-joints. On the other hand, the presence of so formidable a parasite is seldom unproductive of disagreeable effects. The head of the worm is perhaps even more distinctive, specifically, than any other part. It is somewhat flattened from before backwards, having two long, slit-like depressions at the sides, which by means of

muscular action, afford a tolerably efficient anchorage.

The source and development of this parasite are points of considerable interest. The eggs are of comparatively large size, and after expulsion and immersion in water give passage to beautifully ciliated embryos, which latter, again, give birth, as it were, to larvæ furnished with a boring apparatus. This consists of six hooks fashioned after the manner of those existing in the mature eggs of other tapeworms. In what animals the larvæ subsequently develop themselves is not ascertained with certainty, but it seems probable that persons become infested themselves by eating certain kinds of imperfectly cooked fresh-water fish. Leuckart has suggested that the intermediary bearers are probably certain species of the salmon and trout family. Dr. Knoch, of Petersburg, seems to think that there is no need of

FIG. 12.



Section of the body (B) and the eggs (C) of the Broad tapeworm. The reproductive pores (bb) are also shown.

the intermediate host. He believed that he had succeeded in rearing young broad tapeworms in the intestines of dogs. In this he was mistaken. In Russia this species is not very uncommon in the dog, especially in the more southern districts.

The symptoms occasioned by this parasite do not differ much from those produced by the foregoing species. According to Odier, as quoted by Davaine, there is not unfrequently a tumid condition of the abdomen, with sickness, giddiness, and various hysterical phenomena occurring at night. Pain in the region of the heart, palpitations, and faintness, are also mentioned. The *treatment* is similar to that employed in other tapeworms.

THE GREENLAND TAPEWORM.

(*Bothriocephalus cordatus*.)

THIS species, though comparatively new to science under the title above given, may nevertheless turn out to be identical with a worm long ago described by Pallas and Linneus. At

present it is only known for certain to infest the residents of North Greenland, but it is by no means improbable that its area of distribution may be found to embrace the regions of the north generally. It is, as it were, a sort of miniature representative of the species last described. It attains the length of about one foot, and has a small heart-shaped head, whose apex is directed forwards. The neck is so obscure that it may be said to be altogether wanting; the segmentation of the body being well marked immediately below the head. Though so small a species, Leuckart, who first described it, counted between six and seven hundred joints. As in the broad tapeworm, the reproductive orifices are serially disposed along the centre of the ventral line, but a close inspection of the organs themselves shows that the foldings of the egg-bearing organ are comparatively more numerous. This worm is therefore very readily distinguishable from all other known tapeworms. It does not appear to be a very frequent resident in the human body, though it is by no means uncommon in the dog. Possibly, this species may yet be found

in the inhabitants of some of our northern and western islands. From the smallness of its size, it does not appear to occasion much inconvenience to its bearers, whether human or canine; nevertheless, in the dog it exists sometimes in very considerable numbers. My private collection contains some preparations of this parasite, which I owe to the kindness of Professor Leuckart.

THE ELLIPTIC TAPEWORM.

(*Tænia elliptica*.)

THIS parasite is readily recognised, not merely by its delicate form and small size generally, but also by the circumstance of its supporting two sets of reproductive organs in each mature joint; these structures communicating with separate outlets which are situated at the centre of the lateral margin of the segment, one on either side. This parasite ordinarily infests the cat, but there is reason to believe that it is identical with the *Tænia canina* or *T. cucumerina* so common in the dog. At

all events, from the evidence put forth by Eschricht, seconded as it is by Leuckart, there is every reason for believing that one or either of these closely allied forms (be they identical or not) is liable to infest the human body. It was originally stated by Eschricht that he had received a *Tænia canina* which had been passed by a negro slave at St. Thomas, Antilles. Probably the species is very rare in the human body, and possibly may only occur in the negro race. So delicate a worm, unless present in very considerable numbers, would not be likely to occasion any bad symptoms; hence also, its presence would often either be overlooked or disregarded.

THE MARGINED TAPEWORM.

(*Tænia marginata*.)

THIS species is very common in the dog, and is only known in the human body in its larval condition. As I have remarked in my larger work, the principal evidence which we have as to the occurrence of its larvæ (*cysticercus tenui-*

collis) in man, rests upon two cases recorded in Schleissner's *Nepsography of Iceland*. One of these cases, however, has been proved by Küchenmeister, and also by Eschricht's distinguished follower, Dr. Krabbe, to be that of an echinococcus; so that, after all, there only remains the solitary case, observed by Schleissner himself, in which this parasite can, with any degree of certainty, be regarded as a true *cysticercus tenuicollis*. To this may probably be added a specimen contained in the anatomical collection at King's College. If I remember rightly it was found connected with an ovarian cyst. It is apparently well authenticated. There ought to be little difficulty in recognising this parasite in its larval condition; nevertheless many errors have been made. Fortunately, its presence is not likely to lead to any untoward results, but the possibility of its doing so should not be overlooked. As we have seen, it may be mistaken for an ordinary hydatid; indeed, it is not at all improbable that many of the calcified cysts hitherto regarded as referable to hydatids may, after all, have resulted from the presence of the larva of the margined tapeworm.

THE TRIPLE-CROWNED TAPEWORM.

(*Tænia acanthotrias.*)

THE existence of this species is founded upon the circumstance of a cestoid larva, with three rows of hooks, having been detected in the human body. Dr. Weinland, of Frankfort, when visiting America in 1858, examined a specimen of supposed *cysticercus cellulosæ* preserved in the collection of the Boston Society for Medical Improvement. This parasite was taken 'from a woman about fifty years of age, who died of phthisis, [being afterwards] a dissecting-room subject at Richmond, Virginia. About a dozen or fifteen of the cysts were found in the cellular membrane of the muscles, and in the integuments, besides one which hung free from the inner surface of the dura mater, near the *crista galli*. In the same subject there were also numerous specimens of *Trichina spiralis*.' This specimen was presented by Dr. Jeffries Wyman, and an account of the case was first published in 1857. It remained, however, for Dr. Weinland to make the curious

discovery, that the parasite in question was probably referable to a new and distinct species of tapeworm. If, however, subsequent discoveries should show that it constituted only a variety of the *Tænia solium*, the mere existence of such an abnormal condition of the so-called common tapeworm is in itself a very interesting circumstance. Probably, however, for reasons which I need not here discuss, Dr. Weinland's conjectures will turn out to be correct.

THE SPOTTED TAPEWORM.

(*Tænia flavopuncta*.)

THE discovery of this interesting little tapeworm is also due to the investigations of Dr. Weinland. In Dr. J. B. S. Jackson's catalogue of the collection of the Boston Medical Improvement Society, an account of the contents of a phial is recorded as follows:—'Specimen of *Bothriocephalus*, three feet in length, and from half a line to one line and a quarter in width; from an infant. The joints are very

regular, except at one extremity, where they approach the triangular form, are very delicate, and but slightly connected, as shown in a drawing by Dr. Wyman.' It is further stated that the infant was nineteen months old, and that the worm was discharged without medicine, its presence having never been suspected. It was presented by Dr. Ezra Palmer, in the year 1842. On examining the above-described fragments, Dr. Weinland found, instead of a solitary specimen, at least six different tapeworms; all of them being referable to a totally distinct and hitherto undescribed species. Unfortunately, none of the heads were present in the phial; nevertheless, it was ascertained that the worms varied from eight to twelve inches in length, the joints or segments being very broad laterally, and at the same time correspondingly narrow from above downwards. It has been named 'the spotted tapeworm,' in consequence of the presence of yellow spots lying near the middle line in each successive joint. They represent the male reproductive organs. The genital orifices are serially disposed all along one side of the worm at the

margin. The eggs, for the most part, resemble those of ordinary tapeworms. Except they should exist in very large numbers, it is not likely that their presence would give rise to very serious symptoms.

THE RIDGED TAPEWORM.

(*Tænia lophosoma*.)

IN the museum of the Middlesex Hospital there is a tapeworm which when complete must have measured about eight feet in length. It is characterised by the presence of a ridge extending throughout the entire length of the body, imparting to most of the segments a pentagonal figure when viewed from the front. The individual segments are much smaller than those of the full grown pork tapeworms, and they are further characterised, collectively, by the presence of uniserially disposed reproductive papillæ, extending along the left margin throughout the entire chain. The papillæ are very prominent, being placed at the centre

of each joint. The ordinary segments give an average breadth of one-fifth of an inch, those at the caudal end stretching to as much as three-quarters of an inch in length. Their greatest thickness does not exceed the one-thirteenth of an inch. The eggs resemble those of other tapeworms, and offer a diameter of about $\frac{1}{850}$ of an inch. The size of the segments and the uniform disposition of the reproductive papillæ show that this parasite is distinct not only from *Tænia solium*, but also from *T. mediocanellata*, whilst the large size of the worm, as contrasted with the foregoing species, shows that it cannot be referred to Weinland's *Tænia flavopuncta*. At all events it is a totally distinct form, and if a variety only, is remarkably divergent from the ordinary species. I have provisionally named it *Tænia lophosoma*, to indicate the presence of the crest or ridge extending the whole length of the body. Küchenmeister's ridged variety of *Tænia solium* or *T. mediocanellata*, from the Cape of Good Hope, showed an alternation of the papillæ which does not exist in this specimen. It is therefore a new and quite distinct species.

Possibly it may be derived from mutton, in which meat I have recently discovered 'armed' measles apparently quite distinct from the cysticercus found in pork.

THE EGYPTIAN OR DWARF TAPEWORM.

(*Tænia nana*.)

So far as I am aware, there is but one solitary instance on record of the occurrence of this minute tapeworm in the human body; and up to the present time we have no evidence of its having existed in any other host. It was discovered by Dr. Bilharz of Cairo at the post-mortem examination of a boy who died from inflammation of the cerebral membranes. Prodigious numbers existed. The largest specimens measured only one inch in length. As in the two foregoing species the reproductive outlets are uniserially placed along the margin of the body. The joints are about one hundred and fifty in number, the last twenty or thirty carrying ripe eggs, being at the same time about

four times as long as they are broad. To the naked eye these worms resemble short threads, and consequently might very readily be overlooked. The head is broad and furnished with a formidable rostellum armed with a crown of hooks. These hooks have large anterior root-processes, which, extending unusually forward, impart to the individual hooks a bifid character. The structure, however, is essentially the same as obtains in other tapeworms. The cysticercal source of this cestode is at present unknown. Though interesting physiologically, it is not likely that this parasite will ever become a formidable enemy to the welfare of the human species.

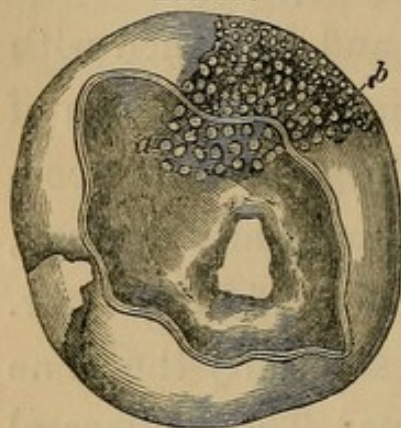
THE HYDATID-FORMING TAPEWORM.

(*Tænia echinococcus*.)

THIS remarkably minute parasite, though not resident in man in its adult condition, is nevertheless, in one of its larval stages, of frequent occurrence in the human body. Whilst the full grown creature seldom attains the fourth

of an inch in length, the larvæ, on the other hand, acquire a prodigious size. The latter

FIG. 13.



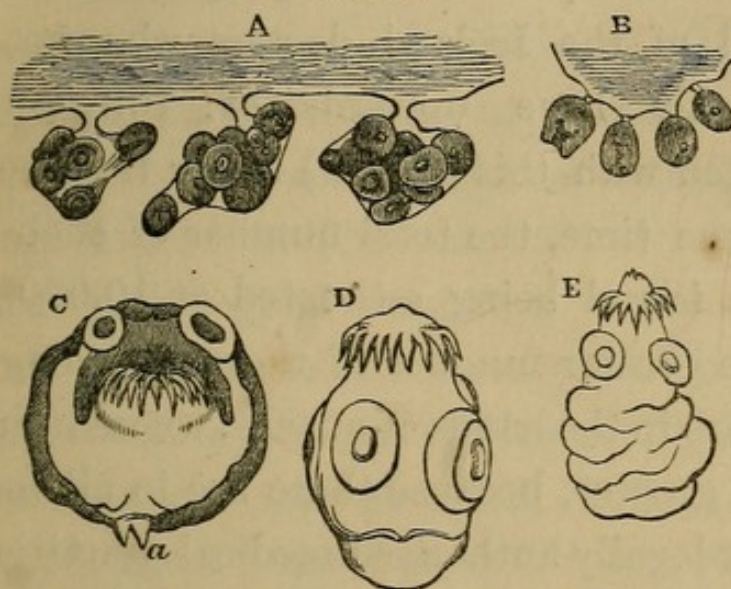
A small hydatid or acephalocyst, with granular processes (b) or 'brood-capsules' attached to the inner wall.

are familiarly known to the profession under the name of *hydatids*. The tapeworm itself resides in the intestines of the dog and wolf; and it is from this source that we become infested. Much space might be devoted to an explanation of the various

possible ways in which the little tapeworm eggs and their embryos gain access to the human body; but, for all practical purposes, it is sufficient to remark, that they commonly enter the mouth along with food and drink, more particularly with the latter. They may also be transported as dust, by wind and other agencies, and thus be carried directly into the mouth; or they may be brushed against the lips, adhering there for a time before being swallowed. Residence in densely populated districts, where dogs at the same time abound, is eminently favourable to the introduction of these creatures into the

human body. Thus, though not unfrequently attacking the wealthy, they are very much

FIG. 14.



Echinococci, or larvæ of the hydatid-forming tapeworm, in course of development; A, B, sections of the inner wall of the hydatid, showing the brood-capsules and their contents; C, D, E, the loose echinococcus-heads separated from their capsules, and showing their hooks and suckers. From Wilson.

more common among the poor. The prevalence of hydatids in some countries is notorious, but it is in Iceland that this so-called echinococcus disease attains its maximum degree of development. There, the conditions to which I have alluded, are eminently favourable for the development and propagation of the disorder. On the authority of Krabbe, it has been stated by Leuckart, that 'for every 100 inhabitants of Iceland there are 1100 head of

horned cattle, and every peasant has, on an average, six dogs. In Denmark there are 180 cattle to every 100 of the people. There are several of the Iceland doctors who not unfrequently have upwards of 100 patients (afflicted with this disease) under treatment at the same time, the total number of such cases in the island being estimated at 10,000. By far the greater number of these patients, however, are in the hands of quacks, whose influence is the greater, because there are in all Iceland but six legally authorised medical practitioners, each of whom presides over a district of about 1500 square (English) miles, embracing a population of about 10,000 individuals. The treatment of the quacks is exactly suited to keep up the epidemic, for, amongst their remedies, the urine and excrement of dogs play a conspicuous part.' Probably, the poor afflicted creatures think themselves the objects of a special divine chastisement; yet by the observance of cleanly habits, and by ridding themselves of the quacks who thrive on their credulity, the rapid diminution of the disease would show that the remedy is in their own

hands, and, further, that 'Providence helps those who help themselves.'

In England, as I have said, the hydatid disease is by no means uncommon. To afford some criterion of its frequency, I may mention, that out of 377 cases of human helminthiasis (as represented by 632 preparations contained in ten pathological museums which I have visited) no less than 199 cases were referable to hydatids. In my 'Notes on Entozoa,' published in the *Lancet* for May 13, 1865, I have tabulated them somewhat as follows:—

Museums	No. of Cases of Entozoa represented	Cases of Hydatids only	No. of Preparations of Entozoa
Guy's	113	70	169
College of Surgeons	51	27	166
King's College	45	16	60
St. George's	42	22	45
St. Bartholomew's	32	25	44
University College	27	15	42
Middlesex	24	11	54
St. Mary's	17	5	22
Charing Cross	17	4	18
Brighton	9	4	12
Totals	377	199	632

It thus appears that considerably more than half of the entire number of *cases* of entozoa represented by the pathological specimens in our museums are attributable to hydatids. For further particulars illustrating the value or otherwise of these tables in a statistical point of view, I must refer to the paper itself, my present object being merely to show how prevalent hydatids are in this country.

The proof as to the relation subsisting between hydatids and the so-called *Tænia echinococcus* is based upon experimental research and general scientific enquiry. Those who desire evidence on this point must consult the best and most recent standard treatises on helminthology. The details respecting the mode of development of hydatids are extremely curious, whether we refer to their early or later stages of growth. In my larger treatise I have endeavoured to give a condensed account of the phenomena observable, and also a brief description of the principal varieties liable to be met with. For obvious reasons, therefore, I deem it unadvisable to repeat or explain my views on this department of the subject;

especially, also, since they have little or no practical bearing upon the diagnosis and treatment of these formations. In a prophylactic point of view, it is certainly desirable to be acquainted with the leading results of modern research; but into the details of the processes thus opened up, the non-scientific or, even, professional reader can hardly be expected to enter. Undoubtedly we are now in a position to check the prevalence of hydatids, and the same may be said of many other less formidable parasitic diseases. The end in question may be accomplished by enforcing a more general cleanliness amongst the poor, and by promoting all good sanitary measures. Despite our care, however, many parasites will gain access to the human frame, under circumstances which no amount of caution, foresight, or cleanliness, could prevent. The connection between uncleanly habits and parasitic disease is by no means invariable, nay it is exceptional. In the case of hydatids it would be very unfair to suppose that any patient is suffering from hydatids because he has neglected to take due care of his person; nevertheless, there are some people who are

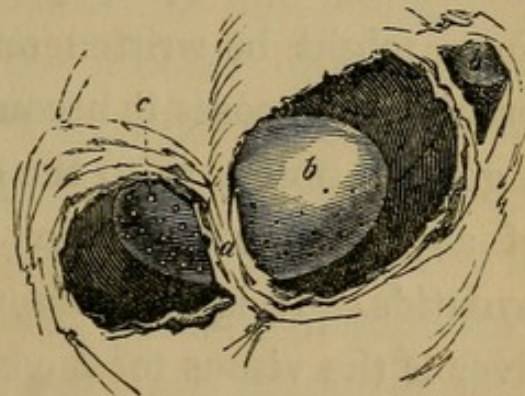
apt to think thus, and who are even prepared to go further than this, and to assert that because Herod was 'eaten up of worms,' it must be a peculiar disgrace for any one to harbour entozoa. Time and a better education will show the fallacy of entertaining such ridiculous preconceived opinions.

