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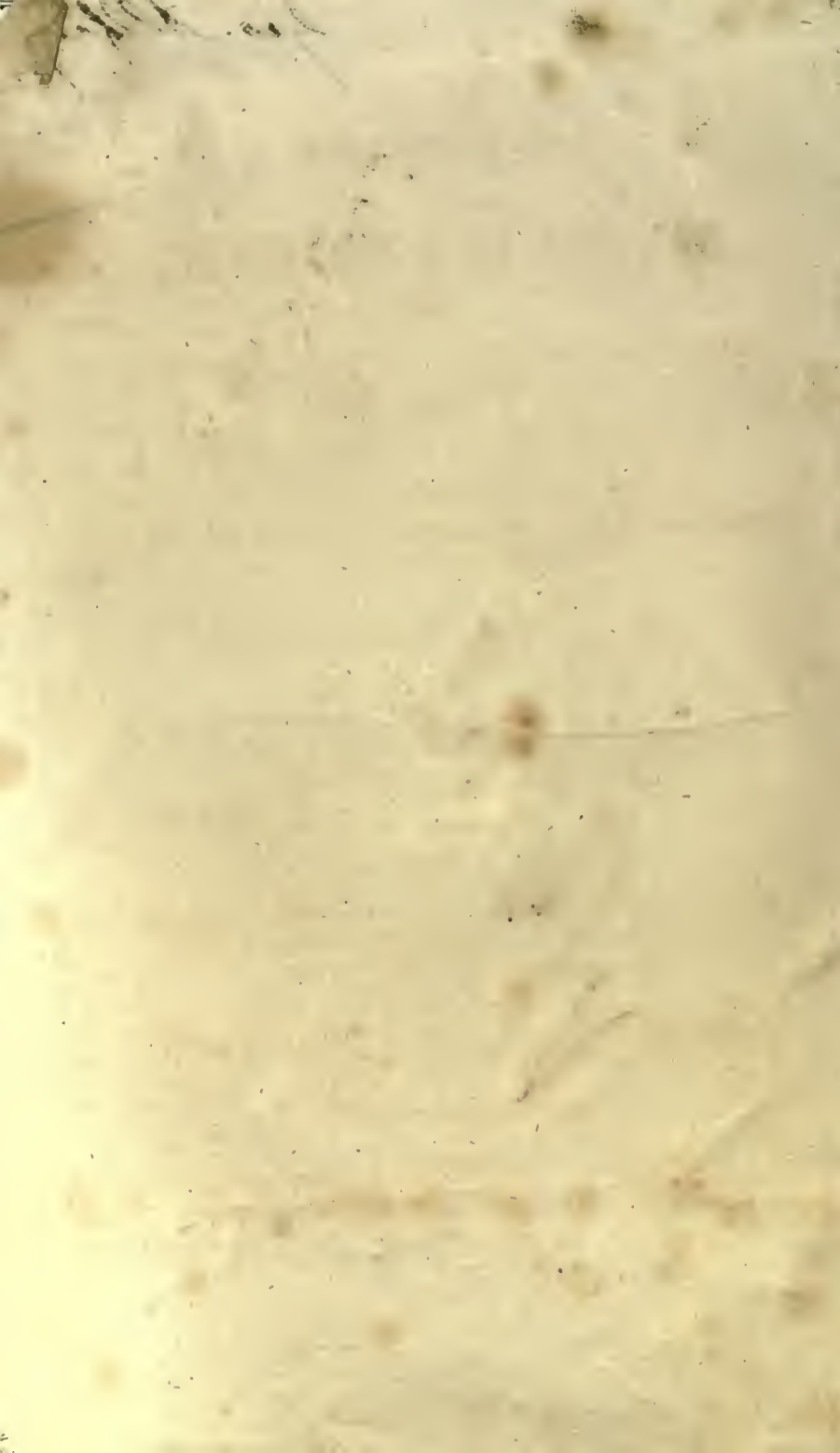
C. K. OGDEN

1815

251

Geo. Alfrey

ROOM



THE  
DICTIONARY  
OF  
**MERCHANDIZE,**

AND  
*Nomenclature in ALL European Languages,*  
FOR THE  
USE OF COUNTING-HOUSES, &c.

CONTAINING  
THE HISTORY, PLACES OF GROWTH, CULTURE, USE, AND  
MARKS OF EXCELLENCY,

OF  
SUCH NATURAL PRODUCTIONS

AS FORM ARTICLES OF COMMERCE.

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BY C. H. KAUFFMAN.

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FOURTH EDITION,

*Considerably enlarged and improved by an Alphabetical Arrangement  
of all European Foreign Names of Merchandize, with their  
Translation into the English Language,*

BY THE  
EDITOR OF THE COMMERCIAL DICTIONARY, AND FOREIGN  
PRICES CURRENT OF EUROPE.

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LONDON:

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1815.

*(Entered at Stationers' Hall.)*

## P R E F A C E.

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*THE object of this Dictionary is, to give an account of the origin, places of growth, culture, use, and the marks by which the excellency may be ascertained, of those principal productions of nature which form materials for commerce; some of these in their original raw state, as spices, seeds, corn, woods, fruit, &c. others after having received a new form from human art, as metals, oils, spirits, ashes, salts, flax, &c. But such articles of trade, as have undergone a still further change, to make them fit for use, and which are comprehended under the general denomination of manufactures, as cloths, callicoes, muslins, hard-ware, earthen-ware, glass, &c. are excluded from the present work, as being objects not so universally interesting, and requiring by themselves a Dictionary of much larger volume than this.*

*The extent of this undertaking is such; that no man has opportunity or ability, to get thoroughly acquainted with every material article of traffic, so as to describe it from his own experience. But the author having been in business for a number of years, and, during his travels in most parts of Europe, made it his study to enquire into the nature of merchandize, flatters himself to have given from his own observations, a more true and full account of many articles, than was ever published before.*

*This publication, the author presumes, will be one of the most useful and necessary works of a counting-house library; and, though principally written for the merchant, he conceives, it will be of service to every man of business or curiosity.*

*Every man is in some degree a merchant, in so far, as he has something to buy or to sell; and it may be interesting for him to acquire a knowledge of the nature of his commodity.*

*To render this book the more useful for the foreign merchant, the names in the twelve most current languages have been prefixed to every article of importance; viz.*

The letter F. stands for French.

G. . . . German.

D. . . . Dutch.

I. . . . Italian.

S. . . . Spanish.

P. . . . Portugueze.

DA. . . . Danish.

Sw. . . . Swedish.

POL. . . . Polish.

R. . . . Russian.

L. . . . Latin.

*To this Fourth Edition is added the Foreign names of all articles of commerce, contained in this work, with their translation into English, and by a reference to the English name of each article, the growth, culture, use, and marks of quality will be found.*

London, January 1, 1815.



# THE NOMENCLATURE,

OF

*Merchandize contained in this Dictionary, in Twelve  
different Languages.*

## FRENCH.

<i>French.</i>	<i>English.</i>	<i>French.</i>	<i>English.</i>
Agaric .....	Agaric	Barille .....	Barilla
Agate .....	Agate	Biere.....	Beer
Ais .....	Boards	Béril .....	Beryl
Alabâtre .....	Alabaster	Bezoard .....	Bezoar
Aloe .....	Aloes	Bismut .....	Bismuth
Alun .....	Alum	Bidauct .....	Bistre
Ambre jaune ..	Amber	Bistre .....	Bistre
Ambregris .....	Ambergrease	Bitume de Judée	BitumenJudicum
Amadon .....	Amadon	Bol .....	Bole
Amethyste .....	Amethyst	Bol d'Armenie...	Bole
Amiante .....	Amianthus	Bol fin du Levant	Bole
Amandes .....	Almonds	Borax .....	Borax
Amidon .....	Starch	Bois de Buis.....	Box-wood
Amomes .....	Amomi-seed	Brandevin .....	Brandy
Anis .....	Aniseed	Bois de Bresil ...	Brasil-wood
Antimoine .....	Antimony	Bresillot .....	Brasiletto-wood
Anchois .....	Anchovies	Blé Sarrasan	} Buckwheat
Arac .....	Arrack	Blé Noir .....	
Arsenic .....	Arsenic	Buffle .....	Buff Skins
Assa-fetida .....	Assa-fetida	Beurre .....	Butter
Asphalte .....	Biticum Juadicum	Bleds .....	Corn
Arquifou .....	Alquifou	Bouges .....	Cowries
Argent .....	Silver	Bois d'Ebéne ...	Ebony
Ardoise.....	Slate	Bois jaune .....	Fustic
Avoine .....	Oats	Bois de Japan ...	Japan-wood
Avelones .....	Small-nuts	Bled de Turquie	Indian Corn
Azur d'Holland	Smalts	Baies de Genève	Juniper berries
Avelande .....	Valonea	Bois de Gáic ...	Lignum Vitæ
		Bois sait .....	Ditto
Bois d'Aloés.....	Aloe-wood	Bois de Campeche	Logwood
Bichet .....	Annatto	Bois d'Acajou ...	Mahogany
Baume .....	Balsam	Bois deMahagony	Ditto
Bambou .....	} Bamboe	Bois de Nephretic	Nephritic wood
Bamboches ...			
Bamboucs ...			
		Bleu de Prusse...	Prussian blue
		Bois de Quassie...	Quassia

<i>French.</i>	<i>English.</i>	<i>French.</i>	<i>English.</i>
Bois de Rose.....	Rose-wood	Crema de Tartar	Cream of Tartar
Blanc de Baleine	Spermaceti	Cubeb	Cubeb
Couperose bleue	Blue vitriol	Cumin .....	Cumin
Cuir de Buenos		Colle forte.....	Glue
Ayres .....	Buenos Ayreshides	Cheveux .....	Human hair
Calamine .....	Calamine	Chanvre .....	Hemp
Camphre .....	Camphire	Cuir.....	Hides
Cantharides .....	Cantharides	Corne .....	Horns
Capres .....	Capers	Cachow.....	Japan earth
Carvi.....	Caraway seed	Caoutchou .....	Indian rubber
Cumin des pres...	Ditto	Colle de Poisson..	Isinglass
Cardamomes.....	Cardamom	Cuir .....	Leather
Carmin .....	Carmine	Citrons .....	Lemons
Cassia sobutive		Chêne .....	Oak
Casse en batons		Cendres de Perle	Pearl ashes
ou en canons		Charbons de terre	Pit-coal
Canefice .....	Cassia Fistula	Chiffon Drapeaux	Rags
Cassefistule ...		Cartame .....	Safflower
Cassia tignea...		Curcuma .....	Turmeric
Casse en bois...	Cassia Lignea	Cendres bleues ...	Verditer
Cannelle de la		Cire .....	Wax
Chine .....		Ceruse .....	White lead
Castoreum .....	Castoreum	Chaux de plomb	Ditto
Caviar .....	Caviare	Dattes .....	Dates
Cavial .....	Ditto	Diamant .....	Diamond
Cedre .....	Cedar-wood	Dictame blanc...	Dittany
Chataignes .....	Chesnuts	Duvet .....	Down
Chocolat .....	Chocolate	Douves a Pipe ...	Staves, <i>pipe-staves</i>
Cinnabre .....	Cinnabar	D'Outremer.....	Ultramarine
Cannelle .....	Cinnamon	Eauforte .....	Aquafortis
Civette .....	Civet	Eau regale .....	Aqua regia
Cloux de Girofle	Cloves	Eau de vie .....	Brandy
Cobalt .....	Cobalt	Escarboucle .....	Carbuncle
Cochenille .....	Cochineal	Esquine .....	China root
Cacao .....	Cocoa	Ecorce de Winter	Cortex Winteranus
Cocos .....	Cocoa-nuts	Ederdon .....	Eider-down
Café .....	Coffée	Emeraude.....	Emerald
Colocynth.....	Coloquintes	Emeril .....	Emery
Colophony .....	Colophone	Eméri .....	Ditto
Cuivre .....	Copper	Essences .....	Essences
Couperose.....	Copperas	Encens .....	Frankincense
Corail .....	Coral	Encens fin ou	
Coriandre .....	Coriander	mâle .....	Ditto.
Cornaline .....	Cornelian	Espars .....	Spars
Cotón, en laine..	Cotton-wool	Eponge .....	Spunge
Coris .....	Cowries	Etain.....	Tin
Cauris .....	Ditto		

<i>French.</i>	<i>English.</i>
Ecaïlle de tortue	Tortoise-shell
Flours de Casse...	Cassia buds
Fromage .....	Cheese
Fraxinelle .....	Dittany
Fenouil .....	Fennel seed
Fenu-grec .....	Fenugreek
Figues .....	Figs
Farine .....	Flour
Fourure .....	Furs
Fer .....	Iron
Fleur de musade	Mace
Fanons de baleine	Whalebone
Froment .....	Wheat
Graine de tréfle	Clover seed
Girofle .....	Cloves
Galanga .....	Galangal
Galles .....	Galls
Gomme gutte ..	Gamboge
Genèvre .....	Geneva
Gentiane .....	Gentian
Gingembre .....	Ginger
Ginseng .....	Ginseng
Graines de para-	
dis .....	Grains of Paradise
Grenats .....	Grenates, or garnets
Granit .....	Granite
Gomme .....	Gum
Gomme élastique	India rubber
Graines d'écarlate	Kermes
Gommelacque ..	Lac; Gum Lac
Gáiac .....	Lignum Vitæ
Graine de lin ..	Linseed
Graine de lucerne	Lucerne-seed
Garance .....	Madder
Graine de mou-	
tarde .....	Mustard-seed
Graine de navette	Rape-seed
Gueldive .....	Rum
Goudron .....	Tar
Gaude .....	Weld; <i>Dyer's Weed</i>
Graine d'avignon	Yellow berries
Huile de ricin ..	Castor Oil
Hellebore .....	Hellebore
Harengs .....	Herrings
Houblon .....	Hops

<i>French.</i>	<i>English.</i>
Huile de lin .....	Linseed oil
Huile .....	Oil
Huitres .....	Oysters
Huile de palme	Palm Oil
Huile de Senegal	Ditto
Huile de navette	Rape Oil
Huile de poisson	Train Oil
Herbe à jaunir,...	Weld; <i>Dyer's Weed</i>
Jalap.....	Jalap
Jaspe .....	Jasper
Indigo .....	Indigo
Ipecacuanha.....	Ipecacuanha
Ivoire .....	Ivory
Iris de Florence	Orris, or <i>Ireos root</i>
Jonc .....	Rushes
Kermes de Pro-	
vence .....	Kermes
L'Orcanette.....	Alkanet root
L'Orcanète .....	Anchusa, or <i>bugloss</i>
Liege .....	Cork
Lin .....	Flax
Lichen ou mousse	
d'Island .....	Iceland-moss
Limons.....	Lemons
Lin .....	Linseed
Litharge .....	Litharge
Laine .....	Wool
Mine de plomb	
noir .....	Black lead
Mouches d'Es-	
pagne .....	Cantharides
Morue .....	Codfish
Maniguette .....	Grains of Paradise
Maniguette .....	Ditto
Malaguette .....	Ditto
Miel .....	Honey
Macis .....	Mace
Manne .....	Manna
Marbre.....	Marble
Mastic .....	Mastich
Mil .....	Millet
Millet .....	Ditto
Moire .....	Mohair
Melasses .....	Molasses

<i>French.</i>	<i>English.</i>	<i>French.</i>	<i>English.</i>
Muse .....	Musk	Piment .....	Pimento
Myrrhe .....	Myrrh	Pistaches .....	Pistacia-nuts
Minium .....	Red lead	Poix .....	Pitch
Nard Indienne...	Spikenard	Prunes se ches...	Plumbs
Noix d'Acajou...	Acajou-nuts	Porphyre .....	Porphry
Noir d'ivoire ...	Ivory-black	Potasse .....	Pot ashes
Noir de fumée ...	Lamp-black	Pommes de terre	Potatoes
Nacre .....	Mother of pearl	Prunes de brig- noles .....	Prunes
Noix de muscade	Nutmegs	Pierre-ponce ...	Pumice-stone
Noix vomiques...	Nux Vomica	Plumes à écrire	Quills
Noisettes .....	Small-nuts; <i>hazel-</i> <i>nuts</i>	Peaux .....	Skins
Noir d'Allemagne	Frankfort-black	Pastel .....	Wood
Oignon de fleurs	Bulbs, flower roots	Quede .....	Ditto
Oliban .....	Frankincense	Racine d'Angeli- que .....	Angelica root
Or .....	Gold	Rocou .....	Annatto
Olives .....	Olives	Rassade.....	} Beads; <i>glass beads</i>
Oignons .....	Onions	Rocaille .....	
Onice .....	Onyx	Racine de Colom- bo .....	Columbo-root
Onix .....	Ditto	Raisins de Co- rinthe .....	Currants
Oranges .....	Oranges	Reglisse .....	Liquorice; <i>Spanish</i> <i>juice</i>
Orseille .....	Orchella	Rhubarbe .....	Rhubarb
Orpiment.....	Orpiment	Riz .....	Rice
Orpin .....	Ditto	Rubis .....	Ruby
Oignon marin ...	Squill	Rum .....	Rum
Ombre .....	Umber	Roure .....	Sumac
Orge .....	Barley	Roux .....	Ditto
Petit povre .....	Agnus-castus seed	Safran .....	Saffron
Plomb de Mine	Black lead	Safran batard ...	Safflower
Potelot .....	Ditto	Saffranon .....	Ditto
Planches .....	Boards	Sagou .....	Sago
Peux de buffles	Buff-skins	Salpêtre .....	Saltpetre
Pierre calami- naire.....	Calamine	Saphir .....	Sapphire
Plumes .....	Feathers	Salsepareille .....	Sarsaparilla
Poisson .....	Fish	Sassafras .....	Sassafras
Poil de chèvre ...	Goat's-hair	Sandal .....	Sauanders
Poil .....	Hair of animals	Santal .....	Ditto
Peaux .....	Hides	Scamonée.....	Scammony
Plomb .....	Lead	Sené .....	Sena
Perleasse .....	Pearl ashes	Sené en feuilles...	Ditto
Perles .....	Pearls	Sel.....	Salt
Poivre .....	Pepper		
Petrole .....	Petrole; <i>Oil of Pe-</i> <i>ter</i>		

<i>French.</i>	<i>English.</i>
Sel Ammoniac ...	Sal ammoniac
Seigle .....	Rye
Savon .....	Soap
Soie .....	Silk
Scille.....	Squill
Styraz .....	Storax
Storax .....	Ditto
Suif .....	Tallow
Sucre .....	Sugar
Sucre candy.....	Sugar candy
Sumac .....	Suinac
Sucre de Saturne	Saccharum Saturni
Succin .....	Amber.
Semence d'ammi	Ammeos-seed
Souede .....	Barilla
Soufre .....	Brimstone
Soies .....	Bristles
Squine .....	China-root
Sarde .....	Cornelian
Simarouba .....	Cortex Simaroubæ
Sang de dragon	Dragon's blood
Sel d'Epsom.....	Epsom salt
Suc d'Acacia ...	Acacia
Syrop de sucre	Molasses .
Sementine .....	Worm-seed
Tartre .....	Argol, or Tartar
Tin brut .....	Oak bark

<i>French.</i>	<i>English.</i>
Terre a foulon ...	Fuller's earth
Terre du Japan	Japan earth
Toile.....	Lineus
Tamarins .....	Tamarinds
Thé .....	Tea
Tayes .....	Tick, or ticking
Tabac .....	Tobacco
Tripoli .....	Tripoli
Trusses.....	Truffles
Truffles.....	Ditto
Terre merite.....	Turmerick
Térébenthine ...	Turpentine
Vanille .....	Vanilla.
Verd-de-gris.....	Verdigrise
Vermillon .....	Vermillion
Vinaigre .....	Vinegar
Vedasse.....	Weed ashes
Vin .....	Wine.
Vouede .....	Woad
Verroterie .....	Beads; <i>glass beads</i>
Vitriol bleu .....	Blue-vitriol
Vitriol de chypre	Ditto
Verroterie .....	Bugles
Vesin hedre .....	Gum heder
Vermillon.....	Kermes
Vif argent.....	Quicksilver

GERMAN.