To make a correct diagnosis of hydatids is a matter of essential importance; for it is truly surprising how often their presence has been overlooked even in cases where these organisms attained an enormous development, and have ultimately occasioned death. I have seen instances in the dead-house and dissecting-room, where hundreds of these creatures were present, and yet not the slightest suspicion of their existence during life had occurred to any one. In obscure cases of abdominal or thoracic disease, the possibility of the presence of hydatids should always be borne in mind by the physician. Attention to the history of anomalous symptoms complained of by a patient, will not unfrequently suggest the true cause of his complaint, although there may be no external indication whatever of these formations. Of

course, the presence of a fluctuating tumour unaccompanied by any inflammatory symptoms would at once lead an intelligent surgeon to suspect hydatids; and this suspicion would almost ripen into certainty if the tumour was stated to have been of very slow growth. The situation of the swelling, and the absence of any marked functional disturbance of the general system, would afford additional information. The so-called hydatid 'fremitus' of

Piorri is of little moment; since, as I have elsewhere remarked, it 'scarcely differs from the ordinary impulse communicated by fluid within any other kind of tumour.' My experience on this

FIG. 15.



Hydatid cyst (*a*) containing a secondary vesicle or daughter hydatid (*b*), with granules (*c*) or brood-capsules in course of formation.

point is confirmed by Dr. Murchison, who not only finds the peculiar 'vibration' occasionally wanting, but, when present, he regards it as of no great diagnostic value. Dr. Mur-

chison altogether denies that its exceptional character enables the manipulator to predict 'the existence of secondary cysts in the interior' of the tumour.* Except in severe cases, where hydatid growths press upon important viscera, these parasites are mostly overlooked; and it is often only when one or more such vesicles are discharged from the lungs or bowels that the nature of the case becomes apparent.

I have already remarked on the diagnostic assistance to be obtained from a consideration of the seat of any suspicious growth. Much more might be written on this head; but for practical purposes it becomes sufficient to have a general notion as to the comparative liability of any particular organ or part to harbour hydatids. It is well known, indeed, that the liver is the viscus most commonly affected, but the practitioner should not be content with this limited knowledge. From data collected by Davaine and myself, we find that out of a total of 508 examples of hydatid disease, 216 were

* 'Hydatid Tumours of the Liver; their Dangers, Diagnosis, and Treatment.' By Charles Murchison, M.D. F.R.C.P. 'Edinburgh Medical Journal' for December, 1865.

strictly liver cases. It should be mentioned, however, that the actual number of instances in which they had originated from this organ was in all probability much greater; for, besides the above, we must take into account 86 cases where they occupied various regions of the abdominal cavity. According to the records of the individual reporters, we might place certain of these, more or less accurately, as severally referable to the peritoneum and intestines, to the kidneys and bladder, or to the pelvis. At all events, I do not doubt that nearly one-third of the number originated in the liver; and thus I arrive at the conclusion, that of all the hydatid cases on record, about one half of them have had their primary seat in the liver. It should also be borne in mind that many so-called lung cases are from the same seat. In the total above given, there were forty-eight examples of this kind, several of which undoubtedly originated in the liver. Respecting the remaining more or less frequent situations of hydatid formation, I will only mention, in their relative order of frequency, the brain and spinal cord, the muscles of the

trunk and extremities, the bones, the neck, face, orbit, and globe of the eye, the mammæ, and the internal female organs of generation. In certain rare cases, any other part of the body is liable to be invaded.

Having made good our diagnosis, respecting which additional remarks will be found further on, it only remains for us to consider the best methods of *treatment*. Here I can only repeat with additional emphasis what I have stated in my general treatise. Where interference is necessary, it simply resolves itself into the question as to the time for evacuating the contents of the cyst or cysts. To determine this point, and also the amount of risk to the patient's life, requires considerable care on the part of the physician and surgeon. These are just the kind of cases where professional responsibility should be divided. I think the general practitioner should call to his aid at least a second opinion before he thrusts a trochar through the abdominal parietes of his confiding patient. Even under the most favourable circumstances, the operation of paracentesis is not.

unattended with danger; and it occasionally happens that a patient who is benefited by a first operation, succumbs to a repetition of the ordeal. Where several independent cysts exist, a third or even a fourth operation may be necessary.

After performing the operation of tapping, many have insisted upon the necessity of injecting iodine or other medicated solutions. Undoubtedly, many patients make a good recovery after these internal applications; yet I believe they do so rather in spite of, than on account of, any chemical or mechanical action of the drug. As to the injection of a saline solution, that in effect would be something like restoring the parasite to its normal condition. In like manner the internal exhibition of drugs is worse than useless, except they are merely intended to support an already weakened constitution. Much nonsense has been written concerning the value of particular remedies, and even the employment of electricity has been needlessly recommended. The experience of Dr. Todd has been amply confirmed by

Murchison, MacGillivray,* and other writers on this subject. In his own words, I may also say that 'I know of no cure for hydatids but the evacuation of them. There is a popular notion that salt will kill the hydatid. Iodide of potassium has also been frequently tried, but I have never seen any real benefit from the use of these remedies.' Of course, it is here understood, that in certain exceptional cases nature herself is able to effect a cure, and also that it is not necessary for the surgeon to bring away, through his trochar, the actual vesicles themselves. It would seem, indeed, that in cases where only a part of the fluid contents is evacuated, a cure is effected by the assistance thus rendered to nature's curative powers. The injection of medicated solutions is contraindicated not only by the teachings of nature herself, but also by the circumstance that the irritation thus set up is likely to end in ex-

* See an able paper in the Australian 'Medical Journal' for August, 1865, entitled:—'On a case of Hydatids in the Orbit; with an abstract of (twenty) cases of Hydatid Disease treated at the Bendigo Hospital.' By P. H. MacGillivray, A.M., M.R.C.S.

tensive inflammation and suppuration. Should this not prove fatal, the patient has further sufferings to endure whilst the surgeon is subsequently treating the case as one of abscess. The ordinary operation, however, in the hands of a judicious surgeon who is careful to employ a small trochar, is attended with very little danger, whilst the prior use of an exploratory needle for diagnostic purposes seldom occasions any inconvenience.

I believe it is to Dr. Murchison that we are indebted for a clear exposition of the value of testing the evacuated fluid of hydatid cysts as an additional means of diagnosis. He has remarked (*l. c.* p. 13), that 'if the sac be not inflamed, it is limpid, has a specific gravity of 1007 or 1009, and contains no albumen, but throws down a copious precipitate with a solution of nitrate of silver, owing to its strong impregnation with common salt. These characters apply to no other fluid in the body, whether healthy or morbid.' This being the case, the employment of the exploratory needle or a fine trochar should be invariably insisted on some time before the operation is actually undertaken.

Even the inconvenience arising from the use of the grooved needle may be obviated by using Dr. Richardson's apparatus for the induction of local anæsthesia. Except in sensitive and delicately nurtured persons, however, one would hardly think it necessary to recommend this generally valuable aid.

As I have before hinted, there are some cases in which it may be advisable to abstain altogether from any operation. Instances when an undoubted hydatid tumour has ceased growing, or has even diminished in size, are of this kind; for in such cases it is clear nature is effecting a cure by herself in one of two ways. Either the parasite is dead and the fluid contents are being absorbed, the hydatid collapsing and folding upon itself so as ultimately to form a small hard tumour; or, as is more usually the case, it is undergoing the slower process of pultaceous or calcareous degeneration. All cystic entozoa have a tendency to secrete calcareous matter, the quantity thus ultimately deposited sometimes weighing, in cases of hydatids, several ounces. Should it happen that a hydatid tumour, say, in the region of

the liver, has attained a large size, I would advise the evacuation of its contents, although it may have ceased to grow for a lengthened period. My judgment would to some extent, of course, be guided by the character of the tumour, and the age of the patient. In illustration of the dangers arising from a tumour in this region, I may refer to the case of a school-boy who was placed under the care of the late Mr. Crosse of Norwich, in a moribund condition. The little patient received a slight blow from a playfellow on the right side. An unsuspected hydatid was ruptured, and death was the result not long afterwards. I made a drawing of the parts concerned in this case. On inspecting it, one is almost surprised to reflect how large a tumour of this kind may exist, without any suspicion being entertained by the infested person of its presence. If the blow in this case had been violent, or had been directed by a hostile hand, one could easily understand that the tumour would give way; but I understood that it was both slight and accidental. By parity of reasoning, it follows, that a person going about with such formations affecting any of the abdominal

viscera is in constant danger from rupture of the cyst.

At a recent meeting of the Medico-Chirurgical Society of London, Dr. John Harley brought forward a remarkable case of hydatids, where no less than nineteen pints of fluid were drawn off by successive tapplings. In this case the distention of the abdomen was very extreme. The operation was very long, and perhaps needlessly, delayed; nevertheless the patient not only escaped the dangers of rupture from accident, but also (in spite of the tedious evacuation of the contents of the cyst, the employment of a large trochar, and the suppuration which followed the operation) made a good recovery.

APPENDIX.



ON BEEF, PORK, AND MUTTON IN RELATION TO TAPEWORMS.

IN the July number of the 'Natural History Review' for 1865 there appeared an able article on the subject of Entozoa, and in it there occurs the following passage:—'Of all animals, feral or domestic, the common pig is beyond all doubt the most fertile source of human entozoa; at least, of important parasites, *Trichina spiralis* and the tapeworm would, there is good reason to believe, cease to infest us, did not this favourite quadruped act the part of a communicating medium.'

I quote this passage as a prefix to the concluding remarks I am about to offer, partly with the view of showing that the sense of it affords an admirable

exposition of the notions currently received by the public, and more particularly with the intention of showing that it fails to convey the whole truth, whilst, in some respects it is even calculated to mislead those who are not accurately informed in helminthological matters.

As regards the microscopic fleshworm (*Trichina spiralis*) it is only fair to admit that, in so far as our present experience extends, pork has been the almost exclusive source whence we have obtained this parasite; nevertheless, it must be borne in mind that the flesh of most of the mammalia is liable to harbour the *Trichina*. Possibly the pig may constitute an original 'creative centre' whence the parasite has spread to other regions; yet, as obtains in the case of the origin of any other animal or vegetable species, all speculations on this score lead to no certain or definite conclusion. Unquestionably, the *Trichina* seems to us to be more 'at home' in the flesh of the pig than in that of any other animal; yet, for all we know to the contrary, its original habitat may have been the flesh of some mammal which flourished in times long antecedent to the race of swine. Dr. Krabbe, of Copenhagen, informs me that he has found it normally present in the rat, and the same thing has been noticed in Germany. If insuperable obstacles stand in the way of explaining the origin, or

so-called 'ordained becoming' of ordinary specific forms of animal and vegetable life, it requires no great amount of penetration to perceive that these obstacles become equally formidable, and perhaps even more numerous, when we come to deal with the antecedents of a group of creatures whose very existence within our frames suggests to some persons the notion that they have invaded us by accident, or, at least, that they have no right to invade us. It is 'incompatible with the dignity of man,' remarks Von Siebold, 'that these parasites should be originally intended to take up a temporary abode in the human body.' However, if we would read Nature's teachings rightly, we must reject these preconceived opinions; for, in the case before us, I think all candid investigators will in future admit that the human body is the exclusive home and legitimate territory of at least two species of entozoa—one of these forms being procured, as is generally allowed, by our eating pork, the other, as is not generally known, by our eating beef. On the present occasion I propose to dwell chiefly on the practical bearings of this subject.

When once, on apparently good grounds, a belief has become deeply rooted in our minds, we all know how extremely difficult it is to get rid of it, even though the grounds of our persuasion are shown to be fallacious. Here is a case in point: most people,

and even, as we have seen, some excellent authorities, are impressed with the belief that pork, and pork alone, is the source of those peculiarly uninviting forms of human entozoa—the tapeworms. This notion is entirely at variance with the facts enunciated by recent discovery. As a counter-proposition it may be safely averred that the majority of human tapeworms are derived from eating beef, the remainder being chiefly obtained from pork and mutton.

What are the facts, and what is the explanation of the facts enabling us to advance this general statement of the case with confidence? They are these: Putting aside the rarer tapeworm-forms just described, we have still two species left to consider. One is the *Tænia solium*, whose head is armed with a coronet of hooks, the other the *Tænia mediocanellata*, in which this cephalic armature is wanting. The larval origin of the first species has long been known to experimental helminthologists. I need scarcely repeat that the *Tænia solium* is derived from the pork measles, or so-called *Cysticercus cellulosæ*. The larval origin of the second species has only very recently been determined. Up to the present time, so far as I am aware, only four persons have experimented on animals with the view of deciding the question as to the source of the *Tænia mediocanellata*.

On the continent, Profs. Leuckart and Mosler, of Giessen, have succeeded in rearing 'measles' in the calf by the administration of the eggs of this unarmed tapeworm; whilst, at home (and partly by the aid of funds placed at my disposal by the Council of the British Association), Prof. J. B. Simonds and myself have in two separate instances obtained similar results. We have seen that the veal and beef 'measle,' which, for convenience sake, I call the *Cysticercus bovis*, differs as much from the pork 'measle' (*Cysticercus cellulosæ*), as the adult and corresponding *Tænia mediocanellata* specifically differs from the *Tænia solium*. In the one case the larva is unarmed, while in the other it is furnished with hooks. Having already (in these pages and in No. 76, vol. xiv. of the Proceedings of the Royal Society, pp. 214-220) given a detailed account of the results of our experiments upon the calf, I will here only further call attention to one practical point. It is this: the meat which we eat may contain a very large number of larval parasites, and yet the animal whence the flesh was obtained shall have appeared perfectly healthy on the day that it was slaughtered. In our calf I calculated that there were between seven and eight thousand measles in the flesh; but, even to skilled veterinary eyes, at the time of slaughtering this animal appeared perfectly sound

and in good condition. We might have sold this animal to a butcher, and have enjoyed the satisfaction of knowing that we had done our best to ensure the development of *Tænia mediocanellata* in a considerable number of his customers. Those muscles usually forming the choicest parts offered by the salesman were just those portions which were most abundantly infested. Any person dining moderately off an imperfectly cooked 'fillet' from this source would unquestionably have found himself the future entertainer of at least a dozen tapeworm 'guests.'

It takes about one year for the 'measles' to lose their power of doing harm to the consumer. In this time a natural death of the larva results from calcareous degeneration. This is proved by our experiments upon a young cow, the particulars of which are not yet published.

Under ordinary circumstances it is most probable that the flesh of young cattle is seldom affected with 'measles,' simply because they have enjoyed a less number of chances of swallowing the eggs of tapeworms than obtains in the case of full-grown animals. Hence it may be safely concluded, as a general rule, that veal is less liable to harbour 'measles' than beef. Again, considering the possible methods of egg dispersion, it may also be safely asserted that the nearer cattle are reared in the neighbourhood of

large towns, the more likely will they be (especially where sewage is freely distributed) to harbour tapeworm larvæ. Thus, also, we are enabled to explain how it is that certain fortunate persons may even persevere in eating underdone meat, and yet escape infection. It all resolves itself into a question of chances—at least, as regards that portion of the community who prefer underdone meat. Those who habitually eat their meat well cooked cannot have been predestined to suffer from the tapeworm malady; rather has it, I presume, been willed that we should exercise our senses and have our meat well cooked, for thus we can avoid those unpleasant contingencies, whose relations I have sought to explain.

If the reader has followed me thus far, and if he is satisfied that helminthologists have clearly established the relations subsisting between the unarmed tapeworm of the human body and the beef measles—in other words, between *Tænia mediocanellata* and *Cysticercus bovis*—then he will be ready to maintain, as I now do, that it is not correct to say that the tapeworm ‘would cease to infest us, did not that favourite quadruped, the pig, act the part of a communicating medium.’

The next and final question which I proceed to determine is as to whether the *Tænia mediocanellata*, or unarmed tapeworm, be, or be not, the more pre-

valent of the two forms. To solve this problem as regards the human race in general would require a mass of data not readily procurable; but as far as our evidence goes (whether we deal with the world at large, with our own limited portion of it, or with yet more limited areas within the British territory itself), I think it will be found to point pretty nearly all one way. Thus, the unarmed human tapeworm is known to be extremely, if not exclusively, prevalent in Abyssinia, in Caffreland, and probably also throughout the western coast of Africa. In Java, Schmidt-müller observed 148 specimens of tapeworms, not one of which was furnished with hooks; but it would appear that most of these were imported by negroes from Guinea coast. In Russian Asia, all the cases reported by Kaschin as occurring amongst the Bïrates, or Baikal Cossacks, seem to be referable to this species. The testimony of Wawruch and Bremser, as well as that of others, seems to show that the armed form seldom or never occurs in Vienna. In parts of Würtemberg and Bavaria, according to the testimony of Weisshaar, the *Tænia solium* is seldom seen; but in Copenhagen Dr. Krabbe found that, out of thirteen in his possession, six were of the armed form, the remaining seven being examples of *Tænia mediocanellata*.

In our own country, Dr. Aitken found the unarmed

species the more abundant of the two amongst the soldiers stationed at Fort Pitt. Out of eleven specimens placed in my hands by Dr. Greenhow, of the Middlesex Hospital, only one was a *Tænia solium*; and out of one dozen specimens transmitted by Dr. Alexander Fleming, of the Queen's Hospital, Birmingham, four only were not referable to the *Tænia mediocanellata*. In June 1865, Dr. M'Kendrick, Physician to the Eastern Dispensary, Leman Street, London, wrote me as follows:—‘I have treated at this dispensary during the past seven months thirty-two cases of tapeworm, and twenty-five of the specimens have been of the species *mediocanellata*. Two of these cases (since published) are interesting from the fact that one was a case of reflex paraplegia, and the other of epileptiform convulsions; the exciting cause in both being the presence of *Tænia*.’ This independent testimony I regard as extremely valuable, for it shows that even in a locality where the poorer classes abound the *Tænia mediocanellata* is the more common of the two species. Lastly, out of ninety-four other specimens which I have examined with the view of determining the relative prevalence of the two species, not less than three-fourths were of the unarmed kind. Rather more than one-half were specimens preserved in the pathological museums of the metropolis, a large proportion having

no history attached; in a few cases their fragmentary character rendered it impossible to diagnose the species with certainty. Putting aside doubtful forms, I may say that out of a total of 120 human tapeworms submitted to my examination, not less than 95 were examples of the *Tænia mediocanellata*.

From the foregoing data, therefore, it becomes tolerably certain that, generally speaking, the hookless tapeworm derived from eating beef is much more common than the hooked tapeworm obtained from pork; and, in so far as the propagation of the human cestode entozoa is concerned, we must award to beef the greater merit as a medium; whilst as regards *Trichina spiralis* it cannot be truly asserted that the fleshworm 'would cease to infest us,' did not pork play the part of a communicating agency.

I may also remark, from cases which have come under my own observation and treatment, that by employing the proper remedies the *Tænia mediocanellata* may very readily be got rid of. In the case of *Tænia solium* the head is very apt to be left attached to the walls of the intestine. I have obtained twelve *heads* of the unarmed species, but only one of the armed species. I have seen more than twenty of the former, but only four of the latter. All my experiences with human cestodes point to the

comparative prevalence of the tapeworm derived from beef.

In conclusion, I have one word to say respecting the possibility of getting tapeworms from eating mutton. On this score I no longer entertain any doubt. Some months ago I called public attention to the fact that I had (on three separate occasions) noticed small hydatid-like cysts in joints of mutton brought to my own table. I mentioned it also, last winter, to my friend Dr. Kirk, who assured me he had noticed similar appearances. Subsequently I exhibited specimens of such measles (in a calcified condition) to the Pathological Society, and, still more recently, I have received from Mr. Heisch a perfect specimen of an armed cysticercus taken from the interior of a mutton chop. I believe this measles to represent a distinct form of tapeworm, but whether it will turn out to be my *Tænia lophosoma*, or a species altogether new to helminthologists, is a point which I hope to solve very shortly. Meanwhile, it should be known that even mutton, hitherto supposed to be perfectly innocuous, is liable to harbour larval tapeworms. It may turn out that the adult worm belongs, so to speak, to one of the carnivora. I think this highly probable.

POPULAR SCIENTIFIC WORKS

PHYSICAL SCIENCE

PHYSICAL SCIENCE

PHYSICAL SCIENCE

PHYSICAL SCIENCE

PHYSICAL SCIENCE

PHYSICAL SCIENCE

PHYSICAL SCIENCE

PHYSICAL SCIENCE

PHYSICAL SCIENCE

PHYSICAL SCIENCE

PHYSICAL SCIENCE

LONDON

PRINTED BY SPOTTISWOODE AND CO.

NEW-STREET SQUARE

POPULAR SCIENTIFIC WORKS.

PHYSIOLOGICAL ANATOMY and PHYSIOLOGY
of MAN. By ROBERT B. TODD, M.D. F.R.S., W. BOWMAN,
F.R.S. and LIONEL S. BEALE, M.B. F.R.S. being the First Part
of a New Edition, by Dr. BEALE, of the First Volume of the
Original Work of Messrs. TODD and BOWMAN. PART I. 8vo.
with 8 Plates, 7s. 6d.

PHYSIOLOGICAL ANATOMY and PHYSIOLOGY
of MAN. By the late R. B. TODD, M.D. F.R.S. and W.
BOWMAN, F.R.S. of King's College. With numerous Illustra-
tions. VOL. II. 8vo. 25s.

The HARMONIES of NATURE, or the Unity of
Creation. By Dr. GEORGE HARTWIG. With 8 full-page
Engravings on Wood, and about 200 Woodcuts in the Text.
8vo. 18s.

The SEA and its LIVING WONDERS. By Dr.
GEORGE HARTWIG. Third (English) Edition. 8vo. with many
Illustrations, 18s.

The TROPICAL WORLD. By Dr. GEORGE HARTWIG.
With 8 Chromoxylographs and 172 Woodcuts. 8vo. 21s.

HOMES WITHOUT HANDS: a Description of the
Habitations of Animals, classed according to their Principle of
Construction. By Rev. J. G. WOOD, M.A. F.L.S. With about
140 Vignettes on Wood (20 full size of page). New Edition.
8vo. 21s.

MAUNDER'S TREASURY of NATURAL HISTORY,
or Popular Dictionary of Zoology. Revised and corrected by
T. S. COBBOLD, M.D. Fcp. with 900 Woodcuts, 10s.

MANUAL of the CORALS and SEA JELLIES
(*Coelenterata*). By J. REAY GREENE, B.A. M.R.I.A. Edited
by the Rev. J. A. GALBRAITH, M.A. and the Rev. S. HAUGHTON,
M.D. With 39 Woodcuts, fcp. 5s.

MANUAL of the SPONGES and ANIMALCULÆ
(*Protozoa*); with a General Introduction on the Principles of
Zoology. By the same Author and Editors. With 16 Wood-
cuts, fcp. 2s.

VAN DER HOEVEN'S HANDBOOK of ZOOLOGY.
Translated from the Second Dutch Edition by the Rev. W.
CLARK, M.D. F.R.S. 2 vols. 8vo. with 24 Plates of Figures, 60s.

SKETCHES of the NATURAL HISTORY of CEYLON.
By Sir J. EMERSON TENNENT, K.C.S. LL.D. With 82 Wood
Engravings. Post 8vo. 12s. 6d.

A FAMILIAR HISTORY of BIRDS. By E. STANLEY,
D.D. late Lord Bishop of Norwich. Fcp. with Woodcuts,
3s. 6d.

KIRBY and SPENCE'S INTRODUCTION to ENTO-
MOLOGY, or Elements of the Natural History of Insects.
Crown 8vo. 5s.

ROCKS CLASSIFIED and DESCRIBED : a Treatise on
Lithology. By BERNHARD VON COTTA. An English Edition
by PHILIP HENRY LAWRENCE, with English, German, and
French Synonymes, revised by the Author. Post 8vo. 14s.

The ELEMENTS of BOTANY for FAMILIES and
SCHOOLS. Tenth Edition, revised by THOMAS MOORE, F.L.S.
Fcp. with 154 Woodcuts, 2s. 6d.

The **TREASURY of BOTANY**, or Popular Dictionary of the Vegetable Kingdom; with which is incorporated a Glossary of Botanical Terms. Edited by J. LINDLEY, F.R.S. and T. MOORE, F.L.S. assisted by eminent Contributors. Pp. 1,274, with 274 Woodcuts and 20 Steel Plates. 2 Parts, fcp. 20s.

The **BRITISH FLORA**; comprising the Phænogamous or Flowering Plants and the Ferns. By Sir W. J. HOOKER, K.H. and G. A. WALKER ARNOTT, LL.D. 12mo. with 12 Plates, 14s. or Coloured, 21s.

LOUDON'S ENCYCLOPÆDIA of PLANTS; comprising the Specific Character, Description, Culture, History, &c. of all the Plants found in Great Britain. With upwards of 12,000 Woodcuts, 8vo. £3 13s. 6d.

BRYOLOGIA BRITANNICA; containing the Mosses of Great Britain and Ireland, arranged and described. By W. WILSON. 8vo. with 61 Plates, 42s. or coloured, £4 4s.

DICTIONARY of SCIENCE, LITERATURE, and ART. Fourth Edition, re-edited by the late W. T. BRANDE (the Author) and GEORGE W. COX, M.A. assisted by Gentlemen of eminent Scientific and Literary Acquirements. 3 vols. medium 8vo. price 63s.

DICTIONARY of PRACTICAL MEDICINE. By J. COPLAND, M.D. F.R.S. Abridged from the larger Work by the Author, assisted by J. C. COPLAND, M.R.C.S. and brought down to the present state of Medical Science. 8vo. 36s.

MANUAL of MATERIA MEDICA and THERAPEUTICS, abridged from Dr. PEREIRA's *Elements* by F. J. FARRE, M.D. assisted by R. BENTLEY, M.R.C.S. and by R. WARINGTON, F.R.S. 8vo. with 90 Woodcuts, 21s.

The WORKS of Sir B. C. BRODIE, Bart. collected and arranged by CHARLES HAWKINS, F.R.C.S.E. 3 vols. 8vo. with Medallion and Facsimile, 48s.

AUTOBIOGRAPHY of Sir B. C. BRODIE, Bart. printed from the Author's materials, left in MS. Second Edition. Fcp. 4s. 6d.

MANUAL of the DOMESTIC PRACTICE of MEDICINE. By W. B. KESTIVEN, F.R.C.S.E. Second Edition, thoroughly revised, with Additions. Fcp. 5s.

The RESTORATION of HEALTH; or, the Application of the Laws of Hygiene to the Recovery of Health: a Manual for the Invalid, and a Guide in the Sick Room. By W. STRANGE, M.D. Fcp. 6s.

SEA-AIR and SEA-BATHING for CHILDREN and INVALIDS. By the same Author. Fcp. 3s.

HINTS to MOTHERS on the MANAGEMENT of their Health during the Period of Pregnancy and in the Lying-in Room. By T. BULL, M.D. Fcp. 5s.

The MATERNAL MANAGEMENT of CHILDREN in HEALTH and DISEASE. By the same Author. Fcp. 5s.

WINE, the VINE, and the CELLAR. By THOMAS G. SHAW. Second Edition, revised and enlarged, with Frontispiece and 31 Illustrations on Wood. 8vo. 16s.

On FOOD and its DIGESTION; an Introduction to Dietetics. By W. BRINTON, M.D. Physician to St. Thomas's Hospital, &c. With 48 Woodcuts. Post 8vo. 12s.



London: LONGMANS, GREEN, and CO. Paternoster Row.

[JULY 1865.]

GENERAL LIST OF WORKS

PUBLISHED BY

MESSRS. LONGMANS, GREEN, AND CO.

PATERNOSTER ROW, LONDON.

Historical Works.

The HISTORY of ENGLAND from the Fall of Wolsey to the Death of Elizabeth. By JAMES ANTHONY FROUDE, M.A. late Fellow of Exeter College, Oxford.

VOLS. I. to IV. the Reign of Henry VIII. Third Edition, 54s.

VOLS. V. and VI. the Reigns of Edward VI. and Mary. Second Edition, 28s.

VOLS. VII. and VIII. the Reign of Elizabeth, VOLS. I. and II. Third Edition, 28s.

The HISTORY of ENGLAND from the Accession of James II. By Lord MACAULAY. Three Editions as follows.

LIBRARY EDITION, 5 vols. 8vo. £4.

CABINET EDITION, 8 vols. post 8vo. 48s.

PEOPLE'S EDITION, 4 vols. crown 8vo. 16s.

REVOLUTIONS in ENGLISH HISTORY. By ROBERT VAUGHAN D.D. 3 vols. 8vo. 45s.

VOL. I. Revolutions of Race, 15s.

VOL. II. Revolutions in Religion, 15s.

VOL. III. Revolutions in Government, 15s.

An ESSAY on the HISTORY of the ENGLISH GOVERNMENT and Constitution, from the Reign of Henry VII. to the Present Time. By JOHN EARL RUSSELL. Third Edition, revised, with New Introduction. Crown 8vo. 6s.

The HISTORY of ENGLAND during the Reign of George the Third. By WILLIAM MASSEY, M.P. 4 vols. 8vo. 48s.

The CONSTITUTIONAL HISTORY of ENGLAND, since the Accession of George III. 1760—1860. By THOMAS ERSKINE MAY, C.B. Second Edition. 2 vols. 8vo. 33s.

HISTORICAL STUDIES. I. On Some of the Precursors of the French Revolution; II. Studies from the History of the Seventeenth Century; III. Leisure Hours of a Tourist. By HERMAN MERIVALE, M.A. 8vo. 12s. 6d.

LECTURES on the HISTORY of ENGLAND. By WILLIAM LONGMAN. VOL. I. from the earliest times to the Death of King Edward II. with 6 Maps, a coloured Plate, and 53 Woodcuts. 8vo. 15s.

A CHRONICLE of ENGLAND, from B.C. 55 to A.D. 1485; written and illustrated by J. E. DOYLE. With 81 Designs engraved on Wood and printed in Colours by E. Evans. 4to. 42s.

HISTORY of CIVILISATION. By HENRY THOMAS BUCKLE. 2 vols. 8vo. £1 17s.

VOL. I. *England and France*, Fourth Edition, 21s.

VOL. II. *Spain and Scotland*, Second Edition, 16s.

DEMOCRACY in AMERICA. By ALEXIS DE TOCQUEVILLE. Translated by HENRY REEVE, with an Introductory Notice by the Translator. 2 vols. 8vo. 21s.

The SPANISH CONQUEST in AMERICA, and its Relation to the History of Slavery and to the Government of Colonies. By ARTHUR HELPS. 4 vols. 8vo. £3. VOLS. I. and II. 28s. VOLS. III. and IV. 16s. each.

HISTORY of the REFORMATION in EUROPE in the Time of Calvin. By J. H. MERLE D'AUBIGNÉ, D.D. VOLS. I. and II. 8vo. 28s. and VOL. III. 12s.

LIBRARY HISTORY of FRANCE, in 5 vols. 8vo. By EYRE EVANS CROWE. VOL. I. 14s. VOL. II. 15s. VOL. III. 18s. VOL. IV. nearly ready.

LECTURES on the HISTORY of FRANCE. By the late Sir JAMES STEPHEN, LL.D. 2 vols. 8vo. 24s.

The HISTORY of GREECE. By C. THIRLWALL, D.D., Lord Bishop of St. David's. 8 vols. 8vo. £3; or in 8 vols. fcp. 28s.

The TALE of the GREAT PERSIAN WAR, from the Histories of Herodotus. By GEORGE W. COX, M.A. late Scholar of Trin. Coll. Oxon. Fcp. 7s. 6d.

ANCIENT HISTORY of EGYPT, ASSYRIA, and BABYLONIA. By the Author of 'Amy Herbert.' Fcp. 6s.

CRITICAL HISTORY of the LANGUAGE and LITERATURE of Ancient Greece. By WILLIAM MURE, of Caldwell. 5 vols. 8vo. £3 9s.

HISTORY of the LITERATURE of ANCIENT GREECE. By Professor K. O. MÜLLER. Translated by the Right Hon. Sir GEORGE CORNEWALL LEWIS, Bart. and by J. W. DONALDSON, D.D. 3 vols. 8vo. 36s.

HISTORY of the ROMANS under the EMPIRE. By CHARLES MERIVALE, B.D. Chaplain to the Speaker.

CABINET EDITION, 8 vols. post 8vo. 48s.

LIBRARY EDITION, 7 vols. 8vo. £5 11s.

The FALL of the ROMAN REPUBLIC: a Short History of the Last Century of the Commonwealth. By the same Author. 12mo. 7s. 6d.

The **CONVERSION of the ROMAN EMPIRE**: the Boyle Lectures for the year 1864, delivered at the Chapel Royal, Whitehall. By CHARLES MERIVALE, B.D. Chaplain to the Speaker. Second Edition, 8vo. 8s. 6d.

CRITICAL and HISTORICAL ESSAYS contributed to the *Edinburgh Review*. By the Right Hon. LORD MACAULAY.

LIBRARY EDITION, 3 vols. 8vo. 36s.

TRAVELLER'S EDITION, in 1 vol. 21s.

In POCKET VOLUMES, 3 vols. fcp. 21s.

PEOPLE'S EDITION, 2 vols. crown 8vo. 8s.

HISTORICAL and PHILOSOPHICAL ESSAYS. By NASSAU W. SENIOR. 2 vols. post 8vo. 16s.

HISTORY of the RISE and INFLUENCE of the SPIRIT of RATIONALISM in EUROPE. By W.E.H. LECKY, M.A. Second Edition, revised. 2 vols. 8vo. 25s.

The **BIOGRAPHICAL HISTORY of PHILOSOPHY**, from its Origin in Greece to the Present Day. By GEORGE HENRY LEWES. Revised and enlarged Edition. 8vo. 16s.

HISTORY of the INDUCTIVE SCIENCES. By WILLIAM WHEWELL, D.D. F.R.S. Master of Trin. Coll. Cantab. Third Edition. 3 vols. crown 8vo. 24s.

EGYPT'S PLACE in UNIVERSAL HISTORY; an Historical Investigation. By C. C. J. BUNSEN, D.D. Translated by C. H. COTTRELL, M.A. With many Illustrations. 4 vols. 8vo. £5 8s. VOL. V. is nearly ready, completing the work.

MAUNDER'S HISTORICAL TREASURY; comprising a General Introductory Outline of Universal History, and a series of Separate Histories. Fcp. 10s.

HISTORICAL and CHRONOLOGICAL ENCYCLOPÆDIA, presenting in a brief and convenient form Chronological Notices of all the Great Events of Universal History. By B. B. WOODWARD, F.S.A. Librarian to the Queen. [*In the press.*]

HISTORY of the CHRISTIAN CHURCH, from the Ascension of Christ to the Conversion of Constantine. By E. BURTON, D.D. late Regius Prof. of Divinity in the University of Oxford. Eighth Edition. Fcp. 3s. 6d.

SKETCH of the HISTORY of the CHURCH of ENGLAND to the Revolution of 1688. By the Right Rev. T. V. SHORT, D.D. Lord Bishop of St. Asaph. Sixth Edition. Crown 8vo. 10s. 6d.

HISTORY of the EARLY CHURCH, from the First Preaching of the Gospel to the Council of Nicæa, A.D. 325. By the Author of 'Amy Herbert.' Fcp. 4s. 6d.

The **ENGLISH REFORMATION**. By F. C. MASSINGBERD, M.A. Chancellor of Lincoln and Rector of South Ormsby. Third Edition, revised and enlarged. Fcp. 6s.

HISTORY of WESLEYAN METHODISM. By GEORGE SMITH, F.A.S. Fourth Edition, with numerous Portraits. 3 vols. cr. 8vo. 7s. each.

VILLARI'S HISTORY of SAVONAROLA and of HIS TIMES, translated from the Italian by LEONARD HORNER, F.R.S. with the co-operation of the Author. 2 vols. post 8vo. with Medallion, 18s.

LECTURES on the HISTORY of MODERN MUSIC, delivered at the Royal Institution. By JOHN HULLAH, Professor of Vocal Music in King's College and in Queen's College, London. **FIRST COURSE**, with Chronological Tables, post 8vo. 6s. 6d. **SECOND COURSE**, on the Transition Period, with 40 Specimens, 8vo. 16s.