<i>German.</i>	<i>English.</i>
Achat .....	Agate
Akaju-nüssee' ...	Acajou-nuts
Alabaster .....	Alabaster
Aloe .....	Aloe
Aloe-holtz .....	Aloe-wood
Alaun .....	Allum
Agtsteen .....	Amber
Ambra .....	Ambergrease
Amethyst .....	Amethyst
Ammey .....	Ammeos-seed
Amny samen ...	Ditto
Amomchen .....	Amomi-seed
Anchojen .....	Anchovies
Angelica wurzel	Angelica root

<i>German.</i>	<i>English.</i>
Anis .....	Aniseed
Anis saamen.....	Ditto
Antimonium ...	Antimony
Armenischer ...	Armenian bole
Arrack .....	Arrack, or rack
Arsenic.....	Arsenic
Amerikanische gewürzrinde...	Cortex winteranus
Austern .....	Oysters
Amerikandische	Snake root
Amidam .....	Starch
Ackerdoppen ...	Valonea
Amerikanische brechwurzel...	Ipecacuanha

<i>German.</i>	<i>English.</i>	<i>German.</i>	<i>English.</i>
Balsam .....	Balsam	Citronen .....	Lemons
Bambus .....	Bamboe	China-rinde .....	Peruvian bark
Bleyglantz .....	Alquifou	Datteln .....	Dates
Bernstein .....	Amber	Dielen .....	Deals
Bolus .....	Armenian bole	Diamant .....	Diamond
Blauer bolus.....	Armenian stone	Duen .....	Down
Bark eich.enrinde loth .....	Bark-oak	Drachenblut ...	Dragon's blood
Bier .....	Beer	Des .....	Horns
Beryll .....	Beryl	Engel-wurz .. ...	Angelica root
Bezoar .....	Bezoar	Egyptischer .....	Acacia
Bister .....	Bistre	Ebenholz .....	Ebony
Blauer vitriol ..	Blue vitriol	Eiderdunen .....	Eider-down
Bretern .....	Boards	Epsom salz .....	Epsom salts
Bissen .....	Bole	Essenzen .....	Essences
Buxbaum-holz...	Box wood	Enzian .....	Gentian
Branntewein ..	Brandy	Eisen .....	Iron
Brasilien-holz ..	Brasil-wood	Elfenbein .....	Ivory
Borsten .....	Bristles	Elfelbein schwarz	Ivory-black
Buchweizen.....	Buck-wheat	Erbsen .....	Peas
Buenos Ayres häute .....	BuenosAyreshides	Essig .....	Vinegar
Büffelhäute .....	Buff skins	Eisenvitriol .....	Copperas
Blumenturebln...	Bulbs, flower roots	Eiche .....	Oak
Butter .....	Butter	Fetthon .....	Bole
Bibergeil .....	Castoreum	Fenchel samen ..	Fennel-seed
Bakalau .....	Cod fish	Feigen .....	Figs
Baumwolle .....	Cotton wool	Fische.....	Fish
Bettfedern .....	Feathers; <i>bedfea-</i> <i>thers</i>	Flachs .....	Flax
Blei .....	Lead	Frankfurter Sch- wärze .....	Frankfort black
Blauholz .....	Logwood	Færberröthe ..	Madder
Bisam .....	Musk	Fisch thran .....	Train oil
Blutholz .....	Nicaragua-wood	Fischbein .....	Whalebone
Berliner blau ..	Prussian blue	Federn .....	Feathers, <i>bedfea-</i> <i>thers</i>
Brimstein .....	Pumice-stone	Felle.....	Skins
Bleyzucker .....	Saccharum saturni, or <i>sugar of lead</i>	Gerste .....	Barley
Bade-schwamm	Spunge	Glasperlen .....	Beads; <i>glass beads</i>
Bugensug .....	Tick, or ticking	Glaskorallen.....	Ditto
Bergblau .....	Verditer	Galmey.....	Calamine
Bley weiss.....	White lead	Gewörznelken ..	Cloves
Cassia lignea.....	Cassia Lignea	Geigenharz .....	Colophony
Cederholz .....	Cedar-wood	Getreide .....	Corn
China-wurzel ..	China root	Gelbholz .....	Fustick
Cochenille .....	Cochineal	Galgant .....	Galangal
Columbo-wurzel	Columbo-root		

<i>German.</i>	<i>English.</i>
Galläpfel .....	Galls
Gummigut .....	Gamboge
Genever .....	Geneva
Gentian .....	Gentian
Ginseng .....	Ginseng
Gold .....	Gold
Granaten .....	Granates
Granit .....	Granite
Gummi.....	Gum
Gummi elasticum	Indian rubber
Gummilake .....	Lac; <i>gum lac</i>
Glette .....	Litharge
Guesholtz.....	Nephritic-wood
Getroeknete .....	Plumbs
Giftwurzel .....	Snake root
Grünspan .....	Verdigrise
Gelb Beeren.....	Yellow-berries
Hütten-rauch ...	Arsenic
Haare .....	Hair; <i>human hair</i>
Haare von thieren	Hair of animals
Hanf.....	Hemp
Heringe .....	Herrings
Häute .....	Hides
Honig .....	Honey
Hopfen .....	Hops
Hausenblase.....	Isinglass
Hirse.....	Millet
Haber .....	Oats
Hafer .....	Ditto
Haselnusse .....	Hazel-nuts
Heidekorn .....	Buck-wheat
Indianischer rohr	Bamboe
Judenpech-bi- } tumen .....	Juadicum, or Jew's pitch
Ingwer .....	Ginger
Ingber .....	Ditto
Jalapwurzel.....	Jalap
Japanische .....	Japan earth
Japanholtz .....	Japan wood
Jaspis .....	Jasper
Islandisches moos	Iceland Mos
Indigo .....	Indigo
Jamaicapfeffer ...	Pimento
Königs wasser ...	Aqua regia
Kupfer vitriol ...	Blue vitriol

<i>German.</i>	<i>English.</i>
Kappern .....	Capers
Kuemmel .....	Caraway-seed
Karfunckle-stein	Carbuncle
Kardamöm lien	Cardamom
Karmin.....	Carmine
Kassiablüth .....	Cassia-buds
Kassiablumen ...	Ditto
Kassia .....	Cassia fistulæ
Kassienrinde.....	Cassia lignea
Kaviar .....	Caviare
Kaese .....	Cheese
Kastanien.....	Chesnuts
Kanehl .....	Cinnamon
Kleesaat .....	Clover-seed
Kobalt .....	Cobalt
Kakao .....	Cocoa
Kokos-nüss .....	Coco-nuts
Kobliau.....	Cod-fish
Kaffè .....	Coffèe
Koloquinter .....	Colocynth
Kupfer .....	Copper
Kupferwasser ...	Copperas
Korallen .....	Coral
Koriander.....	Coriander
Kork .....	Cork
Korn .....	Corn
Karneol .....	Cornelian
Kauris .....	Cowries
Kubeben .....	Cubebs
Kumin .....	Cummin
Korinthen.....	Currants
Kupferdruker schwärze .....	Frankfort-black
Kraftwurzel .....	Ginseng
Katechu .....	Japan earth
Kienruss .....	Lamp-black
Krapp .....	Madder
Kartoffelen .....	Potatoes
Kübsen.....	Rape-seed
Kandizucker ...	Sugar candy
Kurkuma .....	Turmeric
Keusch-lam-sa- men .....	Agnus-castus-seed
Krøehenaugen ...	Nux vomica
Lerchenschwamm	Agaric
Langer kummel	Cummin
Leim .....	Glue

<i>German.</i>	<i>English.</i>	<i>German.</i>	<i>English.</i>
Lungenmoss ...	Langwort	Perlasche .....	Pearl ashes
Leder .....	Leather	Perlen .....	Pearls
Limoen .....	Lemons	Pfeffer .....	Pepper
Linnen .....	Linens	Pimento .....	Pimento
Leinsaat .....	Linseed	Pistazien .....	Pistacia-nuts
Leinol .....	Linseed oil	Pistaschen .....	Ditto
Luzerne-saamen	Lucerne-seed	Pech .....	Pitch
Lumpend vodden	Rags	Perphyr .....	Porphyry
Mäusse-gift ...	Arsenic	Pottasche .....	Potashes
Mandeln .....	Almonds	Prunellen .....	Prunes
Mehl.....	Flour	Posen .....	Quills
Menschenhaar ...	Hair, <i>human hair</i>	Pottloth .....	Black lead
Mays .....	Indian corn	Pipenstabs .....	Staves; <i>pipe-staves</i>
Muskatblüthe ...	Mace	Quassienholz ...	Quassia
Mahoganyholz...	Mahogany	Quecksilber .....	Quicksilver
Manna .....	Manna	Quercitron .....	Quercitron bark
Marmor .....	Marble	Rothe ochesen-	
Mastix .....	Mastich	zunge .....	Anchusa
Matten .....	Matts	Rothstein .....	Armenian bole
Mohe .....	Mohair	Rötelstein .....	Ditto
Mooe .....	Ditto	Rack .....	Arrack, or rack
Myrrhen .....	Myrrh	Ratten-pulver ...	Arsenic
Muscatnüsse.....	Nutmegs	Russ-schwärze ...	Bistre
Menning .....	Red lead	Römischer vitriol	Blue vitriol
Meerzwiebel ...	Squill	Roehrenkassia ...	Cassia fistulæ
Nikaragaholz ...	Nicaragua-wood	Ricimus-oel .....	Castor oil
Nieswurz .....	Hellebore	Ruhrwurzel .....	Cortex simaroubæ
Ochsenzungen-		Rosinen .....	Raisins
wurzel .....	Alkanet-root	Rubol .....	Rape oil
Orkanet .....	Anchusa, and do.	Rüb saat .....	Rape-seed
Orlean .....	Annatto	Rhabarber .....	Rhubarb
Oehl .....	Oil	Reiss .....	Rice
Oliven .....	Olives	Rosenhaltz .....	Rose-wood
Onyx .....	Onyx	Rubin .....	Ruby
Orselje .....	Orchella	Rum .....	Rum
Operment .....	Orpiment	Roggen .....	Rye
Oder peruanische	Snake root	Rauchwark .....	Furs
Paradies körner	Grains of Paradise	Ruhrwurzel .....	Ipecacuanha
Purgier kassia ...	Cassia fistula	Steinkohlen .....	Pit-coal, <i>stone-coal</i>
Pelzwark .....	Furs	Safflor .....	Safflower
Pockholz .....	Lignum vitæ	Saffian .....	Saffron
Perl-mutter .....	Mother of pearl	Sago .....	Sago
Pomeranzen ...	Oranges	Salmiak.....	Salammoniac
Palmöl .....	Palm oil	Salz .....	Salt
		Saltpeter .....	Saltpetre



<i>German.</i>	<i>English.</i>
Sapphir .....	Sapphire
Sassaparilla .....	Sarsaparilla
Sassafras .....	Sassafras
Sandelholz .....	Saunders
Skammonie .....	Scammony
Senna .....	Sena
Senesblatter .....	Ditto
Sumach .....	Sumac
Sumack .....	Ditto
Siede .....	Silk
Silber .....	Silver
Schiefer .....	Slate
Smalt blaussel ...	Smalts
Seife .....	Soap
Steinol .....	Petrol
Sparren.....	Spars
Spikeanarden ...	Spikenard
Schwamm .....	Sponge
Storax .....	Storax
Schildpad .....	Tortoise-shell
Schlehe-dorn ...	Acacia
Schlehen-safft ...	Ditto
Schaf-müllern ...	Agnus castus-seed
Spessglass .....	Antimony
Scheidwasser ...	Aqua-fortis
Schwefel .....	Brimstone
Spanische fliegen .....	Cantharides
Schokolade .....	Chocolate
Scharlach-wurm .....	Cochineal
Stock-fisch .....	Cod-fish
Schneckenhöpfe .....	Cowries
Smaragd .....	Emerald
Schmergel .....	Emery
Scharlach-beeren .....	Kermes
Süßholzsaft .....	Liquorice, <i>Spanish</i> <i>juice</i>
Syrup .....	Molasses
Senfsaat .....	Mustard-seed
Tannen-schwamm .....	Agaric
Teufelsdreck ...	Assa-fetida
Türkisch korn ...	Indian corn
Talg .....	Tallow
Tamarinden .....	Tamarinds
Theer .....	Tar

<i>German.</i>	<i>English.</i>
Thee .....	Tea
Tabak .....	Tobacco
Tchildkröten ...	Tortoise-shell
Tripel .....	Tripoli
Trussell.....	Truffles
Terpentin.....	Turpentine
Uncechtes palmoel .....	Castor oil
Ultramarin .....	Ultramarine
Umbra .....	Umber
Vedlenwursel ..	Orris, or <i>Ireos root</i>
Vanilje .....	Vanilla
Verniljon .....	Vermillion
Wallrath .....	Spermaceti
Wilder saffran ...	Safflower
Wacks .....	Wax, <i>bees'-wax</i>
Waidasche .....	Weed ashes
Wau .....	Weld, <i>dyer's weed</i>
Waude .....	Ditto
Wallfischbärden .....	Whalebone
Weizen.....	Wheat
Wein .....	Wine
Waid .....	Woad
Wolle .....	Wool
Worm-saamen ...	Worm-seed
Winters rinde ...	Cortex winteranus
Weinstein .....	Cream of Tartar
Weisser diptam... ..	Dittany
Weinstein.....	Argol
Wissmüth.....	Bismuth
Wachholder bee- ren .....	Juniper berries
Weihrouch .....	Frankincense
Walkererde .....	Fuller's earth
Zucker .....	Sugar
Zinn .....	Tin
Zink .....	Zinc
Zinnober .....	Cinnabar
Zimmet .....	Cinnamon
Zibeth .....	Civet
Zwiebel .....	Onions
Ziegen-haar ...	Goats' hair

## ITALIAN.

<i>Italian.</i>	<i>English.</i>	<i>Italian.</i>	<i>English.</i>
Aringhe .....	Herrings	Birra .....	Beer
Avorio .....	Ivory	Berillo .....	Beryl
Avolio .....	Ditto	Belzuar.....	Bezoar
Avena .....	Oats	Bezzuano.....	Do.
Argento vivo.....	Quicksilver	Bismutte .....	Bismuth
Acacia .....	Acacia	Bitume giudacio	BitumenJudicum
Agata .....	Agate	Bolo .....	Bole
Alabastro .....	Alabaster	Busso .....	} Box-wood
Aloe .....	Aloe	Bosso .....	
Archifoglio .....	Alquifou	Bossole .....	
Alume .....	Alum	Brasileto .....	Brasiletto-wood
Ambra gialla ...	Amber	Bufalo .....	Buff-skins
Ambracane .....	Amber-grease	Bulbi.....	Bulbs; <i>flower roots</i>
Amatista .....	Amethyst	Burro .....	} Butter
Amianto .....	Amianthus	Butiro .....	
Ameos .....	Ammeos-seed	Baccala.....	} Cod-fish
Ammi .....	Ditto	Baccalare .....	
Amomo .....	Amomi-seed	Biadi.....	Corn
Acciughe .....	Anchovies	Bambagia .....	Cotton wool
Ancusa .....	Anchusa	Bruscandoli .....	Hops
Angelica .....	Angelica root	Bisi .....	Pease
Anice .....	Aniseed	Biacca .....	White lead
Antimonio .....	Antimony	Contaria .....	Beads; <i>glass beads</i>
Acqua forte .....	Aqua-fortis	Cervogia .....	Beer
Acqua-regia ...	Aqua-regia	Cujo di bufalo	Buff-skins
Aracco .....	Arrack; <i>rack</i>	Contaria .....	Bugles
Arsenico .....	Arsenic	Canfora .....	Camphire
Assafetida .....	Assafetida	Cantarelle .....	Cantharides
Asfalto .....	BitumenJudicum	Cappari .....	Capers
Assi .....	Boards	Carvi.....	Caraway-seed
Acquavite.....	Brandy	Carbonchio .....	Carbuncle
Acquarzente ...	Ditto	Cardamomi .....	Cardamom
Argento .....	Silver	Carminio .....	Carmine
Avellane .....	Small nuts; <i>hazel</i> <i>nuts</i>	Cassia fistola.....	Cassia fistula
Amido .....	Starch	Cassiligna .....	Cassia Lignea
Amito .....	Ditto	Castorio .....	Castoreum
Azurro di mon- tagna .....	Verditer	Caviario .....	Caviare
Aceto .....	Vinegar	Caviale .....	Ditto
Azzuro Prussiano	Prussian blue	Cedro .....	Cedar-wood
Balsamo .....	Balsam	Cacio .....	Cheese
Bambu .....	Bamboo	Castagne .....	Chesnuts
		Ciocolata .....	Chocolate
		Cinabro .....	Cinnabar