Biography and Memoirs.

LETTERS and LIFE of FRANCIS BACON, including all his Occasional Works. Collected and edited, with a Commentary, by J. SPEDDING, Trin. Coll. Cantab. VOLS. I. and II. 8vo. 24s.

PASSAGES from the LIFE of a PHILOSOPHER. By CHARLES BABBAGE, Esq. M.A. F.R.S. &c. 8vo. 12s.

LIFE of ROBERT STEPHENSON, F.R.S. By J. C. JEAFFRESON, Barrister-at-Law; and WILLIAM POLE, F.R.S. Memb. Inst. Civ. Eng. With 2 Portraits and 17 Illustrations. 2 vols. 8vo. 32s.

LIFE of the DUKE of WELLINGTON. By the Rev. G. R. GLEIG, M.A. Popular Edition, carefully revised; with copious Additions. Crown 8vo. with Portrait, 5s.

Brialmont and Gleig's Life of the Duke of Wellington. 4 vols. 8vo. with Illustrations, £2 14s.

Life of the Duke of Wellington, partly from the French of M. BRIALMONT, partly from Original Documents. By the Rev. G. R. GLEIG, M.A. 8vo. with Portrait, 15s.

HISTORY of MY RELIGIOUS OPINIONS. By J. H. NEWMAN, D.D. Being the Substance of Apologia pro Vita Sua. Post 8vo. 6s.

FATHER MATHEW: a Biography. By JOHN FRANCIS MAGUIRE, M.P. Popular Edition, with Portrait. Crown 8vo. 3s. 6d.

Rome; its Rulers and its Institutions. By the same Author. New Edition in preparation.

MEMOIRS, MISCELLANIES, and LETTERS of the late LUCY Aikin; including those addressed to Dr. Channing from 1836 to 1842. Edited by P. H. LE BRETON. Post 8vo. 8s. 6d.

LIFE of AMELIA WILHELMINA SIEVEKING, from the German. Edited, with the Author's sanction, by CATHERINE WINKWORTH. Post 8vo. with Portrait, 12s.

LOUIS SPOHR'S AUTOBIOGRAPHY. Translated from the German. 8vo. 14s.

DIARIES of a LADY of QUALITY, from 1797 to 1844. Edited, with Notes, by A. HAYWARD, Q.C. Second Edition. Post 8vo. 10s. 6d.

FELIX MENDELSSOHN'S LETTERS from *Italy and Switzerland*, and *Letters from 1833 to 1847*, translated by Lady WALLACE. New Edition, with Portrait. 2 vols. crown 8vo. 5s. each.

RECOLLECTIONS of the late **WILLIAM WILBERFORCE, M.P.** for the County of York during nearly 30 Years. By J. S. HARFORD, F.R.S. Second Edition. Post 8vo. 7s.

MEMOIRS of **SIR HENRY HAVELOCK, K.C.B.** By JOHN CLARK MARSHMAN. Second Edition. 8vo. with Portrait, 12s. 6d.

THOMAS MOORE'S MEMOIRS, JOURNAL, and CORRESPONDENCE. Edited and abridged from the First Edition by Earl RUSSELL. Square crown 8vo. with 8 Portraits, 12s. 6d.

MEMOIR of the Rev. **SYDNEY SMITH.** By his Daughter, Lady HOLLAND. With a Selection from his Letters, edited by Mrs. AUSTIN. 2 vols. 8vo. 28s.

VICISSITUDES of **FAMILIES.** By Sir BERNARD BURKE, Ulster King of Arms. FIRST, SECOND, and THIRD SERIES. 3 vols. crown 8vo. 12s. 6d. each.

ESSAYS in **ECCLESIASTICAL BIOGRAPHY.** By the Right Hon. Sir J. STEPHEN, LL.D. Fourth Edition. 8vo. 14s.

BIOGRAPHICAL SKETCHES. By NASSAU W. SENIOR. Post 8vo. price 10s. 6d.

BIOGRAPHIES of **DISTINGUISHED SCIENTIFIC MEN.** By FRANÇOIS ARAGO. Translated by Admiral W. H. SMYTH, F.R.S. the Rev. B. POWELL, M.A. and R. GRANT, M.A. 8vo. 18s.

MAUNDER'S BIOGRAPHICAL TREASURY: Memoirs, Sketches, and Brief Notices of above 12,000 Eminent Persons of All Ages and Nations. Fcp. 10s.

Criticism, Philosophy, Polity, &c.

PAPINIAN: a Dialogue on State Affairs between a Constitutional Lawyer and a Country Gentleman about to enter Public Life. By GEORGE ATKINSON, B.A. Oxon. Serjeant-at-Law. Post 8vo. 5s.

ELEMENTS of **LOGIC.** By R. WHATELY, D.D. late Archbishop of Dublin. Ninth Edition. 8vo. 10s. 6d. crown 8vo. 4s. 6d.

Elements of Rhetoric. By the same Author. Seventh Edition. 8vo. 10s. 6d. crown 8vo. 4s. 6d.

English Synonymes. Edited by Archbishop WHATELY. 5th Edition. Fcp. 3s.

BACON'S ESSAYS with **ANNOTATIONS.** By R. WHATELY, D.D. late Archbishop of Dublin. Sixth Edition. 8vo. 10s. 6d.

LORD BACON'S WORKS, collected and edited by R. L. ELLIS, M.A. J. SPEDDING, M.A. and D. D. HEATH. Vols. I. to V. *Philosophical Works*, 5 vols. 8vo. £4 6s. VOLS. VI. and VII. *Literary and Professional Works*, 2 vols. £1 16s.

On REPRESENTATIVE GOVERNMENT. By JOHN STUART MILL. Third Edition, 8vo. 9s. crown 8vo. 2s.

On Liberty. By the same Author. Third Edition. Post 8vo. 7s. 6d. crown 8vo. 1s. 4d.

Principles of Political Economy. By the same. Sixth Edition. 2 vols. 8vo. 30s. or in 1 vol. crown 8vo. 5s.

A System of Logic, Ratiocinative and Inductive. By the same. Fifth Edition. Two vols. 8vo. 25s.

Utilitarianism. By the same. Second Edition. 8vo. 5s.

Dissertations and Discussions. By the same Author. 2 vols. 8vo. price 24s.

Examination of Sir W. Hamilton's Philosophy, and of the Principal Philosophical Question discussed in his Writings. By the same Author. Second Edition. 8vo. 14s.

MISCELLANEOUS REMAINS from the Common-place Book of RICHARD WHATELY, D.D. late Archbishop of Dublin. Edited by Miss E. J. WHATELY. Crown 8vo. 7s. 6d.

ESSAYS on the ADMINISTRATIONS of GREAT BRITAIN from 1783 to 1830. By the Right Hon. Sir G. C. LEWIS, Bart. Edited by the Right Hon. Sir E. HEAD, Bart. 8vo. with Portrait, 15s.

By the same Author.

A Dialogue on the Best Form of Government, 4s. 6d.

Essay on the Origin and Formation of the Romance Languages, price 7s. 6d.

Historical Survey of the Astronomy of the Ancients, 15s.

Inquiry into the Credibility of the Early Roman History, 2 vols. price 30s.

On the Methods of Observation and Reasoning in Politics, 2 vols. price 28s.

Irish Disturbances and Irish Church Question, 12s.

Remarks on the Use and Abuse of some Political Terms, 9s.

On Foreign Jurisdiction and Extradition of Criminals, 2s. 6s.

The Fables of Babrius, Greek Text with Latin Notes, PART I. 5s. 6d. PART II. 3s. 6d.

Suggestions for the Application of the Egyptological Method to Modern History, 1s.

An OUTLINE of the NECESSARY LAWS of THOUGHT: a Treatise on Pure and Applied Logic. By the Most Rev. W. THOMSON, D.D. Archbishop of York. Crown 8vo. 5s. 6d.

The ELEMENTS of LOGIC. By THOMAS SHEDDEN, M.A. of St. Peter's Coll. Cantab. 12mo. 4s. 6d.

ANALYSIS of Mr. MILL'S SYSTEM of LOGIC. By W. STEBBING, M.A. Fellow of Worcester College, Oxford. 12mo. 3s. 6d.

The ELECTION of REPRESENTATIVES, Parliamentary and Municipal; a Treatise. By THOMAS HARE, Barrister-at-Law. Third Edition, with Additions. Crown 8vo. 6s.

SPEECHES of the RIGHT HON. LORD MACAULAY, corrected by Himself. 8vo. 12s.

LORD MACAULAY'S SPEECHES on PARLIAMENTARY REFORM in 1831 and 1832. 16mo. 1s.

A DICTIONARY of the ENGLISH LANGUAGE. By R. G. LATHAM, M.A. M.D. F.R.S. Founded on the Dictionary of Dr. S. JOHNSON, as edited by the Rev. H. J. TODD, with numerous Emendations and Additions. Publishing in 36 Parts, price 3s. 6d. each, to form 2 vols. 4to.

THESAURUS of ENGLISH WORDS and PHRASES, classified and arranged so as to facilitate the Expression of Ideas, and assist in Literary Composition. By P. M. ROGET, M.D. 14th Edition. Crown 8vo. 10s. 6d.

LECTURES on the SCIENCE of LANGUAGE, delivered at the Royal Institution. By MAX MÜLLER, M.A. Taylorian Professor in the University of Oxford. FIRST SERIES, Fourth Edition, 12s. SECOND SERIES, 18s.

The DEBATER; a Series of Complete Debates, Outlines of Debates, and Questions for Discussion. By F. ROWTON. Fcp. 6s.

A COURSE of ENGLISH READING, adapted to every taste and capacity; or, How and What to Read. By the Rev. J. PYCROFT, B.A. Fourth Edition. Fcp. 5s.

MANUAL of ENGLISH LITERATURE, Historical and Critical: with a Chapter on English Metres. By THOMAS ARNOLD, B.A. Post 8vo. 10s. 6d.

SOUTHEY'S DOCTOR, complete in One Volume. Edited by the Rev. J. W. WARTER, B.D. Square crown 8vo. 12s. 6d.

HISTORICAL and CRITICAL COMMENTARY on the OLD TESTAMENT; with a New Translation. By M. M. KALISCH, Ph.D. VOL. I. *Genesis*, 8vo. 18s. or adapted for the General Reader, 12s. VOL. II. *Exodus*, 15s. or adapted for the General Reader, 12s.

A Hebrew Grammar, with Exercises. By the same. PART I. *Outlines with Exercises*, 8vo. 12s. 6d. KEY, 5s. PART II. *Exceptional Forms and Constructions*, 12s. 6d.

- A LATIN-ENGLISH DICTIONARY.** By J. T. WHITE, M.A. of Corpus Christi College, and J. E. RIDDLE, M.A. of St. Edmund Hall, Oxford. Imperial 8vo. pp. 2,128, price 42s. cloth.
- A New Latin-English Dictionary,** abridged from the larger work of *White and Riddle* (as above), by J. T. WHITE, M.A. Joint-Author. Medium 8vo. pp. 1,048, price 18s. cloth.
- A Diamond Latin-English Dictionary, or Guide to the Meaning, Quality, and Accentuation of Latin Classical Words.** By Rev. J. E. RIDDLE, M.A. 32mo. 2s. 6d.
- An ENGLISH-GREEK LEXICON,** containing all the Greek Words used by Writers of good authority. By C. D. YONGE, B.A. Fifth Edition. 4to. 21s.
- Mr. YONGE'S NEW LEXICON,** English and Greek, abridged from his larger work (as above). Square 12mo. 8s. 6d.
- A GREEK-ENGLISH LEXICON.** Compiled by H. G. LIDDELL, D.D. Dean of Christ Church, and R. SCOTT, D.D. Master of Balliol. Fifth Edition. Crown 4to. 31s. 6d.
- A Lexicon, Greek and English,** abridged from LIDDELL and SCOTT'S *Greek-English Lexicon*. Eleventh Edition. Square 12mo. 7s. 6d.
- A PRACTICAL DICTIONARY of the FRENCH and ENGLISH LANGUAGES.** By L. CONTANSEAU. Ninth Edition. Post 8vo. 10s. 6d.
- Contanseau's Pocket Dictionary,** French and English, abridged from the above by the Author. Third Edition, 18mo. 5s.
- NEW PRACTICAL DICTIONARY of the GERMAN LANGUAGE;** German-English and English-German. By the Rev. W. L. BLACKLEY, M.A. and Dr. CARL MARTIN FRIEDLANDER. Post 8vo. [In the press.]

Miscellaneous Works and Popular Metaphysics.

- RECREATIONS of a COUNTRY PARSON:** being a Selection of the Contributions of A. K. H. B. to *Fraser's Magazine*. SECOND SERIES. Crown 8vo. 3s. 6d.
- The Common-place Philosopher in Town and Country.** By the same Author. Crown 8vo. 3s. 6d.
- Leisure Hours in Town;** Essays Consolatory, Æsthetical, Moral, Social, and Domestic. By the same Author. Crown 8vo. 3s. 6d.
- The Autumn Holidays of a Country Parson;** Essays contributed to *Fraser's Magazine* and to *Good Words*. By the same. Crown 8vo. 3s. 6d.
- The Graver Thoughts of a Country Parson.** SECOND SERIES. By the same Author. Crown 8vo. 3s. 6d.
- Critical Essays of a Country Parson.** Selected from Essays contributed to *Fraser's Magazine*. By the same Author. Post 8vo. 9s.

A CAMPAIGNER AT HOME. By SHIRLEY, Author of 'Thalatta' and 'Nugæ Criticæ.' Post 8vo. with Vignette, 7s. 6d.

FRIENDS in COUNCIL: a Series of Readings and Discourses thereon. 2 vols. fcp. 9s.

Friends in Council. SECOND SERIES. 2 vols. post 8vo. 14s.

Essays written in the Intervals of Business. Fcp. 2s. 6d.

LORD MACAULAY'S MISCELLANEOUS WRITINGS:

LIBRARY EDITION. 2 vols. 8vo. Portrait, 21s.

PEOPLE'S EDITION. 1 vol. crown 8vo. 4s. 6d.

The REV. SYDNEY SMITH'S MISCELLANEOUS WORKS; including his Contributions to the *Edinburgh Review*.

LIBRARY EDITION, 3 vols. 8vo. 36s.

TRAVELLER'S EDITION, in 1 vol. 21s.

In POCKET VOLUMES, 3 vols. fcp. 21s.

PEOPLE'S EDITION, 2 vols. crown 8vo. 8s.

Elementary Sketches of Moral Philosophy, delivered at the Royal Institution. By the same Author. Fcp. 7s.

The Wit and Wisdom of the Rev. Sydney Smith: a Selection of the most memorable Passages in his Writings and Conversation. 16mo. 7s. 6d.

The HISTORY of the SUPERNATURAL in All Ages and Nations, and in all Churches, Christian and Pagan; demonstrating a Universal Faith. By WILLIAM HOWITT. 2 vols. post 8vo. 18s.

The SUPERSTITIONS of WITCHCRAFT. By HOWARD WILLIAMS, M.A. St. John's Coll. Camb. Post 8vo. 7s. 6d.

CHAPTERS on MENTAL PHYSIOLOGY. By Sir HENRY HOLLAND, Bart. M.D. F.R.S. Second Edition. Post 8vo. 8s. 6d.

ESSAYS selected from CONTRIBUTIONS to the *Edinburgh Review*. By HENRY ROGERS. Second Edition. 3 vols. fcp. 21s.

The Eclipse of Faith; or, a Visit to a Religious Sceptic. By the same Author. Tenth Edition. Fcp. 5s.

Defence of the Eclipse of Faith, by its Author; a rejoinder to Dr. Newman's *Reply*. Third Edition. Fcp. 8vo. 3s. 6d.

Selections from the Correspondence of R. E. H. Greyson. By the same Author. Third Edition. Crown 8vo. 7s. 6d.

Fulleriana, or the Wisdom and Wit of THOMAS FULLER, with Essay on his Life and Genius. By the same Author. 16mo. 2s. 6d.

An INTRODUCTION to MENTAL PHILOSOPHY, on the Inductive Method. By J. D. MORELL, M.A. LL.D. 8vo. 12s.

Elements of Psychology, containing the Analysis of the Intellectual Powers. By the same Author. Post 8vo. 7s. 6d.

- The SECRET of HEGEL:** being the Hegelian System in Origin, Principle, Form, and Matter. By JAMES HUTCHISON STIRLING. 2 vols. 8vo. 28s.
- SIGHT and TOUCH:** an Attempt to Disprove the Received (or Berkeleyan) Theory of Vision. By THOMAS K. ABBOTT, M.A. Fellow and Tutor of Trin. Coll. Dublin. 8vo. with 21 Woodcuts, 5s. 6d.
- The SENSES and the INTELLECT.** By ALEXANDER BAIN, M.A. Professor of Logic in the University of Aberdeen. Second Edition. 8vo. price 15s.
- The Emotions and the Will,** by the same Author; completing a Systematic Exposition of the Human Mind. 8vo. 15s.
- On the Study of Character,** including an Estimate of Phrenology. By the same Author. 8vo. 9s.
- TIME and SPACE:** a Metaphysical Essay. By SHADWORTH H. HODGSON. 8vo. pp. 588, price 16s.
- HOURS WITH THE MYSTICS:** a Contribution to the History of Religious Opinion. By ROBERT ALFRED VAUGHAN, B.A. Second Edition. 2 vols. crown 8vo. 12s.
- PSYCHOLOGICAL INQUIRIES.** By the late Sir BENJ. C. BRODIE, Bart. 2 vols. or SERIES, fcp. 5s. each.
- The PHILOSOPHY of NECESSITY;** or Natural Law as applicable to Mental, Moral, and Social Science. By CHARLES BRAY. Second Edition. 8vo. 9s.
- The Education of the Feelings and Affections.** By the same Author. Third Edition. 8vo. 3s. 6d.
- CHRISTIANITY and COMMON SENSE.** By Sir WILLOUGHBY JONES, Bart. M.A. Trin. Coll. Cantab. 8vo. 6s.

Astronomy, Meteorology, Popular Geography, &c.

- OUTLINES of ASTRONOMY.** By Sir J. F. W. HERSCHEL, Bart. M.A. Seventh Edition, revised; with Plates and Woodcuts. 8vo. 18s.
- ARAGO'S POPULAR ASTRONOMY.** Translated by Admiral W. H. SMYTH, F.R.S. and R. GRANT, M.A. With 25 Plates and 358 Woodcuts. 2 vols. 8vo. £2 5s.
- Arago's Meteorological Essays,** with Introduction by Baron HUMBOLDT. Translated under the superintendence of Major-General E. SABINE, R.A. 8vo. 18s.
- SATURN and its SYSTEM.** By RICHARD A. PROCTOR, B.A. late Scholar of St John's Coll. Camb. and King's Coll. London. 8vo. with 14 Plates, 14s.

The WEATHER-BOOK; a Manual of Practical Meteorology. By Rear-Admiral ROBERT FITZ ROY, R.N. F.R.S. Third Edition, with 16 Diagrams. 8vo. 15s.

SAXBY'S WEATHER SYSTEM, or Lunar Influence on Weather. By S. M. SAXBY, R.N. Instructor of Naval Engineers. Second Edition. Post 8vo. 4s.

DOVE'S LAW of STORMS considered in connexion with the ordinary Movements of the Atmosphere. Translated by R. H. SCOTT, M.A. T.C.D. 8vo. 10s. 6d.

CELESTIAL OBJECTS for COMMON TELESCOPES. By the Rev. T. W. WEBB, M.A. F.R.A.S. With Map of the Moon, and Woodcuts. 16mo. 7s.

PHYSICAL GEOGRAPHY for SCHOOLS and GENERAL READERS. By M. F. MAURY, LL.D. Fcp. with 2 Charts, 2s. 6d.

A DICTIONARY, Geographical, Statistical, and Historical, of the various Countries, Places, and Principal Natural Objects in the World. By J. R. M'CULLOCH. With 6 Maps. 2 vols. 8vo. 63s.

A GENERAL DICTIONARY of GEOGRAPHY, Descriptive, Physical, Statistical, and Historical: forming a complete Gazetteer of the World. By A. KEITH JOHNSTON, F.R.S.E. 8vo. 31s. 6d.

A MANUAL of GEOGRAPHY, Physical, Industrial, and Political. By W. HUGHES, F.R.G.S. Professor of Geography in King's College, and in Queen's College, London. With 6 Maps. Fcp. 7s. 6d.

The Geography of British History; a Geographical Description of the British Islands at Successive Periods. By the same. With 6 Maps. Fcp. 8s. 6d.

Abridged Text-Book of British Geography. By the same. Fcp. 1s. 6d.

The BRITISH EMPIRE; a Sketch of the Geography, Growth, Natural and Political Features of the United Kingdom, its Colonies and Dependencies. By CAROLINE BRAY. With 5 Maps. Fcp. 7s. 6d.

COLONISATION and COLONIES: a Series of Lectures delivered before the University of Oxford. By HERMAN MERIVALE, M.A. Professor of Political Economy. 8vo. 18s.

MAUNDER'S TREASURY of GEOGRAPHY, Physical, Historical, Descriptive, and Political. Edited by W. HUGHES, F.R.G.S. With 7 Maps and 16 Plates. Fcp. 10s.

Natural History and Popular Science.

The ELEMENTS of PHYSICS or NATURAL PHILOSOPHY. By NEIL ARNOTT, M.D. F.R.S. Physician Extraordinary to the Queen. Sixth Edition. PART I. 8vo. 10s. 6d.

HEAT CONSIDERED as a MODE of MOTION. By Professor JOHN TYNDALL, LL.D. F.R.S. Second Edition. Crown 8vo. with Woodcuts, 12s. 6d.

VOLCANOS, the Character of their Phenomena, their Share in the Structure and Composition of the Surface of the Globe, &c. By G. POULETT SCROPE, M.P. F.R.S. Second Edition. 8vo. with Illustrations, 15s.

A TREATISE on ELECTRICITY, in Theory and Practice. By A. DE LA RIVE, Prof. in the Academy of Geneva. Translated by C. V. WALKER, F.R.S. 3 vols. 8vo. with Woodcuts, £3 13s.

The **CORRELATION of PHYSICAL FORCES**. By W. R. GROVE, Q.C. V.P.R.S. Fourth Edition. 8vo. 7s. 6d.

The **GEOLOGICAL MAGAZINE**; or, Monthly Journal of Geology. Edited by HENRY WOODWARD, F.G.S. F.Z.S. British Museum: assisted by Professor J. MORRIS, F.G.S. and R. ETHERIDGE, F.R.S.E. F.G.S. 8vo. price 1s. monthly.

A GUIDE to GEOLOGY. By J. PHILLIPS, M.A. Professor of Geology in the University of Oxford. Fifth Edition; with Plates and Diagrams. Fcp. 4s.

A GLOSSARY of MINERALOGY. By H. W. BRISTOW, F.G.S. of the Geological Survey of Great Britain. With 486 Figures. Crown 8vo. 12s.

PHILLIPS'S ELEMENTARY INTRODUCTION to MINERALOGY, with extensive Alterations and Additions, by H. J. BROOKE, F.R.S. and W. H. MILLER, F.G.S. Post 8vo. with Woodcuts, 18s.

VAN DER HOEVEN'S HANDBOOK of ZOOLOGY. Translated from the Second Dutch Edition by the Rev. W. CLARK, M.D. F.R.S. 2 vols. 8vo. with 24 Plates of Figures, 60s.

The **COMPARATIVE ANATOMY and PHYSIOLOGY of the VERTEBRATE Animals**. By RICHARD OWEN, F.R.S. D.C.L. 2 vols. 8vo. with upwards of 1,200 Woodcuts. [In the press.]

HOMES WITHOUT HANDS: an Account of the Habitations constructed by various Animals, classed according to their Principles of Construction. By Rev. J. G. WOOD, M.A. F.L.S. Illustrations on Wood by G. Pearson, from Drawings by F. W. Keyl and E. A. Smith. In 20 Parts, 1s. each.

MANUAL of CORALS and SEA JELLIES. By J. R. GREENE, B.A. Edited by the Rev. J. A. GALBRAITH, M.A. and the Rev. S. HAUGHTON, M.D. Fcp. with 39 Woodcuts, 5s.

Manual of Sponges and Animalculæ; with a General Introduction on the Principles of Zoology. By the same Author and Editors. Fcp. with 16 Woodcuts, 2s.

Manual of the Metalloids. By J. APJOHN, M.D. F.R.S. and the same Editors. Fcp. with 38 Woodcuts, 7s. 6d.

The **SEA and its LIVING WONDERS**. By Dr. G. HARTWIG. Second (English) Edition. 8vo. with many Illustrations. 18s.

The **TROPICAL WORLD**. By the same Author. With 8 Chromoxylographs and 172 Woodcuts. 8vo. 21s.

SKETCHES of the NATURAL HISTORY of CEYLON. By Sir J. EMERSON TENNENT, K.C.S. LL.D. With 82 Wood Engravings. Post 8vo. price 12s. 6d.

Ceylon. By the same Author. Fifth Edition; with Maps, &c. and 90 Wood Engravings. 2 vols. 8vo. £2 10s

A FAMILIAR HISTORY of BIRDS. By E. STANLEY, D.D. F.R.S.
late Lord Bishop of Norwich. Seventh Edition, with Woodcuts. Fcp. 3s. 6d.

MARVELS and MYSTERIES of INSTINCT; or, Curiosities of Animal Life. By G. GARRATT. Third Edition. Fcp. 7s.

HOME WALKS and HOLIDAY RAMBLES. By the Rev. C. A. JOHNS, B.A. F.L.S. Fcp. 8vo. with 10 Illustrations, 6s.

KIRBY and SPENCE'S INTRODUCTION to ENTOMOLOGY, or Elements of the Natural History of Insects. Seventh Edition. Crown 8vo. price 5s.

MAUNDER'S TREASURY of NATURAL HISTORY, or Popular Dictionary of Zoology. Revised and corrected by T. S. COBBOLD, M.D. Fcp. with 900 Woodcuts, 10s.

The TREASURY of BOTANY, on the Plan of Maunder's Treasury. By J. LINDLEY, M.D. and T. MOORE, F.L.S. assisted by other Practical Botanists. With 16 Plates, and many Woodcuts from designs by W. H. Fitch. Fcp. [In the press.]

The ROSE AMATEUR'S GUIDE. By THOMAS RIVERS. 8th Edition. Fcp. 4s.

The BRITISH FLORA; comprising the Phænogamous or Flowering Plants and the Ferns. By Sir W. J. HOOKER, K.H. and G. A. WALKER-ARNOTT, LL.D. 12mo. with 12 Plates, 14s. or coloured, 21s.

BRYOLOGIA BRITANNICA; containing the Mosses of Great Britain and Ireland, arranged and described. By W. WILSON. 8vo. with 61 Plates 42s. or coloured, £4 4s.

The INDOOR GARDENER. By Miss MALING. Fcp. with Frontispiece, printed in Colours, 5s.

LOUDON'S ENCYCLOPÆDIA of PLANTS; comprising the Specific Character, Description, Culture, History, &c. of all the Plants found in Great Britain. With upwards of 12,000 Woodcuts. 8vo. £3 13s. 6d.

Loudon's Encyclopædia of Trees and Shrubs; containing the Hardy Trees and Shrubs of Great Britain scientifically and popularly described. With 2,000 Woodcuts. 8vo. 50s.

MAUNDER'S SCIENTIFIC and LITERARY TREASURY; a Popular Encyclopædia of Science, Literature, and Art. Fcp. 10s.

A DICTIONARY of SCIENCE, LITERATURE, and ART. Fourth Edition. Edited by W. T. BRANDE, D.C.L. and GEORGE W. COX, M.A. assisted by gentlemen of eminent Scientific and Literary Acquirements. In 12 Parts, each containing 240 pages, price 5s. forming 3 vols. medium 8vo. price 21s. each.

ESSAYS on SCIENTIFIC and other SUBJECTS, contributed to Reviews. By Sir H. HOLLAND, Bart. M.D. Second Edition. 8vo. 14s.

ESSAYS from the EDINBURGH and QUARTERLY REVIEWS; with Addresses and other Pieces. By Sir J. F. W. HERSCHEL, Bart. M.A. 8vo. 18s.

Chemistry, Medicine, Surgery, and the Allied Sciences.

A DICTIONARY of CHEMISTRY and the Allied Branches of other Sciences; founded on that of the late Dr. Ure. By HENRY WATTS, F.C.S. assisted by eminent Contributors. 5 vols. medium 8vo. in course of publication in Parts. VOL. I. 31s. 6d. VOL. II. 26s. VOL. III. 31s. 6d. are now ready.

HANDBOOK of CHEMICAL ANALYSIS. Adapted to the Unitary System of Notation. By F. T. CONINGTON, M.A. F.C.S. Post 8vo. 7s. 6d.—**TABLES of QUALITATIVE ANALYSIS** adapted to the same, 2s. 6d.

A HANDBOOK of VOLUMETRICAL ANALYSIS. By ROBERT H. SCOTT, M.A. T.C.D. Post 8vo. 4s. 6d.

ELEMENTS of CHEMISTRY, Theoretical and Practical. By WILLIAM A. MILLER, M.D. LL.D. F.R.S. F.G.S. Professor of Chemistry, King's College, London. 3 vols. 8vo. £2 13s. **PART I. CHEMICAL PHYSICS.** Third Edition, 12s. **PART II. INORGANIC CHEMISTRY**, 21s. **PART III. ORGANIC CHEMISTRY**, Second Edition, 20s.

A MANUAL of CHEMISTRY, Descriptive and Theoretical. By WILLIAM ODLING, M.B. F.R.S. Lecturer on Chemistry at St. Bartholomew's Hospital. **PART I.** 8vo. 9s.

A Course of Practical Chemistry, for the use of Medical Students. By the same Author. Second Edition, with 70 new Woodcuts. Crown 8vo. price 7s. 6d.

The DIAGNOSIS and TREATMENT of the DISEASES of WOMEN; including the Diagnosis of Pregnancy. By GRAILY HEWITT, M.D. Physician to the British Lying-in Hospital. 8vo. 16s.

LECTURES on the DISEASES of INFANCY and CHILDHOOD. By CHARLES WEST, M.D. &c. Fifth Edition, revised and enlarged. 8vo. 16s.

EXPOSITION of the SIGNS and SYMPTOMS of PREGNANCY: with other Papers on subjects connected with Midwifery. By W. F. MONTGOMERY, M.A. M.D. M.R.I.A. 8vo. with Illustrations, 25s.

A SYSTEM of SURGERY, Theoretical and Practical. In Treatises by Various Authors. Edited by T. HOLMES, M.A. Cantab. Assistant-Surgeon to St. George's Hospital. 4 vols. 8vo. £4 13s.

Vol. I. General Pathology. 21s.

Vol. II. Local Injuries: Gunshot Wounds, Injuries of the Head, Back, Face, Neck, Chest, Abdomen, Pelvis, of the Upper and Lower Extremities, and Diseases of the Eye. 21s.

Vol. III. Operative Surgery. Diseases of the Organs of Circulation, Locomotion, &c. 21s.

Vol. IV. Diseases of the Organs of Digestion, of the Genito-Urinary System, and of the Breast, Thyroid Gland, and Skin; with **APPENDIX and GENERAL INDEX.** 30s.

LECTURES on the PRINCIPLES and PRACTICE of PHYSIC. By THOMAS WATSON, M.D. Physician-Extraordinary to the Queen. Fourth Edition. 2 vols. 8vo. 34s.

LECTURES on SURGICAL PATHOLOGY. By J. PAGET, F.R.S. Surgeon-Extraordinary to the Queen. Edited by W. TURNER, M.B. 8vo. with 117 Woodcuts, 21s.

A TREATISE on the CONTINUED FEVERS of GREAT BRITAIN. By C. MURCHISON, M.D. Senior Physician to the London Fever Hospital. 8vo. with coloured Plates, 18s.

ANATOMY, DESCRIPTIVE and SURGICAL. By HENRY GRAY, F.R.S. With 410 Wood Engravings from Dissections. Third Edition, by T. HOLMES, M.A. Cantab. Royal 8vo. 28s.

The CYCLOPÆDIA of ANATOMY and PHYSIOLOGY. Edited by the late R. B. TODD, M.D. F.R.S. Assisted by nearly all the most eminent cultivators of Physiological Science of the present age. 5 vols. 8vo. with 2,853 Woodcuts, £6 6s.

PHYSIOLOGICAL ANATOMY and PHYSIOLOGY of MAN. By the late R. B. TODD, M.D. F.R.S. and W. BOWMAN, F.R.S. of King's College. With numerous Illustrations. VOL. II. 8vo. 25s.

A DICTIONARY of PRACTICAL MEDICINE. By J. COPLAND, M.D. F.R.S. Abridged from the larger work by the Author, assisted by J. C. COPLAND, M.R.C.S. 1 vol. 8vo. [In the press.]

Dr. Copland's Dictionary of Practical Medicine (the larger work). 3 vols. 8vo. £5 11s.

The WORKS of SIR B. C. BRODIE, Bart. collected and arranged by CHARLES HAWKINS, F.R.C.S.E. 3 vols. 8vo. with Medallion and Facsimile, 48s.

Autobiography of Sir B. C. Brodie, Bart. Printed from the Author's materials left in MS. Fcp. 4s. 6d.

MEDICAL NOTES and REFLECTIONS. By Sir H. HOLLAND, Bart. M.D. Third Edition. 8vo. 18s.

A MANUAL of MATERIA MEDICA and THERAPEUTICS, abridged from Dr. PEREIRA's *Elements* by F. J. FARRE, M.D. Cantab. assisted by R. BENTLEY, M.R.C.S. and by R. WARINGTON, F.C.S. 1 vol. 8vo. [In October.]

Dr. Pereira's Elements of Materia Medica and Therapeutics. Third Edition. By A. S. TAYLOR, M.D. and G. O. REES, M.D. 3 vols. 8vo. with Woodcuts, £3 15s.

THOMSON'S CONSPECTUS of the BRITISH PHARMACOPEIA. Twenty-fourth Edition, corrected and made conformable throughout to the New Pharmacopœia of the General Council of Medical Education. By E. LLOYD BIRKETT, M.D. 18mo. 5s. 6d.

MANUAL of the DOMESTIC PRACTICE of MEDICINE. By W. B. KESTEVEN, F.R.C.S.E. Second Edition, thoroughly revised, with Additions. Fcp. 5s.

The Fine Arts, and Illustrated Editions.

The NEW TESTAMENT, illustrated with Wood Engravings after the Early Masters, chiefly of the Italian School. Crown 4to. 63s. cloth, gilt top; or £5 5s. elegantly bound in morocco.

LYRA GERMANICA; Hymns for the Sundays and Chief Festivals of the Christian Year. Translated by CATHERINE WINKWORTH; 125 Illustrations on Wood drawn by J. LEIGHTON, F.S.A. Fcp. 4to. 21s.

CATS' and FARLIE'S MORAL EMBLEMS; with Aphorisms, Adages, and Proverbs of all Nations: comprising 121 Illustrations on Wood by J. LEIGHTON, F.S.A. with an appropriate Text by R. PIGOT. Imperial 8vo. 31s. 6d.

BUNYAN'S PILGRIM'S PROGRESS: with 126 Illustrations on Steel and Wood by C. BENNETT; and a Preface by the Rev. C. KINGSLEY. Fcp. 4to. 21s.

SHAKSPEARE'S SENTIMENTS and SIMILES, printed in Black and Gold, and Illuminated in the Missal Style by HENRY NOEL HUMPHREYS. In massive covers, containing the Medallion and Cypher of Shakspeare. Square post 8vo. 21s.

The **HISTORY of OUR LORD**, as exemplified in Works of Art: with that of His Types in the Old and New Testament. By Mrs. JAMESON and Lady EASTLAKE. Being the concluding SERIES of 'Sacred and Legendary Art;' with 13 Etchings and 281 Woodcuts. 2 vols. square crown 8vo. 42s.

In the same Series, by Mrs. JAMESON.

Legends of the Saints and Martyrs. Fourth Edition, with 19 Etchings and 187 Woodcuts. 2 vols. 31s. 6d.

Legends of the Monastic Orders. Third Edition, with 11 Etchings and 88 Woodcuts. 1 vol. 21s.