<i>Italian.</i>	<i>English.</i>	<i>Italian.</i>	<i>English.</i>
Canella .....	Cinnamon	Dittamobianco...	Dittany
Chiodi digarofano	Cloves	Diaspro.....	Jasper
Cobalto.....	Cobalt	Doghe di botti ...	Staves; <i>pipe-staves</i>
Cocciniglia .....	Cochineal	Diamante .....	Diamond
Cacao .....	Cocoa	Ebano .....	Ebony
Caccao .....	Do.	Essenze.....	Essences
Cocchi .....	Cocoa-nuts	Erbione .....	Pease
Caffè .....	Coffee	Elleboro .....	Hellebore
Coloquintid .....	Colocynth	Erba guada .....	Weld; <i>dyer's wood</i>
Colofonio .....	Colophony	Faggina .....	Buckwheat
Copparosa verde	Copperas	Fraina .....	Ditto; flour
Corale .....	Coral	Fiori di cassia ..	Cassia buds
Coriandro .....	Coriander	Frassinella .....	Dittany
Curiandolo .....	Ditto	Finocchis .....	Fennel-seed
Cornalina .....	Cornelian	Fichi.....	Figs
Cotone .....	Cotton wool	Ferro .....	Iron
Cori .....	Cowries	Fastucchi .....	Pistacia nuts
Crema di Tartaro	Crean of Tartar	Fedra .....	Tick, or ticking
Cubebi .....	Cubebs	Fromento .....	Wheat
Comino.....	Cummin	Fromaggio .....	Cheese
Cumino .....	Ditto	Guadarella .....	Weld, <i>dyer's weed</i>
Colla.....	Glue	Gruogo .....	Saffron
Capelli umani ...	Hair; <i>human hair</i>	Grana sarraceno	Buckwheat
Canape .....	Hemp	Giallamina .....	Calamine
Cuoia .....	Hides	Garosani .....	Cloves
Cuerno .....	Horns	Garoffoli .....	Ditto
Cacciu .....	Japan earth	Grani .....	Corn
Catto.....	Ditto	Galanga .....	Galangal
Cola di pesce ...	Isinglass	Galle .....	Galls
Cocole di ginèpo	Juniper berries	Galluzze .....	Ditto
Chermes .....	Kermes	Gommagutta ...	Gamboge
Creinese .....	Ditto	Genziana .....	Gentian
Cocchi .....	Ditto	Gengiovo .....	Ginger
Cuejo .....	Leather	Ginseng .....	Ginseng
Campeggio legno		Granati .....	Granates; <i>garnets</i>
tauro .....	Logwood	Granito .....	Granite
Cippola.....	Onions	Gomma .....	Gum
Cenere di perla	Pearl ashes	Gomme cedera...	Gum Heder
China .....	Peruvian bark	Grano Turco o	
Chinacchina ...	Ditto	Siciliano .....	Indian corn
Carboni fossili ...	Pit-coal	Grano d'India ...	Ditto
Contra erba .....	Snake-root	Gomma o resina	
Cipolla marina...	Squill; <i>sea-onion</i>	eslastica .....	Indian rubber
Citrame .....	Tar	Grana .....	Kermes
Curcuma .....	Turmeric	Gommalacca ...	Lac; <i>gum-lac</i>
Cera .....	Wax; <i>bees' wax</i>		
Datteri .....	Dates		

<i>Italian.</i>	<i>English.</i>	<i>Italian.</i>	<i>English.</i>
Guajaco .....	Lignum vitæ	Miso .....	Rice
Guines .....	Rushes	Nero di Germania	Frankfort black
Grano .....	Wheat	Nero di fumo ...	Lamp-black
Glastro .....	Woad	Negro fumo .....	Ditto
Ireos .....	Orris, or ireos root	Noci muscado ...	Nutmegs
Ipecoacanna .....	Ipecacuanha	Noce vomiche ..	Nux vomica
Incenso .....	Incense, or <i>Frank-</i>	Nitro.....	Saltpetre
Indaco .....	Indigo [ <i>incense</i> ]	Nocciuole.....	Small nuts; <i>hazel</i> <i>nuts</i>
Lins .....	Flax	Oro .....	Gold
Luppoli .....	Hops	Olio di lino .....	Linseed oil
Legno de Jâpan	Japan-wood	Olio .....	Oil
Legno giallo ...	Fustic	Olive .....	Olives
Lego santo ....	Lignum vitæ	Oricello .....	Orchella
Linseme .....	Linseed	Orcella .....	Ditto
Litargiris .....	Litharge	Orpimento .....	Orpiment
Legno mogano...	Mahogany	Ostriche .....	Oysters
Legno sanguigno	Nicaragua-wood	Olio di palma ...	Palm oil
Legno di quassia	Quassia	Olio di ravizzoni	Rape oil
Legno di aloë ...	Aloë-wood	Oriana .....	Annatto
Legno de brasile	Brasil-wood	Orzo.....	Barley
Leger-redie .....	Rose-wood	Olio di ricino ...	Castor oil
Lavagna .....	Slate	Olio di pesce ...	Train oil
Lastra .....	Ditto	Oltramarino.....	Ultramarine
Lana .....	Wool	Osso di ballena...	Whalebone
Limoni .....	Lemons	Panicastrello.....	Millet
Mace .....	Mace	Pellice .....	Furs
Meleghetta .....	Grains of Paradise	Pelo di capra ...	Goats' hair
Mele .....	Honey	Pelo .....	Hair; hair of ani- <i>mals</i>
Manna .....	Manna	Palmonaire de	
Marmo .....	Marble	chone .....	Langwort
Mastice.....	Mastich	Piombo .....	Lead
Miglio .....	Millet	Pasta liquirizia...	Liquorice; <i>Spanish</i> <i>liquorice</i>
Moerro .....	Mohair	Perle .....	Pearls
Mielazzo di zuce-		Piselli .....	Pease
hero .....	Molasses	Pepe .....	Pepper
Madreperla .....	Mother of pearl	Petroleo .....	Petrol; <i>oil of petre</i>
Muschio .....	Musk	Pepe garafanato	Pimento
Mostarda .....	Mustard-seed	Pistacchi .....	Pistacia nuts
Mirra .....	Myrrh	Pece .....	Pitch
Melarance .....	Oranges	Prune a-sausine	Plumbs
Minio .....	Red lead	Porfido .....	Porphyry
Mandole .....	Almonds	Potassa .....	Pot ashes
Mandorle.....	Ditto		
Margheritine ...	Beads; <i>glass beads</i>		
Mimieradi piombo	Black lead		

<i>Italian.</i>	<i>English.</i>	<i>Italian.</i>	<i>English.</i>
Patate .....	Potatoes	Simaruba .....	Cortex simaroubæ
Pomi di terra ...	Ditto	Scorza magellanica	Cortex winterianus
Pietra pomicè ...	Pumice-stone	Smeraldo .....	Emerald
Penne da scrivere	Quills	Smeriglio .....	Emery
Piombaggine ...	Black-lead	Sineregio .....	Ditto
Pietra calaminaris .....	Calamine	Sale di Epsom ...	Epsom salt
Porcellane .....	Cowries	Segale .....	Rye
Penna matta.....	Down	Segala .....	Ditto
Piumini .....	Ditto	Sago .....	Sage
Piume .....	Feathers	Sale ammoniaco	Sal ammoniac
Pisei .....	Figs	Sale .....	Salt
Pelli .....	Skins, fells	Salnitro .....	Saltpetre
Preseie .....	Spars	Salsapariglia.....	Sarsaparilla
Piane .....	Deals	Sassafrasso .....	Sassafras
Quado .....	Wood	Scamonea... ..	Scammony
Quadone .....	Ditto	Sena .....	Sena; <i>senna</i>
Quercia .....	Oak	Sonmaco .....	Sumac
Raspa .....	Orchella	Seta .....	Silk
Robbia .....	Madder	Smalto azzuro ...	Smalts
Recella .....	Orchella	Smaltino .. ..	Ditto
Ravizzone.....	Rape-seed	Sapone .....	Soap
Rabarbaro .....	Rhubarb	Spemaceti.....	Spermaceti
Reobarbaro .....	Ditto	Spigenarde .....	Spikenard
Radice China ..	China root	Spugna.....	Spunge
Radice di columbo .....	Columbo root	Spungia .....	Ditto
Rame .....	Copper	Scilla .....	Squill; <i>sea-onion</i>
Rubino .....	Ruby	Storace .....	Storax
Rum .....	Rum	Sevo .....	Tallow
Sciarappa .....	Jalap	Sego .....	Ditto
Sluoje .....	Matts	Stagno .....	Tin
Senapa .....	Mustard seed	Santonies .....	Worm-seed
Susine de brignola	Prunes	Terra da purgatori .....	Fuller's earth
Strucci .....	Rags	Terra cattu .....	Japan earth
Strasse .....	Ditto	Terra Japonica...	Ditto
Semenz d'agno casto .....	Agnus castus seed	Tela... ..	Linens
Seizia de quercia	Bark; <i>oak bark</i>	Tartaro .....	Argol
Solfo .....	Brimstone	Tavole .....	Deals
Setole .....	Bristles	Taffia .....	Rum
Semenza di trifoglio .....	Clover-seed	Tamarindo .....	Tamarinds
Sughero .....	Cork	Tè .....	Tea
Suvero .....	Ditto	Tobacco .....	Tobacco
		Topazio .....	Topaz
		Tartaruga.....	Tortoise-shell
		Tripoli .....	Tripolo
		Trementina .. ..	Turpentine
		Terra d'ombre ...	Umber

<i>Italian.</i>	<i>English.</i>	<i>Italian.</i>	<i>English.</i>
Ulive .....	Olives	Vitriolo turchino	Blue vitriol
Uve passe .....	Raisins	Verzino .....	Brasil wood
Uensa .....	Alkanet root	Zenzero .....	} Ginger
Urianna .....	Annatto	Zenzovero.....	
Urucu .....	Ditto	Zinzibo .....	
Uve passe di Co- rinto .....	Currants	Zaffetica .....	Assafœtida
Umbria.....	Umber	Zelemina .....	Calamine
Vermiglione .....	Kermes	Zibetto .....	Civet
Vena .....	Oats	Zaffrone .....	Safflower
Vallonea .....	Valonea	Zafferano .....	Ditto
Valonia .....	Ditto	Zafferano .....	Saffron
Vainiglia .....	Vanilla	Zucchero de sa- turno.....	Saccharum saturni
Verderame .....	Verdigrise	Zaffiro .....	Sapphire
Vermiglione.....	Vermillion	Zuccaro .....	Sugar
Vino .....	Wine	Zinco .....	Zinc; <i>spelter</i>

SPANISH.

<i>Spanish.</i>	<i>English:</i>	<i>Spanish.</i>	<i>English.</i>
Acacia verdadera	Acacia	Achiote .....	Annatto
Agata .....	Agate	Achote .....	Ditto
Alabastro .....	Alabaster	Antimonio .....	Antimony
Arcaneta .....	Alkanet root	Aqua fuerte .....	Aqua fortis
Almendras .....	Almonds	Aqua rejia, ó real	Aqua regia
Aloe .....	Aloes	Arak .....	Arrack, or rack
Acibar .....	Ditto	Arsenico .....	Arsenic
Aloe chino .....	Aloe-wood	Asafetida .....	Assa fœtida
Alquifolóvidriado	Alquifou	Abalorios .....	Beads; <i>glass beads</i>
Alumbre .....	Alum	Asfalto .....	Bitumen judaicum
Ambar .....	Amber	Aguardiente.....	Brandy
Ambargris .....	Amber-grease	Azufre .....	Brimstone
Amatista .....	Amethyst	Ante .....	Buff skins
Amatisto .....	Ditto	Alberios .....	Bugles
Amianto .....	Amianthus; <i>earth flax</i>	Alcanfor .....	Camphire
Ameos .....	Ammeos-seed	Alearavea .....	Caraway-seed
Ammi .....	Ditto	Aceyte de ricino	Castor oil
Amómo .....	Amomi-seed	Algalia .....	Civet
Anchovas .....	Anchovies	Algodon .....	Cotton wool
Arcaneta .....	Anchusa; <i>alkanet</i>	Agallas .....	Galls
Angelica .....	Angelica root	Agengibre .....	Ginger
Anis .....	Aniseed	Arenques .....	Herrings
		Anil .....	Indigo

<i>Spanish.</i>	<i>English.</i>	<i>Spanish.</i>	<i>English.</i>
Acete de linaza	Linseed oil	Ballenas palode } cotilla ..... }	Whale-fins; whale- bone
Almartağa .....	Litharge		
Almangre.....	Manna	Cochchue .....	Annatto
Almastiga .....	Mastich	Cortezado do en-	
Almaciga .....	Ditto	cina .....	Bark; oak bark
Almizele .....	Musk	Cebada .....	Barley
Avena .....	Oats	Cerveza.....	Beer
Acete .....	Oil	Cerdas .....	Bristles
Aceitunas .....	Olives	Cebellos de flore	Bulbs; flower roots
Alfocigos .....	Pistacia-nuts	Calamina .....	Calamine
Azul de Prussia	Prussian blue	Canfor .....	Camphire
Azogue .....	Quicksilver	Cantaridas .....	Cantharides
Acete de nabina	Rape oil	Carbunco .....	Carbuncle
Azarcon .....	Red lead	Carbunculo .....	Ditto
Arroz .....	Rice	Cardamomos ...	Cardamom
Azucar desaturno	Saccharum saturni	Carmin.....	Carmine
Alazor .....	Safflower	Canafistela .....	Cassia-fistula
Azafran bastardo	Ditto	Casia purgante...	Ditto
Azafran .....	Saffron	Casia fistola .....	Ditto
Avellanas .....	Small nuts; hazel nuts	Casia lerrosa.....	Cassia lignea
Azul de azur ...	Smalts	Casalignea .....	Ditto
Amidon .....	Starch	Castoreo .....	Castoreum
Almidon .....	Ditto	Caviario .....	Caviare
Azucar.....	Sugar	Cedro .....	Cedar-wood
Acete de pescado	Train oil	Castanas .....	Chesnuts
Albayaide .....	White lead	Cocolmeça .....	China root
Alcaparras .....	Capers	Chocolate .....	Chocolate
Acete de palma	Palm oil	Cinabrio .....	Cinnabar
Alquitran .....	Tar	Canela .....	Cinnamon
Balsamo .....	Balsam	Clavos de especia	Cloves
Bambu .....	Bamboe	Clavillos .....	Ditto
Barrilla.....	Barilla	Cobalto.....	Cobalt
Berilo .....	Beryl	Cochinilla.....	Cochineal
Bezar .....	Bezoar	Cacao .....	Cocoa
Bezoar .....	Ditto	Cocos .....	Cocoa-nuts
Bismuth .....	Bismuth	Café .....	Coffee
Betun judaico ...	Bitumen judaicum <i>Jew's pitch</i>	Coloquintidas ...	Colocynth
Bol .....	Bole	Callabacillas .....	Ditto
Borrax .....	Borax	Colofonia .....	Colophony
Bôx .....	Box-wood	Cobre .....	Copper
Brasil .....	Brasil-wood	Coral.....	Coral
Brasilete .....	Brasiletto wood	Cilantro .....	Coriander
Bacallao .....	Cod-fish	Culantro .....	Citto
Bucios .....	Cowries	Corcho .....	Cork
Bayas de enebro	Juniper berries	Cornerina.....	Cornelian
		Corteza winterana	Cortex winteranus
		Cubebus .....	Cubeb

<i>Spanish.</i>	<i>English.</i>	<i>Spanish.</i>	<i>English.</i>
Comino.....	Cummin	Fresnillo .....	Dittany
Chitan .....	Dittany	Flojel .....	Down
Cola .....	Glue	Granos .....	Corn
Cabellos .....	Hair; <i>human hair</i>	Galanga .....	Galangal
Canamo .....	Hemp	Gommoguta.....	Gamboge
Col-pez.....	Isinglass	Guta gainba .....	Ditto
Cuero .....	Leather	Grana del paraiso	Grains of Paradise
Caoba .....	Mahogany	Granadas .....	Granates; <i>garnets</i>
Caobana .....	Ditto	Granites .....	Granite
Chancaca .....	Molasses	Goina .....	Gum
Cocha de nacar	Mother of pearl	Gomme yedra ..	Gum heder
Carballo .....	Oak	Goma laca .....	Lac; <i>gum lac</i>
Cebolla .....	Onions	Grana kermes ..	Kermes
Cenizas de perlas	Pearl ashes	Grana de la cos-	
Corteza de loja...	Peruvian bark	coja .....	Ditto
Carbones de tierra	Pit-coal	Guayaco .....	Lignum vitæ
Carbones de pie-		Granza .....	Madder
dra .....	Ditto	Grasa .....	Train oil
Centeno .....	Rye	Gualda .....	Weld; <i>dyer's weed</i>
Cartamo .....	Safflower	Glasto .....	Woad
Contra-yerba ..	Snake root	Grana .....	Cochineal
Cebolla albarrana	Squill; <i>sea onion</i>	Harina .....	Flour
Carey .....	Tortoise-shell	Higos .....	Figs
Concha.....	Ditto	Hinojo .....	Fennel seed
Curcuma .....	Turmeric	Hierro .....	Iron
Carderrillo .....	Verdigrise	Incienso macho	Frankincense
Cera .....	Wax; <i>bees' wax</i>	Incienso .....	Ditto
Dátiles .....	Dates	Jenciana .....	Gentian
Diamante.....	Diamond	Jenzibre .....	Ginger
Dictamo blanco	Dittany	Jin-seng .....	Ginseng
Ebano .....	Ebony	Jalapa .....	Jalap
Esmeralda .....	Emerald	Japan .....	Japan-wood
Esmeril .....	Emery	Jaspe .....	Jasper
Esencias .....	Essences	Ipecacuana .....	Ipecacuanha
Estreys.....	Matts	Jabon .....	Soap
Escamonea .....	Scammony	Lana .....	Wool
Esmalte .....	Smalts	Lino .....	Flax
Espërma de bal-		Limones .....	Lemons
lena .....	Spermaceti	Limoës .....	Ditto
Espërmaceti.....	Ditto	Lienzo .....	Linens
Espenza .....	Sponge	Linaza .....	Linseed; <i>flax seed</i>
Estoraque.....	Storax	Litarjirio .....	Litharge
Estagno.....	Tin	Leno de quassia	Quassia
Flor de arbol de			
canela .....	Cassia buds		