Legends of the Madonna. Third Edition, with 27 Etchings and 165 Woodcuts. 1 vol. 21s.

Arts, Manufactures, &c.

ENCYCLOPÆDIA of ARCHITECTURE, Historical, Theoretical, and Practical. By JOSEPH GWILT. With more than 1,000 Woodcuts. 8vo. 42s.

TUSCAN SCULPTORS, their Lives, Works, and Times. With 45 Etchings and 28 Woodcuts from Original Drawings and Photographs. By CHARLES C. PERKINS. 2 vols. imperial 8vo. 63s.

The **ENGINEER'S HANDBOOK**; explaining the Principles which should guide the young Engineer in the Construction of Machinery. By C. S. LOWNDES. Post 8vo. 5s.

The **ELEMENTS of MECHANISM**. By T. M. GOODEVE, M.A. Professor of Mechanics at the R. M. Acad. Woolwich. Second Edition, with 217 Woodcuts. Post 8vo. 6s. 6d.

URE'S DICTIONARY of ARTS, MANUFACTURES, and MINES. Re-written and enlarged by ROBERT HUNT, F.R.S. assisted by numerous gentlemen eminent in Science and the Arts. With 2,000 Woodcuts. 3 vols. 8vo. £4.

ENCYCLOPÆDIA of CIVIL ENGINEERING, Historical, Theoretical, and Practical. By E. CRESY, C.E. With above 3,000 Woodcuts. 8vo. 42s.

TREATISE on MILLS and MILLWORK. By W. FAIRBAIRN, C.E. F.R.S. With 18 Plates and 322 Woodcuts. 2 vols. 8vo. 32s.

Useful Information for Engineers. By the same Author. **FIRST and SECOND SERIES**, with many Plates and Woodcuts. 2 vols. crown 8vo. 10s. 6d. each.

The Application of Cast and Wrought Iron to Building Purposes. By the same Author. Third Edition, with 6 Plates and 118 Woodcuts. 8vo. 16s.

The PRACTICAL MECHANIC'S JOURNAL: an Illustrated Record of Mechanical and Engineering Science, and Epitome of Patent Inventions 4to. price 1s. monthly.

The PRACTICAL DRAUGHTSMAN'S BOOK of INDUSTRIAL DESIGN. By W. JOHNSON, Assoc. Inst. C.E. With many hundred Illustrations 4to. 28s. 6d.

The PATENTEE'S MANUAL: a Treatise on the Law and Practice of Letters Patent for the use of Patentees and Inventors. By J. and J. H. JOHNSON. Post 8vo. 7s. 6d.

The ARTISAN CLUB'S TREATISE on the STEAM ENGINE, in its various Applications to Mines, Mills, Steam Navigation, Railways and Agriculture. By J. BOURNE, C.E. Sixth Edition; with 37 Plates and 546 Woodcuts. 4to. 42s.

Catechism of the Steam Engine, in its various Applications to Mines, Mills, Steam Navigation, Railways, and Agriculture. By the same Author. With 199 Woodcuts. Fcp. 9s. The **INTRODUCTION of 'Recent Improvements'** may be had separately, with 110 Woodcuts, price 3s. 6d.

Handbook of the Steam Engine. By the same Author, forming a **KEY** to the Catechism of the Steam Engine, with 67 Woodcuts. Fcp. 9s.

The THEORY of WAR Illustrated by numerous Examples from History. By Lieut.-Col. P. L. MACDOUGALL. Third Edition, with 10 Plans. Post 8vo. 10s. 6d.

COLLIERIES and COLLIERS; A Handbook of the Law and leading Cases relating thereto. By J. C. FOWLER, Barrister-at-Law, Stipendiary Magistrate. Fcp. 6s.

The ART of PERFUMERY; the History and Theory of Odours, and the Methods of Extracting the Aromas of Plants. By Dr. PIESSE, F.C.S. Third Edition, with 53 Woodcuts. Crown 8vo. 10s. 6d.

Chemical, Natural, and Physical Magic, for Juveniles during the Holidays. By the same Author. Third Edition, enlarged, with 38 Woodcuts. Fcp. 6s.

The Laboratory of Chemical Wonders: a Scientific Mélange for Young People. By the same. Crown 8vo. 5s. 6d.

TALPA; or the Chronicles of a Clay Farm. By C. W. HOSKYNs, Esq. With 24 Woodcuts from Designs by G. CRUIKSHANK. 16mo. 5s. 6d.

H.R.H the PRINCE CONSORT'S FARMS: an Agricultural Memoir. By JOHN CHALMERS MORTON. Dedicated by permission to Her Majesty the QUEEN. With 40 Wood Engravings. 4to. 52s. 6d.

LOUDON'S ENCYCLOPÆDIA of AGRICULTURE: comprising the Laying-out, Improvement, and Management of Landed Property, and the Cultivation and Economy of the Productions of Agriculture. With 1,100 Woodcuts. 8vo. 31s. 6d.

Loudon's Encyclopædia of Gardening: comprising the Theory and Practice of Horticùlture, Floriculture, Arboriculture, and Landscape Gardening. With 1,000 Woodcuts. 8vo. 31s. 6d.

Loudon's Encyclopædia of Cottage, Farm, and Villa Architecture and Furniture. With more than 2,000 Woodcuts. 8vo. 42s.

HISTORY of WINDSOR GREAT PARK and WINDSOR FOREST. By WILLIAM MENZIES, Resident Deputy Surveyor. With 2 Maps and 20 Photographs. Imp. folio, £8 8s.

The Sanitary Management and Utilisation of Sewage: comprising Details of a System applicable to Cottages, Dwelling-Houses, Public Buildings, and Towns; Suggestions relating to the Arterial Drainage of the Country, and the Water Supply of Rivers. By the same Author. Imp. 8vo. with 9 Illustrations, 12s. 6d.

BAYLDON'S ART of VALUING RENTS and TILLAGES, and Claims of Tenants upon Quitting Farms, both at Michaelmas and Lady-Day. Eighth Edition, revised by J. C. MORTON. 8vo. 10s. 6d.

Religious and Moral Works.

An EXPOSITION of the 39 ARTICLES, Historical and Doctrinal. By E. HAROLD BROWNE, D.D. Lord Bishop of Ely. Sixth Edition, 8vo. 16s.

The Pentateuch and the Elohistie Psalms, in Reply to Bishop Colenso. By the same. Second Edition. 8vo. 2s.

Examination Questions on Bishop Browne's Exposition of the Articles. By the Rev. J. GORLE, M.A. Fcp. 3s. 6d.

FIVE LECTURES on the CHARACTER of ST. PAUL; being the Hulsean Lectures for 1862. By the Rev. J. S. HOWSON, D.D. Second Edition. 8vo. 9s.

The LIFE and EPISTLES of ST. PAUL. By W. J. CONYBEARE, M.A. late Fellow of Trin. Coll. Cantab. and J. S. HOWSON, D.D. Principal of Liverpool Coll.

LIBRARY EDITION, with all the Original Illustrations, Maps, Landscapes on Steel, Woodcuts, &c. 2 vols. 4to. 48s.

INTERMEDIATE EDITION, with a Selection of Maps, Plates, and Woodcuts. 2 vols. square crown 8vo. 31s. 6d.

PEOPLE'S EDITION, revised and condensed, with 46 Illustrations and Maps. 2 vols. crown 8vo. 12s.

The VOYAGE and SHIPWRECK of ST. PAUL; with Dissertations on the Ships and Navigation of the Ancients. By JAMES SMITH, F.R.S. Crown 8vo. Charts, 8s. 6d.

A CRITICAL and GRAMMATICAL COMMENTARY on ST. PAUL'S
Epistles. By C. J. ELLICOTT, D.D. Lord Bishop of Gloucester and Bristol. 8vo
Galatians, Third Edition, 8s. 6d.

Ephesians, Third Edition, 8s. 6d.

Pastoral Epistles, Third Edition, 10s. 6d.

Philippians, Colossians, and Philemon, Third Edition, 10s. 6d.

Thessalonians, Second Edition, 7s. 6d.

Historical Lectures on the Life of our Lord Jesus Christ: being the
Hulsean Lectures for 1859. By the same Author. Fourth Edition. 8vo.
price 10s. 6d.

The Destiny of the Creature; and other Sermons preached before
the University of Cambridge. By the same. Post 8vo. 5s.

The Broad and the Narrow Way; Two Sermons preached before
the University of Cambridge. By the same. Crown 8vo. 2s.

Rev. T. H. HORNE'S INTRODUCTION to the CRITICAL STUDY
and Knowledge of the Holy Scriptures. Eleventh Edition, corrected and
extended under careful Editorial revision. With 4 Maps and 22 Woodcuts
and Facsimiles. 4 vols. 8vo. £3 13s. 6d.

Rev. T. H. Horne's Compendious Introduction to the Study of the
Bible, being an Analysis of the larger work by the same Author. Re-edited
by the Rev. JOHN AYRE, M.A. With Maps. &c. Post 8vo. 9s.

The TREASURY of BIBLE KNOWLEDGE, on the Plan of Maunders's
Treasures. By the Rev. JOHN AYRE, M.A. Fcp. 8vo. with Maps and Illus-
trations. [In the press.]

The GREEK TESTAMENT; with Notes, Grammatical and Exegetical.
By the Rev. W. WEBSTER, M.A. and the Rev. W. F. WILKINSON, M.A. 2
vols. 8vo. £2 4s.

VOL. I. the Gospels and Acts, 20s.

VOL. II. the Epistles and Apocalypse, 24s.

The FOUR EXPERIMENTS in Church and State ; and the Conflicts
of Churches. By Lord ROBERT MONTAGU, M.P. 8vo. 12s.

EVERY-DAY SCRIPTURE DIFFICULTIES explained and illustrated;
Gospels of St. Matthew and St. Mark. By J. E. PRESCOTT, M.A. 8vo. 9s.

The PENTATEUCH and BOOK of JOSHUA CRITICALLY EXAMINED.
By the Right Rev. J. W. COLENZO, D.D. Lord Bishop of Natal. People's
Edition, in 1 vol. crown 8vo. 6s. or in 5 Parts, 1s. each.

The PENTATEUCH and BOOK of JOSHUA CRITICALLY EXAMINED.
By Prof. A. KUENEN, of Leyden. Translated from the Dutch, and edited
with Notes, by the Right Rev. J. W. COLENZO, D.D. Bishop of Natal. 8vo.
8s. 6d.

The FORMATION of CHRISTENDOM. PART I. By T. W. ALLIES.
8vo. 12s.

CHRISTENDOM'S DIVISIONS: a Philosophical Sketch of the Divisions of the Christian Family in East and West. By EDMUND S. FFOULKES, formerly Fellow and Tutor of Jesus Coll. Oxford. Post 8vo. 7s. 6d.

The LIFE of CHRIST: an Eclectic Gospel, from the Old and New Testaments, arranged on a New Principle, with Analytical Tables, &c. By CHARLES DE LA PRYME, M.A. Trin. Coll. Camb. Revised Edition, 8vo. 5s.

The HIDDEN WISDOM of CHRIST and the KEY of KNOWLEDGE; or, History of the Apocrypha. By ERNEST DE BUNSEN. 2 vols. 8vo. 28s.

HIPPOLYTUS and his AGE; or, the Beginnings and Prospects of Christianity. By Baron BUNSEN, D.D. 2 vols. 8vo. 30s.

Outlines of the Philosophy of Universal History, applied to Language and Religion: Containing an Account of the Alphabetical Conferences. By the same Author. 2 vols. 8vo. 33s.

Analecta Ante-Nicæna. By the same Author. 3 vols. 8vo. 42s.

ESSAYS on RELIGION and LITERATURE. By various Writers. Edited by H. E. MANNING, D.D. 8vo. 10s. 6d.

ESSAYS and REVIEWS. By the Rev. W. TEMPLE, D.D. the Rev. R. WILLIAMS, B.D. the Rev. B. POWELL, M.A. the Rev. H. B. WILSON, B.D. C. W. GOODWIN, M.A. the Rev. M. PATTISON, B.D. and the Rev. B. JOWETT, M.A. Twelfth Edition. Fcp. 8vo. 5s.

MOSHEIM'S ECCLESIASTICAL HISTORY. MURDOCK and SOAMES'S Translation and Notes, re-edited by the Rev. W. STUBBS, M.A. 3 vols. 8vo. 45s.

BISHOP JEREMY TAYLOR'S ENTIRE WORKS: With Life by BISHOP HEBER. Revised and corrected by the Rev. C. P. EDEN, 10 vols. price £5 5s.

PASSING THOUGHTS on RELIGION. By the Author of 'Amy Herbert.' Eighth Edition. Fcp. 8vo. 5s.

Thoughts for the Holy Week, for Young Persons. By the same Author. Third Edition. Fcp. 8vo. 2s.

Night Lessons from Scripture. By the same Author. Second Edition. 32mo. 3s.

Self-Examination before Confirmation. By the same Author. 32mo. price 1s. 6d.

Readings for a Month Preparatory to Confirmation, from Writers of the Early and English Church. By the same. Fcp. 4s.

Readings for Every Day in Lent, compiled from the Writings of Bishop JEREMY TAYLOR. By the same. Fcp. 5s.

Preparation for the Holy Communion; the Devotions chiefly from the works of JEREMY TAYLOR. By the same. 32mo. 3s.

MORNING CLOUDS. Second Edition. Fcp. 5s.

Spring and Autumn. By the same Author. Post 8vo. 6s.

The WIFE'S MANUAL; or, Prayers, Thoughts, and Songs on Several Occasions of a Matron's Life. By the Rev. W. CALVERT, M.A. Crown 8vo. price 10s. 6d.

SPIRITUAL SONGS for the **SUNDAYS** and **HOLIDAYS** throughout the Year. By J. S. B. MONSELL, LL.D. Vicar of Egham. Fourth Edition. Fcp. 4s. 6d.

The Beatitudes: Abasement before God; Sorrow for Sin; Meekness of Spirit; Desire for Holiness; Gentleness; Purity of Heart; the Peacemakers; Sufferings for Christ. By the same. Second Edition, fcp. 3s. 6d.

HYMNOLOGIA CHRISTIANA; or, Psalms and Hymns selected and arranged in the order of the Christian Seasons. By B. H. KENNEDY, D.D. Prebendary of Lichfield. Crown 8vo. 7s. 6d.

LYRA DOMESTICA; Christian Songs for Domestic Edification. Translated from the *Psaltery and Harp* of C. J. P. SPITTA, and from other sources, by RICHARD MASSIE. FIRST and SECOND SERIES, fcp. 4s. 6d. each.

LYRA SACRA; Hymns, Ancient and Modern, Odes and Fragments of Sacred Poetry. Edited by the Rev. B. W. SAVILE, M.A. Fcp. 5s.

LYRA GERMANICA, translated from the German by Miss C. WINKWORTH. FIRST SERIES, Hymns for the Sundays and Chief Festivals; SECOND SERIES, the Christian Life. Fcp. 5s. each SERIES.

Hymns from *Lyra Germanica*, 18mo. 1s.

HISTORICAL NOTES to the '**LYRA GERMANICA**:' containing brief Memoirs of the Authors of the Hymns, and Notices of Remarkable Occasions on which some of them have been used; with Notices of other German Hymn Writers. By THEODORE KÜBLER. Fcp. 7s. 6d.

LYRA EUCHARISTICA; Hymns and Verses on the Holy Communion, Ancient and Modern: with other Poems. Edited by the Rev. ORBY SHIPLEY, M.A. Second Edition. Fcp. 7s. 6d.

Lyra Messianica; Hymns and Verses on the Life of Christ, Ancient and Modern; with other Poems. By the same Editor. Fcp. 7s. 6d.

Lyra Mystica; Hymns and Verses on Sacred Subjects, Ancient and Modern. By the same Editor. Fcp. 7s. 6d.

The CHORALE BOOK for **ENGLAND**; a complete Hymn-Book in accordance with the Services and Festivals of the Church of England: the Hymns translated by Miss C. WINKWORTH; the tunes arranged by Prof. W. S. BENNETT and OTTO GOLDSCHMIDT. Fcp. 4to. 12s. 6d.

Congregational Edition. Fcp. 2s.

The CATHOLIC DOCTRINE of the **ATONEMENT**: an Historical Inquiry into its Development in the Church; with an Introduction on the Principle of Theological Developments. By H. N. OXENHAM, M.A. formerly Scholar of Balliol College, Oxford. 8vo. 8s. 6d.

FROM SUNDAY TO SUNDAY: an attempt to consider familiarly the Weekday Life and Labours of a Country Clergyman. By R. GEE, M.A. Vicar of Abbott's Langley and Rural Dean. Fcp. 5s.

FIRST SUNDAYS at **CHURCH**; or, Familiar Conversations on the Morning and Evening Services of the Church of England. By J. E. RIDDLE, M.A. Fcp. 2s. 6d.

The JUDGMENT of CONSCIENCE, and other Sermons. By RICHARD WHATELY, D.D. late Archbishop of Dublin. Crown 8vo. 4s. 6d.

PALEY'S MORAL PHILOSOPHY, with Annotations. By RICHARD WHATELY, D.D. late Archbishop of Dublin. 8vo. 7s.

Travels, Voyages, &c.

OUTLINE SKETCHES of the HIGH ALPS of DAUPHINÉ. By T. G. BONNEY, M.A. F.G.S. M.A.C. Fellow of St. John's Coll. Camb. With 13 Plates and a Coloured Map. Post 4to. 16s.

ICE-CAVES of FRANCE and SWITZERLAND; a Narrative of Subterranean Exploration. By the Rev. G. F. BROWNE, M.A. Fellow and Assistant-Tutor of St. Catherine's Coll. Cambridge, M.A.C. With 11 Illustrations on Wood. Square crown 8vo. 12s. 6d.

VILLAGE LIFE in SWITZERLAND. By SOPHIA D. DELMARD. Post 8vo. 9s. 6d.

HOW WE SPENT the SUMMER; or, a Voyage en Zigzag in Switzerland and Tyrol with some Members of the ALPINE CLUB. From the Sketch-Book of one of the Party. In oblong 4to. with about 300 Illustrations, 10s. 6d.