<i>Spanish.</i>	<i>English.</i>	<i>Spanish.</i>	<i>English.</i>
Madera del bresil	Brasil wood	Palma christi ...	Castor oil
Manteca .....	Butter	Pasas de corinto	Currants
Mangelanica ...	Cortex winteranus	Plumazo .....	Down
Malagueta .....	Grains of Paradise	Pescudos .....	Fish
Miel .....	Honey	Plumas .....	Feathers
Marfil .....	Ivory	Palo amarillo ...	Fustic
Macio .....	Mace	Pelesteria .....	Furs
Mana .....	Manna	Pelote .....	Goats' hair
Mangla .....	Ditto	Pollejos .....	Hides
Marmol .....	Marble	Pieles .....	Ditto
Mijo .....	Millet	Palmanaria dos	
Mue .....	Mohair	carvalhos .....	Langwort
Muer .....	Ditto	Plomo .....	Lead
Miel de azucar	Molasses	Palo santo.....	Lignum vita
Madre de perlas	Mother of pearl	Paolo de cam-	
Mostaza .....	Mustard seed	peche .....	Lowood
Mirra .....	Myrrh	Perlas .....	Pearls
Matacan .....	Nux vomica	Pesoles .....	Pease
Malaperros .....	Ditto	Pimienta .....	Pepper
Minium .....	Red lead	Pimienta de Ja-	
		maica .....	Pimento
Nabina .....	Rapeseed	Pez .....	Pitch
Negro di germa-		Porfido .....	Porphyry
nia .....	Frankfort black	Potassa .....	Pot ashes
Negro de marfil	Ivory black	Potatas manche-	
Negro de hume	Lamp black	gus .....	Potatoes
Nuez muscada ...	Nutmegs	Piedra pomez ...	Pumice stone
Nuez vomica ...	Nux vomica	Plumas o canones	Quills
Naranjas .....	Oranges	Pasas .....	Raisins
Nitro.....	Saltpetro	Plata .....	Silver
		Pieles .....	Skins; <i>fells</i>
Olibano .....	Frankincense	Pizrra .....	Slate
Oro .....	Gold	Purches.....	Spars
Oblon .....	Hops	Peltre .....	Tin
Orozuz .....	Liquorice; <i>Spanish</i>	Pastel .....	Woad
	<i>juice</i>		
Onique .....	Onyx	Quioantes .....	Peas
Orchilla .....	Orchella	Quina .....	Peruvian bark
Orpimente .....	Orpiment	Quina-quina ...	Ditto
Ostras .....	Oysters	Queso .....	Cheese
Orellana .....	Annatto		
		Raiz de columbo	Columbo root
Pallomilla de tinte	Alkanet root	Raiz China .....	China root
Piminto loco ...	Agnus castus-seed	Rocalla .....	Beads; <i>glass beads</i>
Piedra inga .....	Bismuth	Romano de chipre	Blue vitriol
Piedra mineral de		Resina elastica ...	Indian rubber
plomo .....	Black lead	Regaliz .....	Liquorice; <i>Spanish</i>
Piedra calaminar	Calamine		<i>juice</i>

<i>Spanish.</i>	<i>English.</i>	<i>Spanish.</i>	<i>English.</i>
Roble .....	Oak	Tablas .....	Deals; deal boards
Raiz de lire de Florenzia .....	Orris root	Tierra de baton	Fuller's earth
Ruibarbo .....	Rhubarb	Trigo de Indias	Indian corn
Rubi .....	Ruby	Trigo de Turquía	Ditto
Ron .....	Rum	Tamarindo .....	Tamarinds
Rom .....	Ditto	Thé .....	Tea
Rubia .....	Madder	Té .....	Ditto
Sauzgatillo .....	Agnus castus-seed	Terlix para .....	Tick, or ticking
Sosa .....	Barilla	Tabaco .....	Tobacco
Soda .....	Ditto	Tripoli .....	Tripoli; rotten stone
Setas .....	Bristles	Trementina .....	Turpentine
Semilla de trebol	Clover-seed	Trigo .....	Wheat
Simaruba .....	Cortex simaroubæ	Ule .....	Indian rubber
Siqueyes .....	Cowries	Ulce .....	Ditto
Sangro de drago	Dragon's blood	Ultramar .....	Ultramarine
Sal de Epsom ..	Epsom salt	Vainilla .....	Vanilla
Sago .....	Sago	Vainica .....	Ditto
Sal ammoniaca..	Sal ammoniac	Verdete.....	Verdigrise
Sal.....	Salt	Verde-gris .....	Ditto
Salitre .....	Saltpetre	Verdetierra .....	Verditer
Safir .....	Sapphire	Vermillon.....	Vermillion
Sasafras.....	Sassafras	Vinagre .....	Vinegar
Sen .....	Sena; senna	Vino .....	Wine
Sena .....	Ditto	Vitriolo de marte	Copperas
Seda .....	Silk	Vidrieria .....	Beads; glass beads
Sebo .....	Tallow	Vitriolo azul, de cobre.....	Blue vitriol
Sombra'.....	Umbër	Vedegambre.....	Hellebore
Semer contra ..	Worm-seed	Vermellon.....	Kermes
Tafia.....	Rum	Zarzaparilla .....	Sarsaparilla
Tartaro.....	Argol; tartar	Zinco .....	Zinc; spelter
Tablas .....	Boards	Zumaque .....	Sumac
Trigo saraceno..	Buck wheat		
Trigo negro .....	Ditto		
Tueras .....	Colocynth		

PORTUGUESE.

<i>Portuguese.</i>	<i>English.</i>	<i>Portuguese.</i>	<i>English.</i>
Accacia .....	Accacia	Almartaga .....	Litharge
Agata .....	Agate	Almacega .....	Mastich
Alabastro .....	Alabaster	Assucar liquido	Molasses
Aloes .....	Aloe	Almiscar .....	Musk
Alcane bastardate	Alkanet root	Avea .....	Oats
Amendoas .....	Almonds	Ammomo .....	Pimento; <i>allspice</i>
Ambar ... ..	Amber	Azul de alemanha	Prussian blue
Ambargris .....	Ambergrease	Azul de Prussia	Ditto
Amætista .....	Amethyst	Azouge.....	Quicksilver
Amêstisto.....	Ditto	Azarcao .....	Red lead
Amianto .....	Amianthus; <i>earth</i> <i>flax</i>	Arroz .....	Rice
Ameos .....	Ammeos-seed	Arros .....	Ditto
Ammio .....	Ditto	Assucar de sa- } turno..... } }	Sachharum saturni <i>sugar of lead</i>
Amemo .....	Amomi-seed	Açafroá .....	Safflower
Anchovas .....	Anchovies	Ázafroá .....	Ditto
Alcanna bastarda	Anchusa, <i>alkanet</i>	Acafrao .....	Saffran
Anis .....	Aniseed	Ardoisa.....	Slate
Anise .....	Ditto	Avellaas .....	Small nuts; <i>hazel-</i> <i>nuts</i>
Angelica .....	Angelica root	Amido .....	Starch
Antimonio .....	Antimony	Assucar .....	Sugar
Agoa forte .....	Aqua fortis	Assucar candi ...	Sugar candy
Agua regia, ou		Alcatrao .....	Tar
regal.....	Aqua regia	Azeite de peixe	Train oil
Arquifolho .....	Arquifou; <i>potter's</i> <i>ore</i>	Acafras da India	Turmerick
Arac .....	Arrack; <i>rack</i>	Azul d'ultrama-	
Arsenico .....	Arsenic	rino.....	Ultramarine
Asa-fetida .....	Assafætida	Albaiade .....	White lead
Azevre .....	Aloes	Balsamo .....	Balsam
Aljôfar .....	Beads; <i>glass beads</i>	Bambu .....	Bamboe
Asphalto .....	Bitumen judaicum <i>Jews' pitch</i>	Barrilha .....	Barilla
Alcamphor .....	Camphire	Berillo .....	Beryl
Alcapparas .....	Capers	Bôlo .....	Bole
Alcaravia .....	Caraway-seed	Borax .....	Borax
Alchirivia .....	Ditto	Bucho .....	Boxwood
Algalia .....	Civet	Bûxo .....	Ditto
Algodao .....	Cotton wool	Bguardente .....	Brandy
Arenques .....	Herrings	Brasileto .....	Brasiletto-wood
Anil .....	Indigo	Bacalhao .....	Cod-fish
Alquermes .....	Kermes	Bucios .....	Cowries
Alcaez .....	Liquorice; <i>Spanish</i> <i>juice</i>	Bugalhos .....	Galls
		Borraçha .....	Indian rubber

<i>Portuguese.</i>	<i>English.</i>	<i>Portuguese.</i>	<i>English.</i>
Bagas de zimbro	Juniper berries	Cola .....	Glue
Brea .....	Pitch	Colla .....	Ditto
Batates de terra	Potatoes	Cabellos .....	Hair; <i>human hair</i>
Berchas .....	Spars	Canhamo .....	Hemp
Baonilha .....	Vanilla	Cépó de camaras	Ipecacuanha
Calimina .....	Calamine	Cola de peixe ...	Isinglass
Cantaridas .....	Cantharides	Chumbo .....	Lead
Carbeunculo.....	Carbuncle	Couro .....	Leather
Cardamomas ..	Cardamom	Coiro.....	Ditto
Carmin .....	Carmine	Chamalote .....	Mohair
Cassia purgante	Cassia fistula	Canirao.....	Nux vomica
Canafistula .....	Ditto	Carvalho .....	Oak
Cevca.....	Barley	Cebola .....	Onions
Cervêja .....	Beer	Cinza de perolas	Pearl ashes
Cerdas .....	Bristles	Cavoes de terra...	Pit-coal
Couro de bufalo	Buff-skins	Centeio .....	Rye
Cebellos de flore	Bulbs; <i>flower roots</i>	Cartamo .....	Safflower
Chirivia .....	Caraway-seed	Cumagre .....	Sumac
Cassia len hosa ...	Cassia lignea	Contra-erva .....	Snake-root
Castoreo .....	Castoreum	Cebola alvarra ...	Squill; <i>sea-onion</i>
Caviario .....	Caviare	Chá .....	Tea
Cedro .....	Cedar-wood	Concha .....	Tortoise-shell
Castanhas.....	Chesnuts	Curcuma .....	Turmeric
Cinabrio .....	Cinnabar	Cardimilho .....	Verdigrise
Canella .....	Cinnamon	Cera .....	Wax, <i>bees'-wax</i>
Cravos da India	Cloves	Diamante .....	Diamond
Cravos girofes ...	Ditto	Dictamo branco	Dittany
Cobalto .....	Cobalt	Enxôfre .....	Brimstone
Cochenilha .....	Cochineal	Esquina .....	China root
Cacao .....	Cocoa	Eschineza .....	Ditto
Cocos .....	Cocoa-nuts	Ebano .....	Ebony
Caffé.....	Coffee	Evano .....	Ditto
Coloquintidas ...	Colocyntli	Edredon .....	Eider-down
Cabacinhas .....	Ditto	Esmeralda .....	Emerald
Colophonia .....	Colophony	Esmeril.....	Emery
Cobre .....	Copper	Essencias .....	Essences
Caparroza verde	Copperas	Esterras .....	Matts
Coral.....	Coral	Evilhas .....	Peas
Coentro.....	Coriander	Esamonea .....	Scammony
Coriandro .....	Ditto	Esmalte .....	Smalts
Cortica .....	Cork	Espermaceti .....	Spermaceti
Cornelina .....	Cornelian	Esponga .....	Sponge
Corneirina .....	Ditto	Estoraque.....	Storax
Canella de winter	Cortex winteranus	Estanho .....	Tin
Cobebas .....	Cubebs	Farinha.....	Flour
Cuminho .....	Cummin		
Cominhos.....	Ditto		

<i>Portuguese.</i>	<i>English.</i>
Flores de cassia...	Cassia buds
Fraxinello .....	Dittany
Frouxel.....	Down
Figos.....	Figs
Funcho .....	Fennel-seed
Ferr .....	Iron
Ferrugem de chammine ...	Lampblack
Flor de noz mos- cada .....	Mace
Fisticos.....	Pistacia nuts
Farrapos .....	Rags
Fusaro .....	Safflower
Galanga .....	Galangal
Galhas .....	Galls
Graos .....	Corn
Goma rom .....	Gamboge
Goma guta .....	Ditto
Gutta gamba ...	Ditto
Genciana .....	Gentian
Gengibre .....	Ginger
Ginsao .....	Ginseng
Grude .....	Glue
Graa do paraizo	Grains of Paradise
Granadas .....	Granates; <i>garnets</i>
Granates .....	Ditto
Granites .....	Granite
Goma .....	Gum
Gomma .....	Ditto
Gomme dera ...	Gum heder
Graa .....	Kermes
Guaico .....	Lignum vitæ
Grança .....	Madder
Gauda .....	Weld; <i>dyer's weed</i>
Herva gauda.....	Weld; <i>dyer's weld</i>
Heana spuria ...	Alkanet root
Hume .....	Allum
Helleboro .....	Hellebore
Hervilhas .....	Peas
Japan .....	Japan wood
Jalappa .....	Jalap
Insensio macho...	Frankincense
Jatabia .....	Fustick
Jaspe .....	Jasper
Ipecacuanha.....	Ipecacuanha

<i>Portuguese.</i>	<i>English.</i>
Incenso.....	Frankincense
Kermes .....	Kermes
Lã .....	Wool
Laa .....	Ditto
Luparo .....	Hops
Lupulo .....	Ditto
Laca em páos ...	Lac; <i>gum lac</i>
Linhaca .....	Linseed; <i>flax-seed</i>
Lithargirio .....	Litharge
Laragas.....	Oranges
Linho .....	Flax
Marcasita .....	Bismuth
Missanga .....	Beads; <i>bugles</i>
Manteiga .....	Butter
Malaguetta de guine .....	Grains of Paradise
Mel .....	Honey
Marfim.....	Ivory
Macis .....	Mace
Manna .....	Manna
Marmore .....	Marble
Milho .....	Millet
Melania .....	Mohair
Melasso.....	Molasses
Madreperola.....	Mother of pearl
Mostarda .....	Mustard-seed
Mirra .....	Myrrh
Minio .....	Red lead
Nabica .....	Rape-seed
Negro di Ger- mania .....	Frankfort black
Noz moscada ...	Nutmegs
Noz vomica .....	Nux vomica
Orcaneta .....	Anchusa; <i>alkanet</i>
Oriana .....	Annatto
Orraca .....	Arrack; <i>rack</i>
Oleo de ricino ...	Castor oil
Olibano.....	Frankincense
Ouro .....	Gold
Oleo de linhaca	Linseed oil
Oleo .....	Oil
Onix.....	Onyx
Orsella .....	Orchella

<i>Portuguese.</i>	<i>English.</i>	<i>Portuguese.</i>	<i>English.</i>
Orzella .....	Orchella	Recalha .....	Beads; <i>glass beads</i>
Ostrass .....	Oysters.	Raiz da china ...	China root
Oleo de palma ...	Palm oil	Raiz de columba	Columbo root
Oleo de nabica...	Rape oil	Resina do para...	Indian rubber
Ossos de balea ...	Whalefins; <i>whalebone</i>	Resina elastica das borrachinhas	Ditto
Pastel .....	Woad	Regoliz .....	Liquorice; <i>Spanish juice</i>
Pão de aloes.....	Aloe-wood	Rogoliz .....	Ditto
Padrahume .....	Alum	Ruiva .....	Madder
Pedra bazar .....	Bezoar	Roble .....	Oak
Pedra mineral de chumbo .....	Black lead	Ruibarbo .....	Rhubarb
Pedra calaminaria	Calamine	Rom .....	Rum
Passas de corinto	Currants	Rubim .....	Ruby
Plumas .....	Feathers; <i>bed-feathers</i>	Sabao .....	Soap
Pelleteria .....	Furs	Sago .....	Sago
Pelo de capra ...	Goat's-hair	Sal.....	Salt
Pello.....	Hair; <i>hair of animals</i>	Sal ammoniaco...	Sal ammoniac
Pelles .....	Hides	Safira .....	Sapphire
Pao sancto .....	Lignum vitæ	Salitre .....	Saltpetre
Panno de linho...	Linens	Salsa-parilha ..	Sarsaparilla
Pao de campoche	Logwood	Sassafraz .....	Sassafras
Painco .....	Millet	Sassafraz .....	Ditto
Perolas.....	Pearls	Sene .....	Sena; <i>senna</i>
Pimenta .....	Pepper	Senna .....	Ditto
Pimenta da Ja- maica .....	Pimento; <i>allspice</i>	Sumagre .....	Sumac
Pistacias .....	Pistacia nuts	Seda .....	Silk
Passa d'amings...	Plumbs	Seteio .....	Rye
Porfido .....	Porphyry	Semente de nabos	Rape seed, <i>cole seed</i>
Potassa .....	Pot ashes	Semente de luzer- na .....	Lucern-seed
Pomos de terra...	Potatoes	Semente de agno casto.....	Agnus castus seed
Pedra pomes ...	Pumice-stone	Solda.....	Barilla
Pao de quassia ...	Quassia	Sedas.....	Bristles
Pennas .....	Quills	Semente de trevo	Clover-seed
Passas .....	Raisins	Simaroba .....	Cortex simarouba
Passa de uvas ...	Ditto	Sangue de drago	Dragon's blood
Prata.....	Silver	Sal de Epsom ...	Epsom salts
Pelles .....	Skins	Storaque .....	Storax
Picarra.....	Slate	Sebo .....	Tallow
Queijo .....	Cheese	Semente contre vermes .....	Worm-seed
Quina .....	Peruvian black	Tabacco .....	Tobacco
Quinquina .....	Ditto	Tamarinho .....	Tamarinds
		Tartaruga.....	Tortoise-shell

<i>Portuguese.</i>	<i>English.</i>	<i>Portuguese.</i>	<i>English.</i>
Trez .....	Tick; <i>tick</i>	Vanilha.....	Vanilla
Topazio .....	Topaz	Verdete.....	Verdigrise
Terebenthina ...	Turpentine	Verdegris .....	Ditto
Terra sombra ...	Umber	Verdemontanha	
Trigo .....	Wheat	azul .....	Verditer
Tartaro .....	Argol; <i>Tartar</i>	Vermelho .....	Vermillion
Trigo saracens ...	Buckwheat	Vineagre .....	Vinegar
Tamaras .....	Dates	Vinho .....	Wine
Taboinhas.....	Deals	Velorios .....	Beads; <i>glass-beads</i>
Trigo de Turquia	Indian corn	Vitriolo de cobre	Blue vitriol
Urucu .....	Annatto	Zimbos.....	Cowries
		Zinco .....	Zinc; <i>spelter</i>

DUTCH.

<i>Dutch.</i>	<i>English.</i>	<i>Dutch.</i>	<i>English.</i>
Agaatsteen .....	Agate	Bier .....	Beer
Albaster .....	Alabaster	Berylsteen .....	Beryl
Amandelen .....	Almonds	Bezoarsteen .....	Bezoar
Aloë .....	Aloe	Bismuth .....	Bismuth
Aloë-hout.....	Aloe-wood	Bergsteen .....	Ditto
Aluin .....	Alum	Blaau vitriool ..	Blue vitriol
Ambergryns .....	Amber-grease	Berden .....	Boards
Amathisteen ...	Amethyst	Borden .....	Ditto
Amyzaad .....	Ammeos-seed	Bolus.....	Bole
Amomizaad .....	Amomi-seed	Brandewyn .....	Brandy
Ansjooves .....	Anchovies	Brasilienhout ...	Brasil-wood
Angelica .....	Angelica root	Brasilethout .....	Brasiletto-wood
Anys.....	Aniseed	Borstels.....	Bristles
Anys-zaad .....	Ditto	Boekweit .....	Buck wheat
Arak .....	Arrack; rack	Buffelsleer .....	Buff' skins
Arsenik.....	Arsenic	Buffelshuiden ...	Ditto
Ajuin .....	Onions	Bollen .....	Bulbs; <i>flower roots</i>
Aardappelen ...	Potatoes	Boter .....	Butter
Arduin .....	Slate	Beervergeil .....	Castoreum
Amydon .....	Starch	Bakkeljauw .....	Cod-fish
Ameldonk .....	Ditto	Bitterwappelen ...	Colocynth
Akerdoppen.....	Valonea	Boomwol .....	Cotton wool
Azyn .....	Vinegar	Bedveern .....	Feathers; <i>bed-feathers</i>
Ameril .....	Emery	Bout .....	Furs
Barnsteen.....	Amber	Boutwerk.....	Ditto
Balsem .....	Balsam	Braakworstel ...	Ipecacuanha
Bamboesrietten...	Bamboe	Braaknooten ...	Nux vomica

<i>Dutch.</i>	<i>English.</i>	<i>Dutch.</i>	<i>English.</i>
Brai .....	Pitch	Gember .....	Ginger
Berlins blaauw ...	Prussian blue; <i>Berlin-blue</i>	Gentiaan .....	Gentian
Bres .....	Rushes	Ginsem .....	Ginseng
Basterd saffran ...	Safflower	Ginseng .....	Ditto
Belltulyk .....	Tick; <i>ticking</i>	Gom .....	Gum
Banilje .....	Vanilla	Gomme.....	Ditto
Balein .....	Whale-fins; whale-bone	Granaaten .....	Granates; <i>garnets</i>
Balyn .....	Ditto	Granitsteen .....	Granite
Bloedhout.....	Nicaragua wood	Goud.....	Gold
Bergblaauw .....	Verditer	Guinees grein ...	Grains of Paradise
Ceder .....	Cedar wood	Gitte gom.....	Gamboge
Chinawortel .....	China root	Gutta gamba ..	Ditto
Cinabar .....	Cinnabar	Gutte gom .....	Ditto
Caneel .....	Cinnamon	Genever-bessen	Juniper berries
Ciyet.....	Civet	Grein .....	Kermes
Cochenilje .....	Cochineal	Gomlak.....	Lac; <i>gum-lac</i>
Columbo wortel	Columbo root	Gelit .....	Litharge
Coper .....	Copper	Geerst .....	Millet
Citroenen .....	Lemons	eers .....	Ditto
Dadels .....	Dates	Gierst .....	Ditto
Daayen .....	Ditto	Gravehout.....	Nephritic wood
Deelen .....	Deals	Garst.....	Barley
Demant .....	Diamond	Gerst .....	Ditto
Diamant .....	Ditto	Geroffles .....	Cloves
Dons .....	Down	Groen vitriool ..	Copperas
Draakenbloed ..	Dragon's blood	Graanen .....	Corn
Duivelsdreck ..	Assa-fœtida	Geelhout .....	Fustic
Dambesien .....	Juniper-berries	Giftwortel .....	Snake root
Eik .....	Oak	Huisenblaas .....	Isinglass
Erwten .....	Peas	Hair .....	Hair; human hair
Ebbenhout .....	Ebony	Hair .....	Hair; hair of animals
Ebbehout .....	Ditto	Haringen .....	Herrings
Esmeraud .....	Emerald	Hennip.....	Hemp
Epsom zout .....	Epsom salt	Honig .....	Honey
Foelie .....	Mace	Honing.....	Ditto
Foely .....	Ditto	Hoppe .....	Hops
Flores .....	Safflower	Hoorn .....	Horns
Fluweelzwart ...	Ivory black	Huiden .....	Hides
Galinga.....	Galangal	Haver .....	Oats
Galnooten .....	Galls; <i>gall-nuts</i>	Hazelnooten ..	Small nuts; <i>hazelnuts</i>
Genever .....	Geneva	Hout kassie .....	Cassia lignea
		Jamaica peper ...	Pimento
		Jodenlym .....	Bitumen judaicum <i>Jew's pitch</i>



<i>Dutch.</i>	<i>English.</i>	<i>Dutch.</i>	<i>English.</i>
Jalappe .....	Jalap	Kwickzilver .....	Quicksilver
Japaansche rarde	Japan earth	Keelduivel .....	Rum
Japanhout .....	Japan wood	Kandy .....	Sugar candy
Jaspis .....	Jasper	Kandy zuiker ...	Ditto
Indigo .....	Indigo	Kurkuma .....	Turmeric
Kaas .....	Cheese	Loodglans .....	Alquifou
Kavejaar .....	Caviare	Lym .....	Glue
Kastanien .....	Chesnuts	Longemos .....	Longwort
Karstengen .....	Ditto	Lood .....	Lead
Klaver zaad .....	Clover-seed	Loot ...	Ditto
Kruid nagelen ...	Cloves	Leder .....	Leather
Kobald .....	Cobalt	Leer .....	Ditto
Kakau .....	Cocoa	Limoenen .....	Lemons
Kokosnooten ...	Cocoa-nuts	Lywant .....	Linens
Kalappusnooten	Ditto	Lynzaad .....	Linseed; <i>flax-seed</i>
Kabeljaauw .....	Cod-fish	Lynöli .....	Linseed oil
Koffy .....	Coffee	Luzerne zaad ...	Lucerne-seed
Koraalen .....	Coral	Loodwit .....	White lead; <i>ceruce</i>
Koriander .....	Coriander	Lood-suiker .....	Saccharum saturni
Kork .....	Cork	Meel .....	Flour
Koren .....	Corn	Moerderkaneel ...	Cassia lignea
Karneol.....	Cornelian	Mee .....	Madder
Katoen .....	Cotton-wool	Meekrap .....	Ditto
Kauris .....	Cowries	Mahognyhout ...	Mahogany
Koebeben .....	Cubeb	Manna .....	Manna
Komyn .....	Cumin	Marmer .....	Marble
Korenten .....	Currants	Marmalada .....	Marmalade
Krenten .....	Ditto	Mastik .....	Mastich
Kuischboom zaad	Agnus castus-seed	Matten .....	Matts
Koningswater ...	Aqua regia	Moor .....	Mohair
Koper vitriool ...	Blue vitriol	Muskus .....	Musk
Kilamyn .....	Calamine	Mosterd zaad ...	Mustard-seed
Kalamynsteen ...	Ditto	Mirrhe .....	Myrrh
Kamfer .....	Camphire	Muskaatnooten	Nutmegs
Kappers .....	Capers	Menie .....	Red lead
Karway.....	Caraway-seed	Muscaatbloom ...	Mace
Karbonkel .....	Carbuncle	Nieswortel .....	Hellebore
Kardemomen ...	Cardamom	Nootenmuskaat...	Nutmegs
Karmyn .....	Carmine	Oxtertunge .....	Alkanet root
Kassiebloemen ...	Cassia-buds	Ossetong .....	Anchusa; alkanet
Kasie.. .....	Cassia fistula	Orkanette.....	Ditto
Kennip .....	Hemp	Orleaan.....	Annatto
Kampechhout...	Logwood	Oli; olie; oly ...	Oil
Krap .....	Madder	Oranjen .....	Oranges
Kraanöogen .....	Nux vomica		
Kina .....	Peruvian bark		
Kivassiehout ...	Quassia		

<i>Dutch.</i>	<i>English.</i>	<i>Dutch.</i>	<i>English.</i>
Oreel.....	Orchella	Rum.....	Rum
Orchillie .....	Ditto	Rog .....	Rye
Orseille .....	Ditto	Rogge .....	Ditto
Operment.....	Orpiment	Rokoe .....	Annatto
Oesters .....	Oysters		
		Spiesglas .....	Antimony
Palmenhout .....	Box-wood	Steakwater .....	Aqua-fortis
Potlood.....	Black lead	Souda .....	Barilla
Pypkassie .....	Cassia fistula	Spaansche vliegen .....	Cantharides
Purgeerendekassie .....	Ditto	Shokolade .....	Chocolate
Pokhout .....	Lignum vitæ	Slangenhoofdjes .....	Cowries
Paarlemor.....	Mother of pearl	Smaragd .....	Emerald
Palme olie.....	Palm oil	Smergel .....	Emery
Paerelâsh .....	Pearl ashes	Stockvischhout... ..	Fustic
Paarlen .....	Pearls	Scharlakenbessen .....	Kermes
Peper .....	Pepper	Syrop .....	Molasses
Pistasjes .....	Pistacia nuts	Steenöli.....	Petrol; oil of Peter
Pek .....	Pitch	Steenkoolen .....	Pit coal; stone coal
Piement .....	Pimento; <i>allspice</i>	Saffloer .....	Safflower
Porfiersteen .....	Porphyry	Saffraan .....	Saffron
Potâs.....	Pot ashes	Sago .....	Sago
Pruimellen .....	Prunes	Sal ammoniâk ..	Sal ammoniac
Puimsteen .....	Pumice stone	Salpeter .....	Saltpetre
Pennen.....	Quills	Saffiersteen .....	Sapphire
Pipestaver.....	Staves; <i>pipe-staves</i>	Sarzaparille .....	Sarsaparilla
Pedra tripe .....	Tripoli, <i>rotten stone</i>	Sassafrass .....	Sassafras
Pluimen .....	Feathers; <i>bed-feathers</i>	Skammoneuni ..	Scammony
		Seuebladen .....	Sena; senna
Quintappelen ..	Colocynth	Sinak.....	Sumac
Quinquina .....	Peruvian bark	Sumak .....	Ditto
		Smalt .....	Smalts
Rack.....	Arrack; <i>rack</i>	Spieren .....	Spars
Rottekruid .....	Arsenic	Spikenard .....	Spikenard
Run runne .....	Bark; <i>oak-bark</i>	Spongje .....	Spunge
Roomsch vitriool .....	Blue vitriol	Spons .....	Ditto
Riskassie .....	Cassia fistula	Squille .....	Squill; <i>sea onion</i>
Roodenloop wortel .....	Cortex simaroubæ	Storax .....	Storax
Roodenloop wortel .....	Ipecacuanha	Styrax .....	Ditto
Rozynen .....	Raisins	Suiker .....	Sugar
Raapoli .....	Rape oil	Schildpad.....	Tortoise-shell
Raapzaad .....	Rape-seed	Spaansch groen .....	Verdigrisc
Rhabarber .....	Rhubarb	Spiauter .....	Spelter
Ryst .....	Rice		
Rosenhout .....	Rose-wood	Tabak .....	Tobacco
Robyn .....	Ruby	Talg .....	Tallow
		Talg.....	Ditto
		Tamarinden .....	Tamarinds
		Teer .....	Tar

<i>Dutch.</i>	<i>English.</i>	<i>Dutch.</i>	<i>English.</i>
Thee .....	Tea	Wouw .....	Weld; dyer's weed
Tin .....	Tin	Wouwe .....	Ditto
Topaas .....	Topaz	Walvischbeen ...	Whalefins; whale-bone
Thraan .....	Train oil	Weede .....	Woad
Tartufels .....	Truffles	Wol .....	Wool
Terpenty .....	Turpentine	Wyn .....	Wine
Taru .....	Wheat	Winters bark ...	Cortex winteranus
Turksch koorn..	Indian corn	Wynsternoom ..	Cream of tartar
Umbra .....	Umber	Witte diptam ...	Dittany
Ultramarijn .....	Ultramarine	Wierook .....	Frankincense
Uyen.....	Onions	Wynsteen .....	Argol; tartar
Vellen .....	Skins; fells	Yslandich mos...	Iceland moss
Vermiljoen .....	Vermillion	Yvoor .....	Ivory
Velkars .....	Gum Heder	Yzer .....	Iron
Veerkrachtig hars	Indian rubber	Yzervitriol .....	Copperas
Violwickel .....	Orris; <i>ireos root</i>	Zolfer .....	Brimstone
Vennettianse paarlen .....	Bugles	Zwavel .....	Ditto
Veld komyn.....	Caraway-seed	Zwartzel .....	Lamp black
Vermilioen .....	Cinnabar	Zoethout .....	Liquorice root
Vivolhars .....	Colophony	Zout .....	Salt
Venkel .....	Fennel-seed	Zilver .....	Silver
Vygen .....	Figs	Zy.....	Silk
Vischer .....	Fish	Zyde .....	Ditto
Vlasch .....	Flax	Zeep.....	Soap
Voläard .....	Fuller's earth	Zeeajuin .....	Squill; <i>sea onion</i>
Walschot .....	Spemaceti	Zink .....	Zinc; spelter
Wasch .....	Wax; <i>bee's wax</i>	Zuiker .....	Sugar
Weedäsch.....	Weed-ashes	Zeverzaad.....	Worm-seed

DANISH.

<i>Danish.</i>	<i>English.</i>	<i>Danish.</i>	<i>English.</i>
Agat .....	Agate	Ammyfrö .....	Ammeos-seed
Agnus castus fröe	Agnus castus-seed	Amomfrö .....	Amomi-seed
Alabaster .....	Alabaster	Ansios .....	Anchovies
Aloe .....	Aloe	Anis .....	Aniseed
Aloe-træe .....	Aloe-wood	Arrak .....	Arrack; <i>rack</i>
Alun .....	Alum	Arsenik.....	Arsenic
Aluun .....	Ditto	Aerter .....	Peas
Ambra .....	Ambergrease	Allehaand .....	Pimento; <i>allspice</i>
Ametist.....	Amethyst	Aëddike .....	Vinegar

<i>Danish.</i>	<i>English.</i>	<i>Danish.</i>	<i>English.</i>
Amdam .....	Starch	Colophonium ...	Colophony
Balsam .....	Balsam	Columborod .....	Columbo root
Bernsteen .....	Amber	Cubeber .....	Cubebs
Bambusrör .....	Bamboo	Carlock .....	Isinglass
Bark gavaback ...	Bark ; <i>oak bark</i>	Citroner .....	Lemons
Byg .....	Barley	Campeschetræ ...	Logwood
Beryl .....	Beryl	China .....	Peruvian bark
Bezoar .....	Bezoar	Chinabark .....	Ditto
Bryant .....	Black lead	Dansk kummen	Caraway-seed
Blaa vitriol .....	Blue vitriol	Dyvelsdræk .....	Assafœtida
Blaat kobbervand	Ditto	Dadeler.....	Dates
Bræder .....	Boards	Dæler .....	Deals
Bolus .....	Bole	Diamant .....	Diamond
Buxbom .....	Box-wood	Duun .....	Down
Brændevin .....	Brandy	Drageblød.....	Dragon's blood
Brasilientræe ...	Brasil-wood	Desmier.....	Musk
Brasileholt .....	Brasiletto-wood	Drogue prunen...	Plums
Börster .....	Bristles	Ebentræe .....	Ebony
Boghvede .....	Buck-wheat	Ebenholt .....	Ditto
Böffelläder .....	Buff-skins	Edderduun .....	Eider-down
Böffelhuder .....	Ditto	Epsom salt .....	Epsom salt
Blomsterloger ...	Bulbs ; <i>flower roots</i>	Entian .....	Gentian
Bævorgel .....	Castoreum	Elastick gummi	Indian rubber
Bakedu.....	Cod-fish	Enebær.....	Juniper berries
Bomuld.....	Cotton wool	Elfenbeen .....	Ivory
Brækrod .....	Ipecacuanha	Elfensbeenværte	Ivory black
Bly, or blye.....	Lead	Eeg .....	Oak
Blaaholt .....	Logwood	Fiolenharpix ...	Colophony
Blodtræe .....	Nicaragua-wood	Fiere .....	Feathers ; bed-feathers
Bræknödder ...	Nux vomica	Fennikel .....	Fennel seed
Beg .....	Pitch	Fonugræk.....	Fenugreek
Bruneller .....	Prunes	Figen .....	Figs
Berlinerblaat ...	Prussian blue	Filk .....	Fish
Bimsteen .....	Pumice stone	Foervark .....	Furs
Bjergblaat .....	Verditer	Fiergummi .....	Indian rubber
Blyehvidt .....	White lead	Fransostræe .....	Lignum vitæ
Cardemomer ...	Cardamom	Fiskebeen .....	Whalefins ; <i>whale-bone</i>
Carmin .....	Carmine	Fitleer .....	Bole
Cassieblomstre ...	Cassia buds	Glaskoraller .....	Beads ; <i>glass beads, bugles</i>
Cassia .....	Cassia fistula	Glasperler .....	Ditto
Caviar .....	Caviare	Galmey .....	Calamine
Cedertræe .....	Cedar-wood		
China rod.....	China root		
Caneel .....	Cinnamon		
Cochenille .....	Cochineal		
Coloquinter .....	Colocynth		

<i>Danish.</i>	<i>English.</i>	<i>Danish.</i>	<i>English.</i>
Grønt kobberwand	Copperas	Kampher .....	Camphire
Gulholt .....	Fustic	Kapers .....	Capers
Galange .....	Galangal	Kappers .....	Ditto
Galdæbler.....	Galls	Karve .....	Caraway-seed
Ginseng .....	Ginseng	Kummen .....	Ditto
Guld.....	Gold	Karbuncle.....	Carbuncle
Granater .....	Granates ; <i>garnets</i>	Kobber vitriol ..	Blue vitriol
Granitsteen .....	Granite	Kongevand .....	Aqua regia
Gummi .....	Gum	Kastanier .....	Chesnuts
Gummilak .....	Lac ; <i>gum-lac</i>	Kleverfrø .....	Clover-seed
Glød .....	Litharge	Krydenelliker ..	Cloves
Grenstree .....	Nephritic-wood	Kobold .....	Cobalt
Geldyvel .....	Rum	Kakao .....	Cocoa
Giftrod .....	Snake root	Kokosnoodder ..	Cocoa nuts
Gurgumeye .....	Turmeric	Kalbliau .....	Cod-fish
		Kaffe .....	Coffee
Haar.....	Hair	Kobber .....	Copper
Hamp .....	Hemp	Koraller .....	Coral
Honning .....	Honey	Koriander .....	Coriander
Huder .....	Hides	Kork .....	Cork
Huuder.....	Ditto	Korn .....	Corn
Humle .....	Hops	Karneol.....	Cornelian.
Humble .....	Ditto	Kauris .....	Cowries
Huusblaas.....	Isinglass	Kummen .....	Cummin
Hörrfrøe .....	Linseed ; <i>flax-seed</i>	Kónrog .....	Lampblack
Herrolie .....	Linseed oil	Krap .....	Madder
Hirse.....	Millet	Krantsöine .....	Nux vomica
Havre .....	Oats	Kermesbær .....	Kermes
Hassel nødder ..	Small nuts ; <i>hazel-nuts</i>	Kina .....	Peruvian bark
Hvalrar.....	Spermaceti	Klude .....	Rags ..
Hvalsperme .....	Ditto	Lim .....	Glue,
Hvüd díptamrod	Dittany	Lüm .....	Ditto
Hor .....	Flax	Longuemare ..	Langwort.
Hærr.....	Ditto	Løder .....	Leather
Huede .....	Wheat	Limoner .....	Lemons.
Jalaprod .....	Jalap	Laerd .....	Linens.
Japanholtz .....	Japan wood	Länolie .....	Linseed oil
Japonish jord ..	Japan earth	Lakrizrod .....	Liquorice
Jaspis .....	Jasper	Lucernefrø .....	Lucerne-seed
Islands mos .....	Iceland moss	Mahagoni .....	Mahogany
Indigo .....	Indigo	Manna .....	Manna
Jern .....	Iron	Marmor .....	Marble
Jordæbler .....	Potatoes	Marmalada .....	Marmalade
Jödebeeg .....	Bitumen judaicum	Mastix .....	Mastich
Jodelüm .....	Ditto	Matten .....	Matts
Ingesaer .....	Ginger	Moor .....	Mohair