MAP of the CHAIN of MONT BLANC, from an actual Survey in 1863—1864. By A. ADAMS-REILLY, F.R.G.S. M.A.C. Published under the Authority of the Alpine Club. In Chromolithography on extra stout drawing-paper 28in. x 17in. price 10s. or mounted on canvas in a folding case, 12s. 6d.

The HUNTING-GROUNDS of the OLD WORLD. FIRST SERIES, Asia. By H. A. L. the Old Shekarry. Third Edition, with 7 Illustrations, 8vo. 18s.

CAMP and CANTONMENT; a Journal of Life in India in 1857—1859, with some Account of the Way thither. By Mrs. LEOPOLD PAGET. To which is added a Short Narrative of the Pursuit of the Rebels in Central India by Major PAGET, R.H.A. Post 8vo. 10s. 6d.

EXPLORATIONS in SOUTH-WEST AFRICA, from Walvisch Bay to Lake Ngami and the Victoria Falls. By THOMAS BAINES, F.R.G.S. 8vo. with Map and Illustrations, 21s.

SOUTH AMERICAN SKETCHES; or, a Visit to Rio Janeiro, the Organ Mountains, La Plata, and the Paraná. By THOMAS W. HINCHLIFF, M.A. F.R.G.S. Post 8vo. with Illustrations, 12s. 6d.

VANCOUVER ISLAND and BRITISH COLUMBIA; their History, Resources, and Prospects. By MATTHEW MACFIE, F.R.G.S. With Maps and Illustrations. 8vo. 18s.

HISTORY of DISCOVERY in our AUSTRALASIAN COLONIES, Australia, Tasmania, and New Zealand, from the Earliest Date to the Present Day. By WILLIAM HOWITT. With 3 Maps of the Recent Explorations from Official Sources. 2 vols. 8vo. 28s.

The CAPITAL of the TYCOON; a Narrative of a Three Years' Residence in Japan. By Sir RUTHERFORD ALCOCK, K.C.B. 2 vols. 8vo. with numerous Illustrations, 42s.

LAST WINTER in ROME. By C. R. WELD. With Portrait and Engravings on Wood. Post 8vo. 14s.

AUTUMN RAMBLES in NORTH AFRICA. By JOHN ORMSBY, of the Middle Temple. With 16 Illustrations. Post 8vo. 8s. 6d.

The DOLOMITE MOUNTAINS. Excursions through Tyrol, Carinthia, Carniola, and Friuli in 1861, 1862, and 1863. By J. GILBERT and G. C. CHURCHILL, F.R.G.S. With numerous Illustrations. Square crown 8vo. 21s.

A SUMMER TOUR in the GRISONS and ITALIAN VALLEYS of the Bernina. By Mrs. HENRY FRESHFIELD. With 2 Coloured Maps and 4 Views. Post 8vo. 10s. 6d.

Alpine Byeways; or, Light Leaves gathered in 1859 and 1860. By the same Authoress. Post 8vo. with Illustrations, 10s. 6d.

A LADY'S TOUR ROUND MONTE ROSA; including Visits to the Italian Valleys. With Map and Illustrations. Post 8vo. 14s.

GUIDE to the PYRENEES, for the use of Mountaineers. By CHARLES PACKE. With Maps, &c. and Appendix. Fcp. 6s.

The ALPINE GUIDE. By JOHN BALL, M.R.I.A. late President of the Alpine Club. Post 8vo. with Maps and other Illustrations.

Guide to the Western Alps, including Mont Blanc, Monte Rosa, Zermatt, &c. 7s. 6d.

Guide to the Oberland and all Switzerland, excepting the Neighbourhood of Monte Rosa and the Great St. Bernard; with Lombardy and the adjoining portion of Tyrol. 7s. 6d.

CHRISTOPHER COLUMBUS; his Life, Voyages, and Discoveries. Revised Edition, with 4 Woodcuts. 18mo. 2s. 6d.

CAPTAIN JAMES COOK; his Life, Voyages, and Discoveries. Revised Edition, with numerous Woodcuts. 18mo. 2s. 6d.

NARRATIVES of SHIPWRECKS of the ROYAL NAVY between 1793 and 1857, compiled from Official Documents in the Admiralty by W. O. S. GILLY; with a Preface by W. S. GILLY, D.D. Third Edition, fcp. 5s.

A WEEK at the LAND'S END. By J. T. BLIGHT; assisted by E. H. RODD, R. Q. COUCH, and J. RALFS. With Map and 96 Woodcuts. Fcp. price 6s. 6d.

VISITS to REMARKABLE PLACES: Old Halls, Battle-Fields, and Scenes Illustrative of Striking Passages in English History and Poetry. By WILLIAM HOWITT. 2 vols. square crown 8vo. with Wood Engravings, price 25s.

The RURAL LIFE of ENGLAND. By the same Author. With Woodcuts by Bewick and Williams. Medium 8vo. 12s. 6d.

Works of Fiction.

LATE LAURELS: a Tale. By the Author of 'Wheat and Tares.' 2 vols. post 8vo. 15s.

A FIRST FRIENDSHIP. [Reprinted from *Fraser's Magazine*.] Crown 8vo. 7s. 6d.

ATHERSTONE PRIORY. By L. N. COMYN. 2 vols. post 8vo. 21s.

Ellice: a Tale. By the same. Post 8vo. 9s. 6d.

STORIES and TALES by the Author of 'Amy Herbert,' uniform Edition, each Tale or Story complete in a single Volume.

AMY HERBERT, 2s. 6d.

GERTRUDE, 2s. 6d.

EARL'S DAUGHTER, 2s. 6d.

EXPERIENCE OF LIFE, 2s. 6d.

CLEVE HALL, 3s. 6d.

IVORS, 3s. 6d.

KATHARINE ASHTON, 3s. 6d.

MARGARET PERCIVAL, 5s.

LANETON PARSONAGE, 4s. 6d.

URSULA, 4s. 6d.

A Glimpse of the World. By the Author of 'Amy Herbert.' Fcp. 7s. 6d.

ESSAYS on FICTION; reprinted chiefly from Reviews, with Additions. By NASSAU W. SENIOR. Post 8vo. 10s. 6d.

ELIHU JAN'S STORY; or, the Private Life of an Eastern Queen. By WILLIAM KNIGHTON, LL.D. Assistant-Commissioner in Oudh. Post 8vo. 7s. 6d.

THE SIX SISTERS of the VALLEYS: an Historical Romance. By W. BRAMLEY-MOORE, M.A. Incumbent of Gerrard's Cross, Bucks. Third Edition, with 14 Illustrations. Crown 8vo. 5s.

The GLADIATORS: A Tale of Rome and Judæa. By G. J. WHYTE MELVILLE. Crown 8vo. 5s.

Digby Grand, an Autobiography. By the same Author. 1 vol. 5s.

Kate Coventry, an Autobiography. By the same. 1 vol. 5s.

General Bounce, or the Lady and the Locusts. By the same. 1 vol. 5s.

Holmby House, a Tale of Old Northamptonshire. 1 vol. 5s.

Good for Nothing, or All Down Hill. By the same. 1 vol. 6s.

The Queen's Maries, a Romance of Holyrood. 1 vol. 6s.

The Interpreter, a Tale of the War. By the same. 1 vol. 5s.

TALES from GREEK MYTHOLOGY. By George W. COX, M.A. late Scholar of Trin. Coll. Oxon. Second Edition. Square 16mo. 3s. 6d.

Tales of the Gods and Heroes. By the same Author. Second Edition. Fcp. 5s.

Tales of Thebes and Argos. By the same Author. Fcp. 4s. 6d.

The WARDEN: a Novel. By ANTHONY TROLLOPE. Crown 8vo. 3s. 6d.

Barchester Towers: a Sequel to 'The Warden.' By the same Author. Crown 8vo. 5s.

Poetry and the Drama.

SELECT WORKS of the **BRITISH POETS**; with Biographical and Critical Prefaces by Dr. AIKIN; with Supplement of more recent Selections by LUCY AIKIN. Medium 8vo. 18s.

GOETHE'S SECOND FAUST. Translated by JOHN ANSTER, LL.D. M.R.I.A. Regius Professor of Civil Law in the University of Dublin. Post 8vo. 15s.

TASSO'S JERUSALEM DELIVERED. Translated into English Verse by Sir J. KINGSTON JAMES, Kt. M.A. 2 vols. fcp. with Facsimile, 14s.

POETICAL WORKS of **JOHN EDMUND READE**; with final Revision and Additions. 3 vols. fcp. 18s. or each vol. separately, 6s.

MOORE'S POETICAL WORKS, Cheapest Editions complete in 1 vol. including the Autobiographical Prefaces and Author's last Notes, which are still copyright. Crown 8vo. ruby type, with Portrait, 7s. 6d. or People's Edition, in larger type, 12s. 6d.

Moore's Poetical Works, as above, Library Edition, medium 8vo. with Portrait and Vignette, 14s. or in 10 vols. fcp. 3s. 6d. each.

TENNIEL'S EDITION of **MOORE'S LALLA ROOKH**, with 68 Wood Engravings from original Drawings and other Illustrations. Fcp. 4to. 21s.

Moore's Lalla Rookh. 32mo. Plate, 1s. 16mo. Vignette, 2s. 6d.

MACLISE'S EDITION of **MOORE'S IRISH MELODIES**, with 161 Steel Plates from Original Drawings. Super-royal 8vo. 31s. 6d.

Moore's Irish Melodies, 32mo. Portrait, 1s. 16mo. Vignette, 2s. 6d.

SOUTHEY'S POETICAL WORKS, with the Author's last Corrections and copyright Additions. Library Edition, in 1 vol. medium 8vo. with Portrait and Vignette, 14s. or in 10 vols. fcp. 3s. 6d. each.

LAYS of **ANCIENT ROME**; with *Ivry* and the *Armada*. By the Right Hon. LORD MACAULAY. 16mo. 4s. 6d.

Lord Macaulay's Lays of Ancient Rome. With 90 Illustrations on Wood, Original and from the Antique, from Drawings by G. SCHARF. Fcp. 4to. 21s.

POEMS. By JEAN INGELow. Ninth Edition. Fcp. 8vo. 5s.

POETICAL WORKS of LETITIA ELIZABETH LANDON (L.E.L.)
2 vols. 16mo. 10s.

PLAYTIME with the POETS : a Selection of the best English Poetry for the use of Children. By a LADY. Crown 8vo. 5s.

BOWDLER'S FAMILY SHAKSPEARE, cheaper Genuine Edition, complete in 1 vol. large type, with 36 Woodcut Illustrations, price 14s. or with the same ILLUSTRATIONS, in 6 pocket vols. 3s. 6d. each.

ARUNDINES CAMI, sive Musarum Cantabrigiensium Lusus canori. Collegit atque edidit H. DRURY, M.A. Editio Sexta, curavit H. J. HODGSON, M.A. Crown 8vo. 7s. 6d.

Rural Sports, &c.

ENCYCLOPÆDIA of RURAL SPORTS ; a complete Account, Historical, Practical, and Descriptive, of Hunting, Shooting, Fishing, Racing, &c. By D. P. BLAINE. With above 600 Woodcuts (20 from Designs by JOHN LEECH). 8vo. 42s.

NOTES on RIFLE SHOOTING. By Captain HEATON, Adjutant of the Third Manchester Rifle Volunteer Corps. Fcp. 2s. 6d.

COL. HAWKER'S INSTRUCTIONS to YOUNG SPORTSMEN in all that relates to Guns and Shooting. Revised by the Author's SON. Square crown 8vo. with Illustrations, 18s.

The DEAD SHOT, or Sportsman's Complete Guide ; a Treatise on the Use of the Gun, Dog-breaking, Pigeon-shooting, &c. By MARKSMAN. Fcp. 8vo. with Plates, 5s.

The FLY-FISHER'S ENTOMOLOGY. By ALFRED RONALDS. With coloured Representations of the Natural and Artificial Insect. Sixth Edition ; with 20 coloured Plates. 8vo. 14s.

HANDBOOK of ANGLING : Teaching Fly-fishing, Trolling, Bottom-fishing, Salmon-fishing ; with the Natural History of River Fish, and the best modes of Catching them. By EPHEMERA. Fcp. Woodcuts, 5s.

The CRICKET FIELD ; or, the History and the Science of the Game of Cricket. By JAMES PYCROFT, B.A. Trin. Coll. Oxon. Fourth Edition. Fcp. 5s.

The Cricket Tutor ; a Treatise exclusively Practical. By the same. 18mo. 1s.

Cricketana. By the same Author. With 7 Portraits of Cricketers. Fcp. 5s.

The HORSE'S FOOT, and HOW to KEEP IT SOUND. By W. MILES, Esq. Ninth Edition, with Illustrations. Imp. 8vo. 12s. 6d.

A Plain Treatise on Horse-Shoeing. By the same Author. Post 8vo. with Illustrations, 2s. 6d.

Stables and Stable-Fittings. By the same. Imp. 8vo. with 13 Plates, 15s.

Remarks on Horses' Teeth, addressed to Purchasers. By the same. Post 8vo. 1s. 6d.

On DRILL and MANŒUVRES of CAVALRY, combined with Horse Artillery. By Major-Gen. MICHAEL W. SMITH, C.B. Commanding the Poonah Division of the Bombay Army. 8vo. 12s. 6d.

The HORSE: with a Treatise on Draught. By WILLIAM YOUATT. New Edition, revised and enlarged. 8vo. with numerous Woodcuts, 10s. 6d.

The Dog. By the same Author. 8vo. with numerous Woodcuts, 6s.

The DOG in HEALTH and DISEASE. By STONEHENGE. With 70 Wood Engravings. Square crown 8vo. 15s.

The Greyhound in 1864. By the same Author. With 24 Portraits of Greyhounds. Square crown 8vo. 21s.

The OX; his Diseases and their Treatment: with an Essay on Parturition in the Cow. By J. R. DOBSON, M.R.C.V.S. Crown 8vo. with Illustrations price 7s. 6d.

Commerce, Navigation, and Mercantile Affairs.

The LAW of NATIONS Considered as Independent Political Communities. By TRAVERS TWISS, D.C.L. Regius Professor of Civil Law in the University of Oxford. 2 vols. 8vo. 30s. or separately, PART I. *Peace*, 12s. PART II. *War*, 18s.

A NAUTICAL DICTIONARY, defining the Technical Language relative to the Building and Equipment of Sailing Vessels and Steamers, &c. By ARTHUR YOUNG. Second Edition; with Plates and 150 Woodcuts. 8vo. 18s.

A DICTIONARY, Practical, Theoretical, and Historical, of Commerce and Commercial Navigation. By J. R. M'CULLOCH, Esq. 8vo. with Maps and Plans, 50s.

The STUDY of STEAM and the MARINE ENGINE, for Young Sea Officers. By S. M. SAXBY, R.N. Post 8vo. with 87 Diagrams, 5s. 6d.

A MANUAL for NAVAL CADETS. By J. M'NEIL BOYD, late Captain R.N. Third Edition; with 240 Woodcuts and 11 coloured Plates. Post 8vo. 12s. 6d.

Works of Utility and General Information.

MODERN COOKERY for PRIVATE FAMILIES, reduced to a System of Easy Practice in a Series of carefully-tested Receipts. By ELIZA ACTON. Newly revised and enlarged; with 8 Plates, Figures, and 150 Woodcuts. Fcp. 7s. 6d.

The HANDBOOK of DINING; or, Corpulency and Leanness scientifically considered. By BRILLAT-SAVARIN, Author of 'Physiologie du Goût.' Translated by L. F. SIMPSON. Revised Edition, with Additions. Fcp. 3s. 6d.

On FOOD and its DIGESTION; an Introduction to Dietetics. By W. BRINTON, M.D. Physician to St. Thomas's Hospital, &c. With 48 Woodcuts. Post 8vo. 12s.

WINE, the VINE, and the CELLAR. By THOMAS G. SHAW. Second Edition, revised and enlarged, with Frontispiece and 31 Illustrations on Wood. 8vo. 16s.

A PRACTICAL TREATISE on BREWING; with Formulæ for Public Brewers, and Instructions for Private Families. By W. BLACK. 8vo. 10s. 6d.

SHORT WHIST. By MAJOR A. Sixteenth Edition, revised, with an Essay on the Theory of the Modern Scientific Game by PROF. P. Fcp. 3s. 6d.

WHIST, WHAT TO LEAD. By CAM. Second Edition. 32mo. 1s.

HINTS on ETIQUETTE and the USAGES of SOCIETY; with a Glance at Bad Habits. Revised, with Additions, by a LADY of RANK. Fcp. price 2s. 6d.

The CABINET LAWYER; a Popular Digest of the Laws of England, Civil and Criminal. Twentieth Edition, extended by the Author; including the Acts of the Sessions 1863 and 1864. Fcp. 10s. 6d.

The PHILOSOPHY of HEALTH; or, an Exposition of the Physiological and Sanitary Conditions conducive to Human Longevity and Happiness. By SOUTHWOOD SMITH, M.D. Eleventh Edition, revised and enlarged: with 113 Woodcuts, 8vo. 15s.

HINTS to MOTHERS on the MANAGEMENT of their HEALTH during the Period of Pregnancy and in the Lying-in Room. By T. BULL, M.D. Fcp. 5s.

The Maternal Management of Children in Health and Disease. By the same Author. Fcp. 5s.

NOTES on HOSPITALS. By FLORENCE NIGHTINGALE. Third Edition, enlarged; with 13 Plans. Post 4to. 18s.

C. M. WILlich's POPULAR TABLES for ascertaining the Value of Lifehold, Leasehold, and Church Property, Renewal Fines, &c.; the Public Funds; Annual Average Price and Interest on Consols from 1731 to 1861; Chemical, Geographical, Astronomical, Trigonometrical Tables, &c. Post 8vo. 10s.

THOMSON'S TABLES of INTEREST, at Three, Four, Four and a Half, and Five per Cent. from One Pound to Ten Thousand and from 1 to 365 Days. 12mo. 3s. 6d.

MAUNDER'S TREASURY of KNOWLEDGE and LIBRARY of Reference: comprising an English Dictionary and Grammar, Universal Gazetteer, Classical Dictionary, Chronology, Law Dictionary, a Synopsis of the Peerage, useful Tables, &c. Fcp. 10s.

INDEX.