<i>Danish.</i>	<i>English.</i>	<i>Danish.</i>	<i>English.</i>
Muskatblommer	Mace	Rabarber .....	Rhubarb
Myrre .....	Myrrh	Roeolje .....	Rape oil
Muskadnodder...	Nutmegs	Roefrø .....	Rape-seed
Minie .....	Red lead	Rosentree .....	Rose-wood
Mandler .....	Almonds	Rosiner .....	Raisins
Moderkaneel ...	Cassia lignea	Roin .....	Rum
Meel .....	Flour	Rüs .....	Rice
		Rubin .....	Ruby
Nelliker .....	Cloves	Rug .....	Rye
Nyserod .....	Hellebore	Rodlog .....	Onions
		Rottekrud .....	Arsenic
Olje .....	Oil	Roercassia.....	Cassia fistula
Oliver .....	Olives		
Orcel .....	Orehella	Saffran .....	Saffron
Orchillie .....	Ditto	Safflor .....	Safflower
Orselje .....	Ditto	Sagogryn .....	Sago
Orperment .....	Orpiment	Salmiak.....	Sal ammoniac
Osters .....	Oysters	Saphir .....	Sapphire
Oxetunge .....	Anchusa	Salt .....	Salt
Orkanette.....	Ditto	Sarsa-parille.....	Sarsaparilla
Orlean .....	Annatto	Sassafras .....	Sassafras
Oel .....	Beer	Sandelholt .....	Sauanders
Oell .....	Ditto	Skammonium ..	Scammony
Ost .....	Cheese	Sensblader .....	Sena
Ormfro.....	Worm-seed	Smak .....	Sumac
		Sumak .....	Ditto
Paradiskorn .....	Grains of Paradise	Silke .....	Silk
Pelsverk .....	Furs	Sölv .....	Silver
Pokkentroe .....	Lignum vitæ	Skind .....	Skins; <i>fells</i>
Perlemor .....	Mother of pearl	Skifer .....	Slate
Perlainoder .....	Ditto	Smalt .....	Smalts
Pomeranser .....	Oranges	Sæbe .....	Soap
Perlaske .....	Pearl ashes	Spiren .....	Spars
Perler .....	Pearls	Spikenans.....	Spikenard
Palme olie .....	Palm oil	Siv.....	Rushes
Peber .....	Pepper	Svamp .....	Sponge
Piment .....	Pimento	Skille.....	Squill; <i>sea onion</i>
Pistacier .....	Pistacia nuts	Strandlögrod ..	Ditto
Pistacer.....	Ditto	Steenolje .....	Petrol; <i>oil of Petre</i>
Porphyr .....	Porphyry	Steen kull.....	Pit-coal; <i>stone-coal</i>
Pottaske .....	Pot ashes	Sild .....	Herrings
Patater .....	Potatoes	Sirup.....	Molasses
Pimpsteen .....	Punice-stone	Senep .....	Mustard-seed
Penne .....	Quills	Spidseglass .....	Antimony
		Skedevand .....	Aqua-fortis
Quassebark .....	Quassia	Skevand .....	Ditto
Queksölv .....	Quicksilver	Soda .....	Barilla
		Svoel .....	Brimstone

<i>Danish.</i>	<i>English.</i>
Spanske fluer ...	Cantharides
Skreitorsk .....	Cod-fish
Simaruba .....	Cortex simaroubæ
Smaragd .....	Emerald
Smerlgel .....	Emery
Sengefiere .....	Feathers; <i>bed-feathers</i>
Södrod .....	Gentian
Storax .....	Storax
Suker .....	Sugar
Sukkerkandi ...	Sugar-candy
Skildpaddeskal ...	Tortoise-shell
Sparask grönt ...	Verdigrise
Smör.....	Butter
Talg .....	Tallow
Tælg .....	Ditto
Tamarin .....	Tamarinds
Thee .....	Tea
Tiære .....	Tar
Tin .....	Tin
Tobak .....	Tobacco
Topas .....	Topaz
Terpentin .....	Turpentine
Tran .....	Train oil
Tripel .....	Tripoli
Trofler .....	Truffles

<i>Danish.</i>	<i>English.</i>
Turkisk hvede ...	Indian corn
Uld .....	Wool
Umbra .....	Umber
Ultramarin .....	Ultramarine
Uegte saffran ...	Safflower
Vau .....	Weld; <i>dyer's weed</i>
Vede .....	Wood
Veedaske .....	Weed ashes
Vermillion .....	Vermillion
Vaniller .....	Vanilla
Valkejord .....	Fuller's earth
Vin .....	Wine
Vox .....	Wax; <i>bee's wax</i>
Virak .....	Frankincense
Virog .....	Ditto
Vandelscharf ...	Gun-heder
Vintersbark .....	Cortex winteranus
Vinsteen .....	Argol; <i>tartar</i>
Vismut .....	Bismuth
Vilsrod .....	Orris root
Zibet.....	Civet
Zinober.....	Cinnabar
Zink .....	Zinc; <i>spelter</i>

SWEDISH.

<i>Swedish.</i>	<i>English.</i>
Agat .....	Agate
Agnus castus frö	Agnus castus-seed
Albaster .....	Alabaster
Aloë .....	Aloe
Aloëträd .....	Aloe-wood
Alun .....	Alum
Ambra, gra ambra	Ambergrease
Ametist.....	Amethyst
Asbest .....	Amianthus; <i>earth flax</i>
Ammifrö .....	Ammeos-seed
Amomfrö .....	Amomi-seed
Ansjovis .....	Anchovies
Anis .....	Aniseed

<i>Swedish.</i>	<i>English.</i>
Arack .....	Arrack; <i>rack</i>
Arsenik.....	Arsenic
Armenisk bolus	Bole
Aderdun .....	Eider-down
Attika .....	Vinegar
Aerter .....	Peas ...
Balsam .....	Balsam
Bambos .....	Bamboe
Bamborör .....	Ditto
Bernsten .....	Amber
Biugg .....	Barley
Beryl .....	Beryl
Bezoar .....	Bezoar

<i>Swedish.</i>	<i>English.</i>	<i>Swedish.</i>	<i>English.</i>
Blyerts .....	Black lead	Dun .....	Eider down
Bla vitriol .....	Blue vitriol	Dyfwelsträck ...	Assafoetida
Bräder .....	Boards	Desman.....	Musk
Bolus.....	Bole	Ebentræd .....	Ebony
Buxbom .....	Box-wood	Ebenholtz.....	Ditto
Brännvin .....	Brandy	Epsom salt .....	Epsom salt
Brasilia .....	Brasil-wood	Elastisk kada ...	Indian rubber
Brasiletta .....	Brasiletto-wood	Enbar .....	Juniper berries
Borst .....	Bristles	Elfenben .....	Ivory
Bohveite .....	Buckwheat	Elfenbensvärta...	Ivory black
Buffelhuder .....	Buff skins	Ek .....	Oak
Brodkumin .....	Caraway-seed	Fänkel .....	Fennel-seed
Bäsvergåll.....	Castoreum	Fenugrek .....	Fenugreek
Bakelau.....	Cod-fish	Fiken .....	Figs
Bomull .....	Cotton wool	Fjädrar.....	Feathers; <i>bed-fea-</i> <i>thers</i>
Bagsöta .....	Gentian	Federwerk .....	Furs
Bly .....	Lead	Fransosenholts ...	Lignum vitæ
Blodtråd .....	Nicaragua wood	Feberbark.....	Peruvian bark
Bruneller .....	Prunes	Fiskben.....	Whalebone
Berliner blatt ...	Prussian blue	Fiolkada .....	Colophony
Baniller .....	Vanilla	Galgazot .....	Galangal
Bergblatt .....	Verditer	Galläpplen .....	Galls
Blyhvitt .....	White lead	Gelbhoults .....	Fustic
Beek .....	Pitch	Ginseng .....	Gjnseng
Capris .....	Capers	Guld .....	Gold
Carmin .....	Carmine	Granater .....	Granates; <i>garnets</i>
Cassia .....	Cassia fistula	Granit .....	Granite
Cassia blomster	Cassia buds	Grasten .....	Ditto
Caviar .....	Caviare	Gummi .....	Gum
Cedertæd .....	Cedar-wood	Grön vitriol ...	Copperas
Chinarot .....	China root	Glaspärlor.....	Beads; <i>glass beads</i>
Cinnober .....	Cinnabar	Gallmeja .....	Calamine
Canel .....	Cinnamon	Gummilak .....	Lac; <i>gum lac</i>
Cobolt .....	Cobalt	Glitt .....	Litharge
Cochenille .....	Cochineal	Glette .....	Ditto
Coloquinter .....	Colocynth	Giftrot .....	Snake root
Columborot .....	Columbo-root	Grüne sapa .....	Soap
Cumin .....	Cummin	Gurkmaja .....	Turmeric
Citroner .....	Lemons	Gaude .....	Weld; <i>dyer's weed</i>
Campescheträ ...	Logwood	Har .....	Hair
China .....	Peruvian bark	Hampa .....	Hemp
Candisocer .....	Sugar-candy	Honing.....	Honey
Dadlar .....	Dates	Hudar .....	Hides
Demant.....	Diamond		
Diamant .....	Ditto		
Drakblod .....	Dragon's blood		



<i>Swedish.</i>	<i>English.</i>	<i>Swedish.</i>	<i>English.</i>
Humla .....	Hops	Krapp .....	Madder
Harts.....	Colophony	Kryddpeppar ...	Pimento; <i>allspice</i>
Huit diptan .....	Dittany	Klasten .....	Pumice-stone
Hör .....	Flax	Kummin .....	Caraway-seed
Husblas.....	Isinglass		
Hirs .....	Millet	Lim .....	Glue
Hafre .....	Oats	Lakritsrot .....	Liquorice
Hasselnötter .....	Small nuts; <i>hazel</i> <i>nuts</i>	Limoner .....	Lemons
Hasslök .....	Squill; <i>sea-onion</i>	Linfrö .....	Linseed; flax-seed
Hvede .....	Wheat	Linolja .....	Linseed oil
		Lüder .....	Leather
Jalaprot .....	Jalap	Lucernefrö .....	Lucerne-seed
Japanisk jord ...	Japan earth	Lin .....	Flax
Jappan .....	Japan-wood		
Jaspis .....	Jasper	Mahagony .....	Mahogany
Indigo .....	Indigo	Manna .....	Manna
Jern .....	Iron	Marmor .....	Marble
Jordpäron.....	Potatoes	Moire .....	Mohair
Judebeck .....	Bitumen judaicum	Myrha .....	Myrrh
Jerntvitriol .....	Copperas	Muskot .....	Nutmegs
Ingefara .....	Ginger	Mönja .....	Red lead
		Mandlar .....	Almonds
Kapris .....	Capers	Modercanel .....	Cassia lignea
Karf .....	Caraway-seed	Mjöl .....	Flour
Karbunkel .....	Carbuncle	Muskottblomma	Mace
Kardemummor..	Cardamom		
Kaviar .....	Caviare	Olja .....	Oil
Kastanier .....	Chesnuts	Oliver .....	Olives
Kopper vitriol ...	Blue vitriol	Onyx .....	Onyx
Kamfer .....	Camphire	Orsilja .....	Orchella
Kungsvatten ...	Aqua regia	Operment .....	Orpiment
Korn .....	Barley	Ostron .....	Oysters
Kryddeneglikor	Cloves	Oägt saffran .....	Safflower
Kakao .....	Cocoa	Oxtunga .....	Anchusa
Kabeljo.....	Cod-fish	Orleana .....	Annatto
Koffe .....	Coffee	Oel .....	Beer
Koppar .....	Copper	Ost .....	Cheese
Koraller .....	Coral		
Koriander.....	Coriander	Palm olja .....	Palm oil
Korkträ.....	Cork	Parlor .....	Pearls
Karneol .....	Cornelian	Perlaska .....	Pearl ashes
Kauris .....	Cowries	Peppar .....	Pepper
Kobeber .....	Cubebs	Pistacier .....	Pistacia-nuts
Kummin .....	Cummin	Porphyry .....	Porphyry
Kräkrot.....	Ipecacuanha	Potaska .....	Pot ashes
Kermesbær .....	Kermes	Pomcranser .....	Oranges
Kimrök.....	Lampblack	Perlmo .....	Mother of pearl
		Purggerrot .....	Jalap

<i>Swedish.</i>	<i>English.</i>	<i>Swedish.</i>	<i>English.</i>
Pockenholts .....	Lignum vitæ	Skilla.....	Squill; sea-onion
Potatos .....	Potatoes	Stärkelse .....	Starch
Pimsten.....	Pumice-stone	Storax .....	Storax
Pennor .....	Quills	Socket .....	Sugar
Paradiskorn .....	Grains of Paradise	Socket-candi ..	Sugar-candy
Prustrot .....	Hellebore	Sköldpadda .....	Tortoise-shell
Pelsverk .....	Furs	Sirap .....	Molasses
Quassiætræd.....	Quassia	Senap .....	Mustard seed
Quicksilfver .....	Quicksilver	Stenolja.....	Petrol; oil of peter
Rabarber .....	Rhubarb	Stenkol .....	Pit-coal, stone-coal
Ris .....	Rice	Spets-glans .....	Antimony
Rofolja .....	Rape oil	Skedwatten .....	Aqua fortis
Roffrö .....	Rape-seed	Soda .....	Barilla
Rom .....	Rum	Souda .....	Ditto
Ruben .....	Ruby	Sill .....	Herrings
Russin .....	Raisins	Svafel .....	Brimstone
Rum .....	Rum	Smör .....	Butter
Rag .....	Rye	Spanska flugor..	Cantharides
Räfkaka .....	Nux vomica	Säd .....	Corn
Raf .....	Amber	Spanmal .....	Ditto
Rack.....	Arrack; rack	Simaruba .....	Cortex simarubæ
Rotpulver .....	Arsenic	Spiskumin .....	Cummin
Rærcassia .....	Cassia fistula	Smaragd .....	Emerald
Rokosnoetter ..	Cocoa-nuts	Smirgel.....	Emery
Rödlök .....	Onions	Spansk gröna ..	Vedigrise
Saf .....	Rushes	Talg .....	Tallow
Safflor .....	Safflower	Tamarind .....	Tamariuds
Saffran .....	Saffron	Tjära.....	Tar
Sagogryn .....	Sago	Thee .....	Tea
Salmiak .....	Sal ammoniac	Tenn .....	Tin
Salt .....	Salt	Tobak .....	Tobacco
Sarsaparilla .....	Sarsaparilla	Topas .....	Topaz
Sassafras .....	Sassafras	Tran .....	Train oil
Sandel .....	Saunders	Trippel .....	Tripoli
Scanmonium ..	Scammony	Terpentin.....	Turpentine
Sennets bladen..	Sena	Tval .....	Soap
Smack .....	Sumac	Turkiskt hvede..	Indian corn
Sumack.....	Ditto	Tilijor .....	Deals
Silke .....	Silk	Tjan .....	Down
Silfver .....	Silver	Ull .....	Wool
Skinn .....	Skins; fells	Ultramarin .....	Ultramarine
Skifver .....	Slate	Umbra .....	Umber
Smalt .....	Smalts	Valraf .....	Spermaceti
Spirar .....	Spars	Vallrat .....	Ditto
Svamp .....	Spunge	Vax .....	Wax; bees' wax

<i>Swedish.</i>	<i>English.</i>	<i>Swedish.</i>	<i>English.</i>
Veedaska .....	Weed ashes	Virack .....	Frankincense
Vejde .....	Woad	Valklera .....	Fuller's earth
Vin .....	Wine	Valkjord .....	Ditto
Vermillon .....	Vermillion	Winsten .....	Argol; tartar
Vismut .....	Bismuth	Zibet .....	Civet
Vapling-frö .....	Clover-seed	Zink .....	Zinc; spelter
Vintersbark .....	Cortex winteranus		
Veirauch .....	Frankincense		

POLISH.

<i>Polish.</i>	<i>English.</i>	<i>Polish.</i>	<i>English.</i>
Agat .....	Agate	Cukier lodowaty .....	Sugar candy
Alabaster .....	Alabaster	Cyna .....	Tin
Aloa .....	Aloe	Cynek .....	Zinc; spelter
Aloes .....	Ditto	Czarzie laino .....	Assafoetida
Ambra .....	Ambergrease	Deski .....	Boards
Anyz .....	Aniseed	Daktyle .....	Dates
Arak .....	Arrack; <i>rack</i>	Dymant .....	Diamond
Arsenik .....	Arsenic	Dyptan biały .....	Dittany
Aurypigment .....	Orpiment	Dab .....	Oak
Aloe drzewko .....	Aloe		
Balsam .....	Balsam	Farbieriskie dr- zewko .....	Fustic
Bezoar kamien .....	Bezoar	Futro .....	Furs
Bursztyn .....	Amber	Futrowizna .....	Ditto
Bukspan .....	Box-wood	Farbownick .....	Weld; <i>dyers' weed</i>
Brezylia .....	Brasil wood	Fiszbin .....	Whalefins; <i>whale- bone</i>
Bawelna .....	Cotton wool	Fistula .....	Cassia fistula
Bielidło .....	White lead	Fiki .....	Figs
Blewas .....	Ditto		
Czerwieniec .....	Anchusa; <i>alkanet</i>	Galgan .....	Galangal
Cedr .....	Cedar-wood	Galas .....	Galls
Chyna korzen .....	China root	Goryozaka .....	Gentian
Cynober .....	Cinnabar	Granatki .....	Granates; <i>garnets</i>
Cynamon .....	Cinnamon	Gummi .....	Gum
Cochenilla .....	Cochineal	Gummi gotta .....	Gamboge
Ciemierzyea .....	Hellebore	Gumalaka .....	Lac; <i>gum lac</i>
Chmiel .....	Hops	Gwaiak .....	Lignum vitæ
Cebula .....	Onions	Gleta .....	Litharge
Cyndal .....	Saunders	Gleyte .....	Ditto
Cobula zamorska .....	Squill; <i>sea onion</i>	Gryka .....	Buck wheat
Cukier .....	Sugar		

<i>Polish.</i>	<i>English.</i>	<i>Polish.</i>	<i>English.</i>
Galmaia .....	Calamine	Koralki .....	Coral
Galman.....	Ditto	Koralü .....	Ditto
Gozdziki kramne	Cloves	Koryander .....	Coriander
Gorrozyka .....	Mustard-seed	Korck .....	Cork
Groch .....	Peas	Kubeby.....	Cubebes
Garbarskie drzew-		Kmin .....	Cummin
ko .....	Sumac	Kmin kramny ...	Ditto
Gebka .....	Spunge	Kopr colowsky ...	Fennel-seed
Gryszpan .....	Verdigrise	Kadzedlo .....	Frankincense
Gorzalka .....	Brandy	Kosmacizna .....	Furs
		Kalkan .....	Galangal
Halun .....	Alum	Kley .....	Glue
Hiszpanskie .....	Cantharides	Konop .....	Hemp
Herbata .....	Tea	Klei-ryby.....	Isinglass
Heban .....	Ebony	Karluk .....	Ditto
		Kampesza .....	Logwood
Jalowiec jagody	Juniper berries	Kwinkwinna.....	Peruvian bark
Iniane .....	Linseed; <i>flax seed</i>	Krokos .....	Safflower
Jalapa .....	Jalap	Krochmal.....	Starch
Juspid kamien ...	Jasper		
Indych .....	Indigo	Lakrycia .....	Liquorice
Imbier .....	Ginger	Limonü .....	Lemons
Jecymien .....	Barley	Len .....	Flax
Ikra .....	Caviare	Lupny kamien ...	Slate
Jedwab.....	Silk	Laskowy orzech	Small nuts
		Lazur .....	Smalts
Kamfora .....	Camphire		
Kantarjdy .....	Cantharides	Markazyt cynowy	Bismuth
Kapray .....	Capers	Migdal .....	Almonds
Karuy .....	Caraway-seed	Maslo .....	Butter
Kmin polny .....	Ditto	Miedz .....	Copper
Karbunkul .....	Carbuncle	Maka .....	Flour
Kardamom .....	Cardamom	Miod.....	Honey
Karmin .....	Carmine	Muskatowy kwiat	Macc
Kasztany .....	Chesnuts	Marzana .....	Madder
Koniecz .....	Clover-seed	Manna .....	Manna
Konik .....	Ditto	Marmur .....	Marble
Kobolt .....	Cobalt	Mastyks .....	Mastich
Kakaowry orzech	Cocoa	Mora.....	Mohair
Kokos .....	Cocoa-nuts	Macia perlowa ...	Mother of pearl
Kawa .....	Coffee	Mirra .....	Myrrh
Kolokwintida ...	Colocynth	Muszatowa galka	Nutmegs
Kalofonia .....	Colophony	Mech farbierski	Orchella
Koperwas y zelaza	Copperas	Minia .....	Red lead
Korolki sklane ...	Beads; <i>glass beads</i>	Macznika .....	Sumac
Klej ziemsky ...	Bitumen judaicum	Mydlo .....	Soap
Koperwasycypryys		Muchy .....	Cantharides
kimodri.....	Blue vitriol		

<i>Polish.</i>	<i>English.</i>	<i>Polish.</i>	<i>English.</i>
Oeet .....	Vinegar	Sene .....	Sena
Ostrzyzindyyski .....	Turmeric	Senna .....	Ditto
Olbrod .....	Spermaceti	Szafranpolny ...	Safflower
Ostrygi .....	Oysters	Szafran .....	Saffron
Oley .....	Oil	Szafir .....	Sapphire
Oliwki .....	Olives	Srebro .....	Silver
Orlean .....	Annatto	Skory .....	Skins ; <i>fells</i>
Olowek .....	Black lead	Spermaceti .....	Spermaceti
Olow .....	Lead	Styrax .....	Storaz
Oley lniany .....	Linseed oil	Skalney oley.....	Petrol
Proso.....	Millet	Smola gesta .....	Tar
Pizmo .....	Musk	Skorupa zolwia .....	Tortoise-shell
Pomerancy .....	Oranges	Szafranica .....	Turmeric
Perly.....	Pearls	Sinilo .....	Woad
Pieprz .....	Pepper	Spizglas .....	Antimony
Pieprz z Jamaki .....	Pimento	Serwaser .....	Aqua fortis
Pistaoye .....	Pistacia nuts	Stychwaser .....	Ditto
Porfir .....	Porphyry	Smrodzieniec ...	Assafœtida
Potasz .....	Pot ashes	Siarka .....	Brimstone
Piora .....	Quills	Szezeciny.....	Bristles
Pipy .....	Ditto	Stroybobowry ...	Castoreum
Pszenica .....	Wheat	Ser .....	Cheese
Pirvo.....	Beer	Sardyk .....	Cornelian
Pohanca .....	Wheat	Stnocza krew ...	Dragons' blood
Puchy .....	Down	Szmaragd .....	Emerald
Puch bialozorowy .....	Eider-dow	Szmergiel.....	Emery
Piora .....	Feathers ; <i>bed-feathers</i>	Sledzie .....	Herrings
Reubarbarum ...	Rhubarb	Skory .....	Hides
Rum tureckie ...	Ditto	Sloniowa kosc ...	Ivory
Ryz .....	Rice	Szarlatne jagody .....	Kermes
Rubin .....	Ruby	Sadz .....	Lampblack
Rez .....	Rye	Siemie .....	Linseed
Rozynki .....	Raisins	Slodki korzen ...	Liquorice
Rezepnica .....	Rape-seed	Smola .....	Pitch
Roku.....	Annatto	Tabaka .....	Tobacco
Rozinki mete, drobne .....	Currants	Topazyn .....	Topaz
Rzemien .....	Leather	Te .....	Tea
Salmiak.....	Sal ammoniac	Terpentyna .....	Turpentine
Salmoniak.....	Ditto	Tesaunoi kamen .....	Slate
Sol .....	Salt	Tscherepiza .....	Ditto
Saletra .....	Saltpetre	Tatarca .....	Buckwheat
Salnitra .....	Ditto	Tarcice .....	Deals
Sasafras.....	Sassafras	Umbra .....	Umber
		Ultramaryna ...	Ultramarine
		Waystin .....	Argol ; <i>tartar</i>

<i>Polish.</i>	<i>English.</i>	<i>Polish.</i>	<i>English.</i>
Wodka .....	Brandy	Zuzel kamienna	Pumice-stone
Wlosy .....	Hair	Zlotokost .....	Orpiment
Wronie oko .....	Nux vomica	Zywe srebro.....	Quicksilver
Wosk .....	Wax; <i>bees' wax</i>	Zybet .....	Civet
Welna .....	Wool	Zboze .....	Corn
Wino .....	Wine	Zloto .....	Gold
Zits .....	Rye	Zelazo .....	Iron

## RUSSIAN.

<i>Russian.</i>	<i>English.</i>	<i>Russian.</i>	<i>English.</i>
Agat .....	Agate	Doski .....	Deals; <i>boards</i>
Alabastr .....	Alabaster	Dikiu timon .....	Caraway-seed
Aloe derewo ...	Aloewood	Drakonowa krow	Dragon's-blood
Antshofischi .....	Anchovies	Dub .....	Oak
Anis .....	Aniseed	Degot .....	Tar
Antimonia .....	Antimony	Ebenowoc derewo	Ebony
Arak .....	Arrack; <i>ruck</i>	Enzian .....	Gentian
Asfalt .....	Bitumen judaicum	Finike .....	Dates
Almas .....	Diamond	Galneja .....	Calamine
Agatschupuch ...	Eider-down	Gretscha .....	Buckwheat
Arsel .....	Orchella	Gwodzika .....	Cloves
Auripigment ...	Orpiment	Gummi gut .....	Gamboge
Anglinskoiperez	Pimento	Gummi .....	Gum
Banila .....	Vanilla	Gummilak .....	Lac; <i>gum lac</i>
Bjeliliu .....	White lead	Glet .....	Litharge
Balsam .....	Balsam	Granatnoi-kamen	Granates; <i>garnets</i>
Bisser i dekui ...	Beads; <i>glass beads</i>	Gortschiza .....	Mustard-seed
Besoar .....	Bezoar	Goroch .....	Peas
Bleierz .....	Black lead	Hischpanskije mu-	
Brasilskoe derews	Brasil-wood	chi.....	Cantharides
Bobrowaja struga	Castoreum	Jar .....	Verdigrise
Badan .....	Dittany	Jachant.....	Sapphire
Berri.....	Kermes	Jar .....	Rye
Bakaut .....	Lignum vitæ	Jachont tscher-	
Chljeb .....	Corn	wtschatoi .....	Ruby
Chlobtschataja bu-		Issum .....	Raisins
maga .....	Cotton wool	Jabluki .....	Potatoes
Chmel .....	Hops		
China .....	Peruvian bark		
Chinchina.....	Ditto		

<i>Russian.</i>	<i>English.</i>	<i>Russian.</i>	<i>English.</i>
Jantar .....	Amber	Kost slonowja ...	Ivory
Jatschmen .....	Barley	Kosha .....	Leather
Jidowskaia smola	Bitumen judaicum	Koren soledkowoi	Liquorice
Jamschit .....	Box-wood	Kampetschkoe	
Ikra .....	Caviare	derewo .....	Logwood
Isumrud .....	Emerald	Krapp .....	Madder
Jubia.....	Ginger	Kubikowataja ..	Alquifou
Jalap .....	Jalap	Kwassu .....	Alum
Jaschma .....	Jasper	Kamennoe masslo	Petrol; <i>oil of petre</i>
Indigo .....	Indigo	Kartoflü .....	Potatoes
		Koshü .....	Skins; fells
Kamen kalaminar	Calamine	Kruchmal .....	Starch
Kamfora .....	Camphire	Kost tscherepa-	
Kanfora .....	Ditto	chowaja .....	Tortoise-shell
Kapers zü .....	Capers	Kurkuma .....	Turmeric
Karbunkel .....	Carbuncle		
Kardamom .....	Cardamon	Len .....	Flax
Karmin.....	Carmine	Lon .....	Ditto
Kassia .....	Cassia fistula	Ladonprostoi ...	Frankincense
Kaschtanü .....	Chesnuts	Limonü.....	Lemons
Kakao .....	Cocoa	Lnjanoe masslo	Linseed oil
Kanifol .....	Calophony	Luk .....	Onions
Kedr.....	Cedar-wood	Lasor Berlinskaja	Prussian blue
Kinowar .....	Cinnabar	Lasor .....	Smalts
Koren tschapu-		Luk morskü .....	Squill; <i>sea onion</i>
tinskü .....	China root	Ledener .....	Sugar candy
Koriza .....	Cinnamon	Ljernak .....	Woad
Kobolt .....	Cobalt		
Konssenel.....	Cochineal	Manna .....	Manna
Kokos .....	Cocoa-nuts	Mariona .....	Madder
Kofé .....	Coffee	Muskatnoi zwet	Mace
Kolozintü .....	Colocynth	Maslo .....	Oil
Korallü .....	Coral	Mindal .....	Almonds
Koriander .....	Coriander	Müschjak .....	Arsenic
Korkowoe dneueo	Cork	Maslo korowe...	Butter
Krasnoi nijed ..	Copper	Mjed .....	Copper
Kauris .....	Cowries	Muska .....	Flour
Kubebü.....	Cubebs	Mächkaja ruchläd	Furs
Kmin .....	Cummin	Marmor .....	Marble
Korinka .....	Currants	Med .....	Honey
Kalgan .....	Galangal	Moschshuchü ...	Juniper berries
Klei .....	Glue	Mastika .....	Mastich
Konapli.....	Hemp	Muscus .....	Musk
Konopel .....	Ditto	Muskatnüe ores-	
Koshi .....	Hides	chki .....	Nutmegs
Krutik .....	Indigo	Mülo .....	Soap
Klei rübüi.....	Isinglass		
Karluk .....	Ditto	Naschatür.....	Sal ammoniac

<i>Russian.</i>	<i>English.</i>	<i>Russian.</i>	<i>English.</i>
Nashdak .....	Emery	Scherst .....	Hair; <i>hair of animals</i>
Obür .....	Mohair	Seld .....	Herrings
Orlean .....	Annatto	Sheleso .....	Iron
Opock .....	Currants	Sasha .....	Lampblack
Owes.....	Oats	Swinez .....	Lead
Oliwkü .....	Olives	Somja lenjanoe...	Linseed, <i>flax seed</i>
Opermente .....	Orpiment	Salenüi kuparos	Copperas
Olowa .....	Tin	Shemtschufhnaja,	
Orechi .....	Small nuts; <i>hazel-nuts</i>	rakowina .....	Mother of pearl
		Shemtschug .....	Pearls
Pirvo .....	Beer	Smolo gustaja ...	Pitch
Puch .....	Down	Semlenüe .....	Potatoes
Pera .....	Feathers; <i>bed-feathers</i>	Stwoli .....	Quills
Proszo .....	Millet	Surik.....	Red lead
Patoka sacharnaja	Molasses	Sel.....	Rye
Pomeranczu ...	Oranges	Schafraan .....	Saffran
Perez .....	Pepper	Sol.....	Salt
Porfir .....	Porphyry	Senitra .....	Saltpetre
Potasch .....	Pot ashes	Sasafras.....	Sassafras
Penza .....	Pumice stone	Sandal .....	Saunders
Pera .....	Quills	Senetnüe listü ...	Sena
Pscheno sarazins-		Sumak .....	Shumac
koe .....	Rice	Schelk .....	Silk
Polewoi .....	Safflower	Serebro .....	Silver
Prostoi schafraan	Ditto	Spermazet .....	Spermaceti
Pscheniza.....	Wheat	Stirax .....	Storax
		Sachar .....	Sugar
Raiskie ziarnka...	Grains of Paradise	Salo topleno .....	Tallow
Räpnoe.....	Rape oil	Smold shitkaja ...	Tar
Räpnoe sämjä ...	Rape-seed	Salo worwannoe	Train oil
Rtut .....	Quicksilver	Skipidar .....	Turpentine
Rewen .....	Rhubarb	Scherst .....	Wool
Rom .....	Rum	Schpiauter .....	Zinc; spelter
Rosch .....	Rye		
		Tabak .....	Tobacco
Sabir .....	Aloe	Tschernsi kran-	
Solianka .....	Barilla	dasch .....	Black lead
Sinei kuperos ...	Blue vitriol	Trilisnik .....	Clover-seed
Seleniza .....	Box-wood	Timon .....	Cummin
Sjera .....	Brimstone	Tschernilnüe ores-	
Sür .....	Cheese	chki .....	Galls
Seredolük .....	Cornelian	Tschemeriza ...	Hellebore
Schifförnajaglina	Fullers' earth	Tureskoichljeb ...	Indian corn,
Sheltoe derewe...	Fustic	Tschai .....	Tea
Soloto .....	Gold	Topas .....	Topaz
		Ukzus .....	Vinegar



<i>Russian.</i>	<i>English.</i>
Umbra .....	Umber
Ultramarin .....	Ultramarine
Ussú kitowüe ...	Whalebone
Ustrizu .....	Oysters
Ugolje kamennoe	Pit-coal
Wino gradnoe	
wine .....	Wine
Winnüa jagode...	Figs
Wino .....	Wine, or brandy
Wismut .....	Bismuth
Winnüi kamen...	Argol; tartar

<i>Russian.</i>	<i>English.</i>
Wodkakrebkaja	Aqua-fortis
Wolowoi jusük...	Anchusa
Woloskoi ukrop	Fennel-seed
Wolossü .....	Hair; <i>human hair</i>
Wolna .....	Wool
Wosk .....	Wax; <i>bees' wax</i>
Worwan .....	Train oil
Wou .....	Weld; <i>dyer's weed</i>
Zibet.....	Civet
Zülibuchü.....	Nux vomica

LATIN.

<i>Latin.</i>	<i>English.</i>
Acaciæ succus...	Accacia
Agaricus .....	Agaric
Achantes .....	Agate
Agni-casti semen	Agnus castus-seed
Alasbastrites.....	Alabaster
Amygdala .....	Almonds
Aloë .....	Aloe
Alumen .....	Alum
Ambra; ambra- grisia.....	Ambergrease
Amethystus .....	Amethyst
Amiantus .....	Amianthus; earth flax
Amomum verum	Ammeos-seed
Amomum vul- gare .....	Amomi-seed
Ampelion .....	Ampelites
Ampelis .....	Ditto
Alcanna .....	Anchusa; alkanet
Angelica .....	Angelica root
Anisum.....	Aniseed
Antimonium ..	Antimony
Aqua fortis .....	Aqua fortis
Aqua regia .....	Aqua regia
Arsenicum .....	Arsenic
Asafetida.....	Assafetida
Arundo Bambos	Bamboe
Asphaltum .....	Bitumen Judia- cum.....