	PAGE		PAGE
ABBOTT on Sight and Touch	10	BUCKLE's History of Civilization	2
ACTON's Modern Cookery	27	BULL's Hints to Mothers	28
AIKIN's Select British Poets	25	—— Maternal Management of Children	28
——— Memoirs and Remains	4	BUNSEN's Analecta Ante-Nicæna	20
ALCOCK's Residence in Japan	23	——— Ancient Egypt	3
ALLIES on Formation of Christianity	19	——— Hippolytus and his Age	20
Alpine Guide (The)	22	——— Philosophy of Universal History	20
APJOHN's Manual of the Metalloids	12	BUNSEN on Apocrypha	20
ARAGO's Biographies of Scientific Men	5	BUNYAN's Pilgrim's Progress, illustrated by	
——— Popular Astronomy	10	BENNETT	16
——— Meteorological Essays	10	BURKE's Vicissitudes of Families	5
ARNOLD's Manual of English Literature	7	BURTON's Christian Church	3
ARNOTT's Elements of Physics	11	Cabinet Lawyer	28
Arundines Cami	26	CALVERT's Wife's Manual	21
Atherstone Priory	24	Campaigner at Home	9
ATKINSON's Papinian	5	CATS' and FARLIE's Moral Emblems	16
Autumn holidays of a Country Parson ..	8	Chorale Book for England	21
AYRE's Treasury of Bible Knowledge	19	COLENSO (Bishop) on Pentateuch and Book	
BABBAGE's Life of a Philosopher	4	of Joshua	19
BACON's Essays, by WHATELY	5	COLUMBUS's Voyages	23
——— Life and Letters, by SPEDDING	4	Commonplace Philosopher in Town and	
——— Works, by ELLIS, SPEDDING, and		Country	8
HEATH	6	CONINGTON's Handbook of Chemical Ana-	
BAIN on the Emotions and Will	10	lysis	14
——— on the Senses and Intellect	10	CONTANSEAU's Pocket French and English	
——— on the Study of Character	10	Dictionary	8
BAINES's Explorations in S. W. Africa	22	——— Practical ditto	8
BALL's Guide to the Central Alps	23	CONYBEARE and HOWSON's Life and Epistles	
——— Guide to the Western Alps	23	of St. Paul	18
BAYLDON's Rents and Tillages	18	COOK's Voyages	23
BLACK's Treatise on Brewing	28	COPLAND's Dictionary of Practical Medicine	
BLACKLEY and FRIEDLANDER's German and		——— Abridgment of ditto	15
English Dictionary	8	Cox's Tales of the Great Persian War	2
BLAINE's Rural Sports	26	——— Tales from Greek Mythology	24
BLIGHT's Week at the Land's End	23	——— Tales of the Gods and Heroes	24
BONNEY's Alps of Dauphiné	22	——— Tales of Thebes and Argos	25
BOURNE's Catechism of the Steam Engine ..	17	CRESY's Encyclopædia of Civil Engineering	
——— Handbook of Steam Engine	17	Critical Essays of a Country Parson	8
——— Treatise on the Steam Engine	17	CROWE's History of France	2
BOWDLER's Family SHAKESPEARE	26	D'AUBIGNE's History of the Reformation in	
BOYD's Manual for Naval Cadets	27	the time of CALVIN	2
BRAMLEY-MOORE's Six Sisters of the Valleys		Dead Shot (The), by MARKSMAN	26
BRANDE's Dictionary of Science, Literature,		DE LA RIVE's Treatise on Electricity	12
and Art	13	DELMARD's Village Life in Switzerland	22
BRAY's (C.) Education of the Feelings	10	DE LA PRYME's Life of Christ	20
——— Philosophy of Necessity	10	DE TOCQUEVILLE's Democracy in America ..	2
——— (Mrs.) British Empire	11	Diaries of a Lady of Quality	4
BRINTON on Food and Digestion	28	DOBSON on the Ox	27
BRISTOW's Glossary of Mineralogy	12	DOVE's Law of Storms	11
BRODIE's (Sir C. B.) Psychological Inquiries		DOYLE's Chronicle of England	2
——— Works	15	Ellice, a Tale	24
——— Autobiography		ELLCOTT's Broad and Narrow Way	19
BROWNE's Ice Caves of France and Switzer-		——— Commentary on Ephesians	19
land	22	——— Destiny of the Creature	19
——— Exposition 39 Articles	18	——— Lectures on Life of Christ	19
——— Pentateuch	18		

	PAGE		PAGE
ELLICOTT's Commentary on Galatians.....	19	Hunting Grounds of the Old World.....	22
----- Pastoral Epist.....	19	Hymns from <i>Lyra Germanica</i>	21
----- Philippians, &c.....	19		
----- Thessalonians.....	19		
Essays and Reviews.....	20	INGELOW's Poems.....	25
on Religion and Literature, edited			
by MANNING.....	20		
written in the Intervals of Business	9		
		JAMESON's Legends of the Saints and Mar-	
		tyrs.....	16
FAIRBAIRN's Application of Cast and		Legends of the Madonna.....	16
Wrought Iron to Building.....	17	Legends of the Monastic Orders	16
Information for Engineers.....	17	JAMESON and EASTLAKE's History of Our	
Treatise on Mills & Millwork	17	Lord.....	16
FFOULKES's Christendom's Divisions.....	20	JOHNS's Home Walks and Holiday Rambles	13
First Friendship.....	24	JOHNSON's Patentee's Manual.....	17
FITZ ROY's Weather Book.....	11	Practical Draughtsman.....	17
FOWLER's Collieries and Colliers.....	17	JOHNSTON's Gazetteer, or Geographical Dic-	
FRESHFIELD's Alpine Byways.....	23	tionary.....	11
Tour in the Grisons.....	23	JONES's Christianity and Common Sense....	10
Friends in Council.....	9		
FROUDE's History of England.....	1	KALISCH's Commentary on the Old Testa-	
		ment.....	7
		Hebrew Grammar.....	7
GARRATT's Marvels and Mysteries of		KENNEDY's Hymnologia Christiana.....	21
Instinct.....	13	KESTEVEN's Domestic Medicine.....	15
GEE's Sunday to Sunday.....	21	KIRBY and SPENCE's Entomology.....	13
Geological Magazine.....	12	KNIGHTON's Story of Elihu Jan.....	24
GILBERT and CHURCHILL's Dolomite Moun-		KÜBLER's Notes to <i>Lyra Germanica</i>	21
tains.....	23	KUENEN on Pentateuch and Joshua.....	19
GILLY's Shipwrecks of the Navy.....	23		
GOETHE's Second Faust, by Anster.....	25	Lady's Tour Round Monte Rosa.....	23
GOODEVE's Elements of Mechanism.....	16	LANDON's (L. E. L.) Poetical Works.....	26
GORLE's Questions on BROWNE's Exposition		Late Laurels.....	24
of the 39 Articles.....	18	LATHAM's English Dictionary.....	7
Graver Thoughts of a Country Parson....	8	LECKY's History of Rationalism.....	3
GRAY's Anatomy.....	15	Leisure Hours in Town.....	8
GREENE's Corals and Sea Jellies.....	12	LEWES's Biographical History of Philosophy	3
Sponges and Animalculæ.....	12	LEWIS on the Astronomy of the Ancients...	6
GROVE on Correlation of Physical Forces..	12	on the Credibility of Early Roman	
GWILT's Encyclopædia of Architecture....	16	History.....	6
		Dialogue on Government.....	6
Handbook of Angling, by EPHEMERA.....	26	on Egyptological Method.....	6
HARE on Election of Representatives.....	7	Essays on Administrations.....	6
HARTWIG's Sea and its Living Wonders....	12	Fables of BABRIUS.....	6
Tropical World.....	12	on Foreign Jurisdiction.....	6
HAWKER's Instructions to Young Sportsmen	26	on Irish Disturbances.....	6
HEATON's Notes on Rifle Shooting.....	26	on Observation and Reasoning in	
HELPS's Spanish Conquest in America.....	2	Politics.....	6
HERSCHEL's Essays from the Edinburgh		on Political Terms.....	6
and Quarterly Reviews.....	13	on the Romance Languages.....	6
Outlines of Astronomy.....	10	LIDDELL and SCOTT's Greek-English Lexicon	8
HEWITT on the Diseases of Women.....	14	Abridged ditto.....	8
HINCHLIFF's South American Sketches....	22	LINDLEY and MOORE's Treasury of Botany	13
Hints on Etiquette.....	28	LONGMAN's Lectures on the History of Eng-	
HODGSON's Time and Space.....	10	land.....	2
HOLLAND's Chapters on Mental Physiology	9	LOUDON's Encyclopædia of Agriculture....	18
Essays on Scientific Subjects.....	13	Cottage, Farm,	
Medical Notes and Reflections..	15	and Villa Architecture.....	18
HOLMES's System of Surgery.....	14	Gardening.....	18
HOOKER and WALKER-ARNOTT's British		Plants.....	13
Flora.....	13	Trees & Shrubs.....	13
HORNE's Introduction to the Scriptures....	19	LOWNDES's Engineer's Handbook.....	16
Compendium of ditto.....	19	Lyra Domestica.....	21
HOSKYNs's Talpa.....	17	Eucharistica.....	16
How we Spent the Summer.....	22	Germanica.....	21
HOWITT's Australian Discovery.....	22	Messianica.....	21
History of the Supernatural.....	9	Mystica.....	21
Rural Life of England.....	23	Sacra.....	21
Visits to Remarkable Places.....	23		
HOWSON's Hulsean Lectures on St. Paul....	18	MACAULAY's (Lord) Essays.....	3
HUGHES's (W.) Geography of British His-		History of England.....	1
tory.....	11	Lays of Ancient Rome.....	25
Manual of Geography.....	11	Miscellaneous Writings.....	9
HULLAH's History of Modern Music.....	4	Speeches.....	7
Transition Musical Lectures....	4	Speeches on Parliamentary	
HUMPHREYS's Sentiments of Shakspeare....	16	Reform.....	7
		MACDOUGALL's Theory of War.....	17
		MARSHMAN's Life of Havelock.....	1

	PAGE		PAGE
McCulloch's Dictionary of Commerce	27	Packer's Guide to the Pyrenees	23
——— Geographical Dictionary	11	Paget's Lectures on Surgical Pathology ..	15
Macfie's Vancouver Island	22	——— Camp and Cantonment	22
Maguire's Life of Father Mathew	4	Pereira's Elements of Materia Medica ..	15
——— Rome and its Rulers	4	——— Manual of Materia Medica	15
Maling's Indoor Gardener	13	Perkins's Tuscan Sculptors	16
Massey's History of England	1	Phillips's Guide to Geology	12
Massingberd's History of the Reformation ..	3	——— Introduction to Mineralogy	12
Mauder's Biographical Treasury	5	Piesse's Art of Perfumery	17
——— Geographical Treasury	11	——— Chemical, Natural, and Physical	
——— Historical Treasury	3	Magic	17
——— Scientific and Literary Treasury ..	13	——— Laboratory of Chemical Wonders ..	17
——— Treasury of Knowledge	28	Playtime with the Poets	26
——— Treasury of Natural History ..	13	Practical Mechanic's Journal	17
Maury's Physical Geography	11	Prescott's Scripture Difficulties	19
May's Constitutional History of England ..	1	Proctor's Saturn	10
Melville's Digby Grand	24	Pycroft's Course of English Reading	7
——— General Bounce	24	——— Cricket Field	26
——— Gladiators	24	——— Cricket Tutor	26
——— Good for Nothing	24	——— Cricketana	26
——— Holmby House	24		
——— Interpreter	24	Reade's Poetical Works	25
——— Kate Coventry	24	Recreations of a Country Parson, SECOND	
——— Queen's Maries	24	SERIES	8
Mendelssohn's Letters	5	Reilley's Map of Mont Blanc	22
Menzies' Windsor Great Park	18	Riddle's Diamond Latin-English Dictionary ..	8
——— on Sewage	18	——— First Sundays at Church	21
Merivale's (H.) Colonisation and Colonies ..	11	Rivers's Rose Amateur's Guide	13
——— Historical Studies	2	Rogers's Correspondence of Greyson	9
——— (C.) Fall of the Roman Republic ..	2	——— Eclipse of Faith	9
——— Romans under the Empire	2	——— Defence of ditto	9
——— on Conversion of Roman		——— Essays from the <i>Edinburgh Review</i> ..	9
Empire	3	——— Fulleriana	9
Miles on Horse's Foot	26	Rogers's Thesaurus of English Words and	
——— On Horses' Teeth	26	Phrases	7
——— on Horse Shoeing	26	Ronalds's Fly-Fisher's Entomology	26
——— on Stables	26	Rowton's Debater	7
Mill on Liberty	6	Russell on Government and Constitution ..	1
——— on Representative Government	6		
——— on Utilitarianism	6	Saxby's Study of Steam	27
Mill's Dissertations and Discussions	6	——— Weather System	11
——— Political Economy	6	Scott's Handbook of Volumetrical Analysis ..	14
——— System of Logic	6	Scrope on Volcanos	12
——— Hamilton's Philosophy	6	Senior's Biographical Sketches	5
Miller's Elements of Chemistry	14	——— Historical and Philosophical	
Monseil's Spiritual Songs	21	Essays	3
——— Beatitudes	21	——— Essays on Fiction	24
Montagu's Experiments in Church and		Sewell's Amy Herbert	24
State	19	——— Ancient History	2
Montgomery on the Signs and Symptoms		——— Cleve Hall	24
of Pregnancy	14	——— Earl's Daughter	24
Moore's Irish Melodies	25	——— Experience of Life	24
——— Lalla Rookh	25	——— Gertrude	24
——— Memoirs, Journal, and Correspon-		——— Glimpse of the World	24
dence	5	——— History of the Early Church	3
——— Poetical Works	25	——— Ivors	24
Morell's Elements of Psychology	9	——— Katharine Ashton	24
——— Mental Philosophy	9	——— Laneton Parsonage	24
Morning Clouds	20	——— Margaret Percival	24
Morton's Prince Consort's Farms	17	——— Night Lessons from Scripture	20
Mosheim's Ecclesiastical History	20	——— Passing Thoughts on Religion	20
Müller's (Max) Lectures on the Science of		——— Preparation for Communion	20
Language	7	——— Readings for Confirmation	20
——— (K. O.) Literature of Ancient		——— Readings for Lent	20
Greece	2	——— Self-Examination before Confir-	
Murchison on Continued Fevers	15	mation	20
Mure's Language and Literature of Greece ..	2	——— Stories and Tales	24
		——— Thoughts for the Holy Week	20
New Testament, illustrated with Wood En-		——— Ursula	24
gravings from the Old Masters	15	Shaw's Work on Wine	28
Newman's History of his Religious Opinions ..	4	Shedden's Elements of Logic	7
Nightingale's Notes on Hospitals	28	Short Whist	28
		Short's Church History	3
Odling's Course of Practical Chemistry	14	Sieveking's (AMELIA) Life, by Winkworth ..	4
——— Manual of Chemistry	14	Simpson's Handbook of Dining	27
Ormsby's Rambles in Algeria and Tunis	23	Smith's (SOUTHWOOD) Philosophy of Health ..	18
Owen's Comparative Anatomy and Physio-		——— (J.) Voyage and Shipwreck of St.	
logy of Vertebrate Animals	12	Paul	18
Oxenham on Atonement	21		

	PAGE		PAGE
SMITH's (G.) Wesleyan Methodism.....	3	VAUGHAN's (R.) Revolutions in English History.....	1
— (SYDNEY) Memoir and Letters.....	5	— (R. A.) Hours with the Mystics.....	10
— Miscellaneous Works.....	9	VILLARI's Savonarola.....	4
— Sketches of Moral Philosophy.....	9		
— Wit and Wisdom.....	9	WATSON's Principles and Practice of Physic.....	14
SMITH on Cavalry Drill and Manœuvres.....	27	WATTS's Dictionary of Chemistry.....	14
SOUTHEY's (Doctor).....	7	WEBB's Celestial Objects for Common Telescopes.....	11
— Poetical Works.....	25	WEBSTER & WILKINSON's Greek Testament.....	19
SPOHR's Autobiography.....	4	WELD's Last Winter in Rome.....	23
Spring and Autumn.....	20	WELLINGTON's Life, by BRIALMONT and GLEIG.....	4
STANLEY's History of British Birds.....	13	— by GLEIG.....	4
STEBBING's Analysis of MILL's Logic.....	7	WEST on the Diseases of Infancy and Childhood.....	14
STEPHENSON's (R.) Life by JEAFFRESON and POLE.....	4	WHATELY's English Synonymes.....	5
STEPHEN's Essays in Ecclesiastical Biography.....	5	— Logic.....	5
— Lectures on the History of France.....	2	— Remains.....	6
STIRLING's Secret of Hegel.....	10	— Rhetoric.....	5
STONEHENGE on the Dog.....	25	— Sermons.....	22
— on the Greyhound.....	25	— Paley's Moral Philosophy.....	22
		WHEWELL's History of the Inductive Sciences.....	3
TASSO's Jerusalem, by JAMES.....	25	Whist, what to lead, by CAM.....	28
TAYLOR's (Jeremy) Works, edited by EDEN.....	20	WHITE and RIDDLE's Latin-English Dictionary.....	8
TENNENT's Ceylon.....	12	WILBERFORCE (W.) Recollections of, by HARFORD.....	5
— Natural History of Ceylon.....	12	WILLIAMS's Superstitions of Witchcraft.....	9
THIRLWALL's History of Greece.....	2	WILLICH's Popular Tables.....	28
THOMSON's (Archbishop) Laws of Thought.....	7	WILSON's Bryologia Britannica.....	13
— (J.) Tables of Interest.....	28	WOOD's Homes without Hands.....	12
— Conspectus, by BIRKETT.....	15	WOODWARD's Historical and Chronological Encyclopædia.....	3
TODD's Cyclopædia of Anatomy and Physiology.....	15		
— and BOWMAN's Anatomy and Physiology of Man.....	15	YONGE's English-Greek Lexicon.....	8
TROLLOPE's Barchester Towers.....	25	— Abridged ditto.....	8
— Warden.....	25	YOUNG's Nautical Dictionary.....	27
Twiss's Law of Nations.....	27	YOUATT on the Dog.....	27
TYNDALL's Lectures on Heat.....	11	— on the Horse.....	27
URR's Dictionary of Arts, Manufactures, and Mines.....	16		
VANDER HOEVEN's Handbook of Zoology..	12		