<i>Latin.</i>	<i>English.</i>
Adamas .....	Diamond
Amomum Zingi- ber .....	Ginger
Aurum .....	Gold
Amomum grana paradise .....	Grains of Paradise
Allium cepa.....	Onions
Aurantia mala...	Oranges
Auripigmentum	Orpiment
Argentum .....	Silver
Avellanæ .....	Small Nuts
Amylum .....	Starch
Acetum .....	Vinegar
Amomum .....	Cardamom
Avenæ .....	Oats
Ærugo .....	Verdigrise
Bixa.....	Annatto
Balsamum .....	Balsam
Beryllus .....	Beryl
Bezoar.....	Bezoar
Bismuthum .....	Bismuth
Bitumen Judia- cum .....	Jew's Pitch
Bolus Armenia- ca rubra .....	Bole
Bohemica .....	Ditto
Buxus .....	Box-wood
Butyrum .....	Butter

<i>Latin.</i>	<i>English.</i>	<i>Latin.</i>	<i>English.</i>
Bombax .....	Cotton Wool	Capsicum .....	Guinea Pepper
Bacca conchæ...	Mother of Pearl	Capelli .....	Hair
Brassica Chinen-		Cannabis .....	Hemp
sis.....	Rape-seed	Corium .....	Leather
Cerevisia .....	Beer	Concha margari-	
Cyprinum .....	Blue Vitriol	tifera .....	Mother of Pearl
Cadmia .....	Calamine	China .....	Peruvian bark
Calamina .....	Ditto	Cortex Peruvia-	
Camphora .....	Camphire	nus .....	Ditto
Cantharides .....	Cantharides	Ciners Clavellati	Potashes
Capparis .....	Capers	Ceruleum Bero-	
Carvi .....	Caraway-seed	linense .....	Prussian blue
Carbunculus ...	Carbuncle	Carthamus tinc-	
Cardamomum...	Cardamom	torius .....	Safflower
Carminium .....	Carmine	Crocus .....	Saffron
Cassia Fistula ...	Cassia Fistula	Contrayerva.....	Snake root
Cassia Lignea ...	Cassia Lignea	Curcuma .....	'Turmeric
Castoreum .....	Castoreum	Cæruleum mon-	
Caviarium .....	Caviare	tanum' .....	Verditer
Cedrus .....	Cedar-wood	Cera.....	Wax; <i>bees-wax</i>
Caseus .....	Cheese	Costa sartoria ...	Whalefins; <i>whale</i>
Castanea.....	Chesnuts	bone	
Cinnabari.....	Cinnabar	Cerusa .....	White lead
Cinnamomum ...	Cinnamon	Dactyli .....	Dates
Canella .....	Ditto	Dictamnus albus	Dittany
Caryophylla.....	Cloves	Ebur .....	Ivory
Cobaltum.....	Cobalt	Electrum .....	Amber
Cochinella.....	Cochineal	Encerasicholi.....	Anchovies
Cocci-cactus ...	Ditto	Ebenus.....	Ebony
Cacao .....	Cocoa	Fagopyrum .....	Buck wheat
Coffea .....	Coffee	Flores cassiæ ...	Cassia buds
Caffea .....	Ditto	Fruentum ...	Corn; wheat
Colocyntidum		Fraxinella .....	Dittany
poma .....	Colocynth	Fœniculum .....	Fennel-seed
Colophonium ...	Colophony	Fœnum græcum	Fenugreek
Columbo .....	Columba Root	Fici .....	Figs
Columbæ radix	Ditto	Farina .....	Flour
Cuprum .....	Copper	Ferrum .....	Iron
Corallina .....	Coral	Fuligo .....	Lampblack
Coriandrum sati-		Galena .....	Alquifou
vum .....	Coriander	Gadus morhua...	Cod-fish
Carnocolus Sardus	Cornelian	Gossypium.....	Cotton-wool
Cubebæ .....	Cubeb	Galanga .....	Galnagal
Cuminum .....	Cumin	Gallæ .....	Galls
Caricæ .....	Figs		
Cambogia .....	Gamboge		
Colla .....	Glue		

<i>Latin.</i>	<i>English.</i>
Gummi guttæ ...	Gamboge
Gutta gamba ...	Ditto
Gentiana .....	Gentian
Ginseng .....	Ginseng
Gluten .....	Glue
Granati .....	Granates; <i>Garnets</i>
Granita .....	Granite
Gummi .....	Gum
Gummi elasti- cum .....	Indian rubber
Grana chermes	Kermes
Gummi laccæ ...	Lac; <i>gum lac</i>
Guaiaicum .....	Lignum vitæ
Glycyrrhiza ...	Liquorice
Glastum .....	Woad
Hordeum .....	Barley
Helleborus .....	Hellebore
Humulus .....	Hops
Hæmatoxyllum	Logwood
Hydrargyrum ...	Quicksilver
Jalappa .....	Jalap
Jaspis .....	Jasper
Indigo .....	Indigo
Ichthyocolla ...	Isinglass
Juniperi bacca	Juniper berries
Lignum aloës ...	Aloe-wood
Lignum brasilia- num .....	Brasil-wood
Lapis calaminaris	Calamine
Linum .....	Flax
Lupulus .....	Hops
Lini semen .....	Linseed; <i>flax-seed</i>
Lithargyros .....	Litharge
Lithanthrax .....	Pit-coal
Lignum quassia	Quassia
Lana .....	Wool
Limonia .....	Lemons
Mel .....	Honey
Mars .....	Iron
Macis .....	Mace
Magnesia alba ...	Magnesia
Manna .....	Manna
Marmor .....	Marble
Mastix .....	Mastich

<i>Latin.</i>	<i>English.</i>
Milium .....	Millet
Moschus .....	Musk
Myrrha .....	Myrrh
Margaritæ .....	Pearls
Minium .....	Red lead
Nuces indicæ ...	Cocoa nuts
Nux moschata ...	Nutmegs
Nitrum .....	Saltpetre
Oleum .....	Oil
Orellana .....	Annatto
Oleum palma christi .....	Castor oil
Oleum recini ...	Ditto
Olibanum .....	Frankincense
Oleum lini .....	Linseed oil
Olivæ .....	Olives
Onyx .....	Onyx
Ostreæ .....	Oysters
Oleum palme ve- rum .....	Palm Oil
Oryza .....	Rice
Oleum piscinum	Train oil
Plumbago .....	Black lead
Passulæ corinthi- acæ .....	Currants
Plumæ .....	Down
Panax .....	Ginseng
Panicum milia- ceum .....	Millet
Pisæ .....	Pease
Piper .....	Pepper
Piper jamaicense	Pimento
Petroleum .....	Petrol; <i>oil of pe- tre</i>
Pistaciæ .....	Pistacia nuts
Pix .....	Pitch
Porphyrius .....	Porphyry
Pumex .....	Pumice stone
Pix liquida .....	Tar
Plumbum .....	Lead
Quadum .....	Woad
Quercus .....	Oak
Quinquina .....	Peruvian bark

<i>Latin.</i>	<i>English.</i>	<i>Latin.</i>	<i>English.</i>
Romanum .....	Blue vitriol	Spongia .....	Sponge
Radix chinæ ...	China root	Scilla .....	Squill
Radix ipecacu- annæ .....	Ipecacuanha	Squilla .....	Ditto
Rubia tinctorum	Madder	Styrax .....	Storax
Rocella .....	Orchella	Saccharum .....	Sugar
Rizum .....	Rice	Saccharum crys- tallinum .....	Sugar candy
Rhiz .....	Rhubarb	Sebum .....	Tallow
Rhabarbarum ...	Ditto	Stannum .....	Tin
Rheum palma- tum .....	Ditto	Terra orelana ...	Annatto
Rhodium .....	Rose wood	Tartarum .....	Argol
Rubinus .....	Ruby	Trifolium.....	Clover-seed
Rhus coriario- rum .....	Sumac	Thus.....	Frankincense
Reseda lutcola...	Weld; dyer's- weed	Terra fullonum	Fuller's earth
Sanguis draconis	Dragon's-blood	Terra Japonica	Japan earth
Smaragdus .....	Emerald	Tubera Virginia- na esculenta ...	Potatoes
Smiris .....	Emery	Tamarindos .....	Tamarinds
Succinum .....	Amber	Thea.....	Tea
Sulphur .....	Brimstone	Tabacum .....	Tobacco
Smilax .....	China root	Topazius .....	Topaz
Suber .....	Cork	Testudinis testa	Tortoise-shell
Sal mirabile glau- beri .....	Glauber salts	Terra merila ...	Turmeric
Sinapis.....	Mustard-seed	Terebinthina ...	Turpentine
Sacale .....	Rye	Testum .....	Whale-fins; <i>whale</i> <i>bone</i>
Saccharum sa- turni.....	Sugar of lead	Triticum .....	Wheat
Saffranum .....	Safflower	Umbra .....	Umber
Sal ammoniacum	Sal ammoniac	Ultramarinium	Ultramarine
Sal .....	Salt	Uve passe.....	Raisins
Sapphirus .....	Sapphire	Valonea .....	Valonea
Sassafras .....	Sassafras	Vanilla .....	Vanilla
Santalum .....	Saunders	Viride æris .....	Verdigrise
Scammonium ...	Scammony	Vinum .....	Wine
Sennæ folia .....	Sena	Veneris .....	Blue vitriol
Sericum .....	Silk	Vitriolum cœru- leum.....	Ditto
Schistus ardesia	Slate	Vitriolum mar- tis .....	Copperas
Smaltum .....	Smalts	Zibethum .....	Civet
Serpentaria .....	Snake root	Zincum .....	Zinc; <i>spelter</i>
Sapo .....	Soap		
Spermaceti .....	Spermaceti		

THE  
**DICTIONARY**  
OF  
**MERCHANDIZE.**

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A.

ACACIA. (F. *Suc d' Acacia*; G. *Egyptischer Schlehe-dorn, Schlehen-safft*; I. *Acacia*; S. *Acacia verdadera, ó de Levante*; P. *Acacia*; L. *Acaciæ succus.*)

**A**N inspissated juice, obtained by pressure, from the kernels of the pods of the *acacia vera*, a thorn-shrub growing in Egypt and Arabia. It is of a tan colour, smooth, shining, and of a disagreeable taste; and comes to us from the Levant, made up in round balls, covered with fine bladders.

The German acacia, being nothing more than the juice of unripe sloes boiled to a solid consistence, and put up in bladders, is frequently sold for the true acacia. This imposition may easily be distinguished, by the colour of the German acacia, which is as black as Spanish-liquorice. It is used externally and internally for medical purposes.

ACAJOU NUTS; (F. *Noix d' Acajou*; G. *Akajunüsse*;) come from Jamaica, and other islands in the West Indies about the same latitude.

The acajou-tree (*anacardium*), in a good soil, spreads to the size of an English walnut-tree, which it much resembles, in the shape and smell of the leaves. It produces a large fruit like a pear, except that the greater end is towards the stalk. At the small end of the fruit, it brings forth a nut, resembling a kidney, about the bigness of a walnut. The outer shell of this nut is of an ash colour, and very smooth; under this is another, which covers the kernel; between these lies a viscid, inflammable oil, of a reddish colour, extremely acrid, bitter, and caustic, which has been used with great success, in eating off cancerous ulcers, &c. The kernel, when fresh gathered, has a most delicious taste, and abounds with a sweet milky juice. It is likewise an ingredient in puddings, and many agreeable preparations. When somewhat older, it is usually roasted. Ground with cocoa, it makes an excellent chocolate. When kept too long, the kernel becomes shrivelled, and loses its flavour and best qualities.

The acajou-tree annually transudes, from five, often to ten or twelve pounds, of a fine semi-transparent gum, similar to gum-arabic, and little inferior to it in virtue. From this tree is also procur'd, by incision, a milky juice, which stains linen of a lasting deep black.

**AGARIC.** (F. *Agaric*; G. *Lerchen-schwamm*, *Tannen-schwamm*; L. *Agaricus*.)

This is a kind of fungous excrescence, growing on the trunks and large branches of several trees, particularly the larch-tree, in Muscovy and Tartary; though an inferior sort also grows on the Alps, the mountains of Dauphiné, and the Trentine.

The best agaric ought to be large, white and loose; of taste, first sweet and then bitterish. This article was formerly much esteemed in pharmacy and physic.

There is also a rough, yellowish, and woody kind of agaric, used in dying.

AGATE. (F. *Agate*; G. *Achat*; D. *Agautsteen*; I. *Agata*; S. *Agata*; P. *Aagata*; DA. *Agat*; SW. *Agut*; POL. *Agat*; R. *Agat*; L. *Achates*.)

This is a precious stone, differently denominated, according to its different colours; some being transparent, some opaque; and some partly transparent, and partly opaque.

The *Sardian* agates are red, and the most valuable of that kind are the flesh-coloured, mixed with brown; the less valuable are those, the red of which borders upon a yellow.

The *onyx* is entirely opaque, and of a whitish and black colour.

The *sardonyx* participates of the nature of the *onyx* and *Sardian*, and is the most precious of all kinds of agates.

The *Egyptian* agate, is very hard; red, and intermixed with white and blue. That which resembles a rainbow is the most valuable kind.

The *Chalcedonic* agates are half transparent, of a rose colour, and clouded. There are some also white, but these are scarce.

The *Roman* agate is of various colours. In Germany, agates are to be found; in Saxony, Bohemia, and the county of Leuchtenberg.

The agate is used for making beads, rings, seals, handles for knives and forks, hilts for swords, snuff-boxes, and abundance of toys.

AGNUS-CASTUS SEED. (F. *Petit poivre*; G. *Keusch-Lam-Samen*, *Schaf-müllen*; D. *Kuischboomzaad*; I. *Semenza d'agnocasto*; S. *Pimiento loco*, *Sauzgatillo*; P. *Semente de agnocasto*; DA. *Agnus-castus fröe*; SW. *Agnus-castus frö*; L. *Agni-casti semen*.)

Agnus-castus seed, is the fruit of a shrub of that name, growing sometimes to the size of a middling tree, a native of most warmer climates. It delights in the banks of rivers, and other marshy soils. Its

leaves resemble those of the olive-tree, but are much softer and longer. Its blossoms are odoriferous, of a purple colour, and sometimes white; these are succeeded by seeds, which are first of a white, and at last of a dark red colour, something similar to coriander-seed. They are of a sharp aromatic taste; and the best ought to be new, large, and plump.

This seed is chiefly used in venereal complaints.

**ALABASTER.** (F. *Alabâtre*; G. *Alabaster*; D. *Albaster*; I. *Alabastro*; S. *Alabastro*; P. *Alabastro*; DA. *Alabaster*; Sw. *Albaster*; POL. *Alabaster*; R. *Alabastr*; L. *Alabastrites*.)

Alabaster is a kind of stone, softer than marble, and more easily worked. Its colours are various, but the white is the most beautiful. Some sorts are extremely white and shining; some red, like coral; some of a dark horny colour, resembling onyx; and another sort of a yellowish colour, like honey, variegated with specks and little veins.

This stone is found in the greatest quantities, in Saxony at Nordhausen, in some parts of Lorrain, at Clugny in France, about Rome in Italy, in various places of Sicily and Egypt, &c.; (for which, see the article *Marble*.) But the most valuable sort is produced at Montania, in the Roman territories, where the alabaster is in the highest esteem, for its beautiful whiteness, and admirable magnitude.

Alabaster is principally used by statuaries; also for making various toys and utensils.

**ALE** is a fermented liquor, obtained from an infusion of malt, and differing only from beer, by having a smaller proportion of hops.

Ale is thought the same kind of liquor with the *cerevisia*, *zythum*, and *curmi* of the antients.

There are several sorts of ale, prepared in different ways. Pale ale is brewed of malt, slightly dried, and is esteemed more viscid, than brown ale, which is made of malt more highly dried or roasted.



**ALKANET ROOT.** (F. *L'Oreanette*; G. *Ochsenzungen-Wurzel*; D. *Oxtertunge*; I. *Uncusa*; S. *Arca-neta*, *Pallomilla de Tinte*; P. *Alcane bastardate*, *He-ana Spuria*.) It is chiefly imported from Holland; is of a reddish colour, and chiefly used for staining wood to resemble mahogany.

**ALMONDS.** (F. *Amandes*; G. *Mandeln*; D. *Amandelen*; I. *Mandole*, *Mandorle*; S. *Almendras*; P. *Amendoas*; D $\Delta$ . *Mandler*; Sw. *Mandlar*; POL. *Migdal*; R. *Mindal*; L. *Amygdala*.)

Almonds are the fruit of the *amygdalus communis*, a tree or shrub growing to the height of nearly twenty feet. It much resembles a peach-tree, is a native of Africa, but very common now in all the southern parts of France, Spain, and Italy.

There are two kinds of almonds, sweet and bitter. The greatest quantity of both sorts, is collected in Syria, Barbary, Turkey, Spain, Italy, the Island of Cyprus, and France. In the kingdom of Naples, almonds abound in the territories of Bari, Lecce, and the Abruzzo; but the best come from Bari. In Sicily, the principal loading-places for almonds are: Palma, Girgenti, Mascari, Catanea, &c. They give the preference to those of Mascari. The almonds are gathered about the end of August, and in September; but they cannot be shipped until the middle of October, as it requires time to take off the shells and to dry them.

In the trade of this country, three sorts of almonds are distinguished; small Barbary; long Jordan; and short, broad, Spanish or Valencia almonds. This fruit, to be good, ought to be of a fresh yellow colour, large, of a fine flavour, and as little broken as possible.

Almonds make a very considerable part of the French trade, as well on account of the oils extracted from them, as on account of the prodigious consumption of this fruit in Lent.

In medicine, almonds are chiefly used for making emulsions.

ALOE. (F. *Aloë*; G. *Aloe*; D. *Aloë*; I. *Aloe*; S. *Aloe*, *Acibar*; P. *Aloes*, *Azevre*; DA. *Aloe*; Sw. *Aloë*; R. *Sabir*; POL. *Aloes*, *Alou*; L. *Aloë*.)

Of this genus of plants there are ten species, whereof the most current are:

The *aloe perfoliata*, or *aloe* SUCCOTRINA, or SOCOTRINA, brought from the island Socotora in the Indian ocean, wrapped in skins. It is the inspissated juice of the Asiatic aloe, prepared in the following manner. From the leaves fresh pulled, is pressed a juice, the thinner and purer part of which is poured off, and set in the sun, to evaporate to a hard yellowish substance. This sort is the purest of those, which we shall enumerate. It is of a glossy surface, clear, and in some degree pellucid; in the lump, of a yellowish red colour, with a purple cast; when reduced to powder, of a bright golden colour. It is hard and friable in the winter, somewhat pliable in summer, and grows soft betwixt the fingers. Its taste is bitter, accompanied with an aromatic flavour, but insufficient to prevent its being disagreeable. The smell is not very unpleasant, and somewhat resembles that of myrrh. The succotrine aloe plant has long, narrow, succulent leaves, which come out without any order, and form large heads. The stalks grow to the height of three or four feet, and have two, three, and sometimes four of these heads branching out. The lower leaves spread on every side, but the upper leaves turn inward towards the centre. The flowers grow in long spikes, upon stalks about two feet high, each standing upon a pretty long foot-stalk; they are of a bright red colour, tipped with green.

The *aloe* HEPATICA, Barbadoes, or common aloe, called *hepatic*, on account of its liver colour, is not so clear and bright as the foregoing sort; it is also of a

more compact texture, and generally drier. Its smell is much stronger and more disagreeable, the taste intensely bitter, with little or nothing of the fine aromatic flavour of the socotorine. The best hepatic aloes come from Turkey. This species also grows in Barbadoes and Jamaica, whence the better quality is imported in large gourd-shells; and an inferior sort of it, generally soft and clammy, in casks. This sort of aloe is said to be common also in the other West-India islands.

Aloe *CABALLINA*, fetid, caballine, or horse aloe, is supposed to be obtained from the same species with the foregoing; but being the thicker part, prepared in a different manner. It is chiefly distinguished by its strong rank smell, and used as a purge for horses.

The following is the method of preparing aloes in Jamaica. When they are grown into a perfect state, the labourers go into the field with tubs and knives, and cut off the largest and most succulent leaves close to the stalk; these are immediately placed in the tubs, and ranged one by the side of another, in an upright position, with the cut-part downwards, that all the loose liquor may dribble out at the wound. Some make also a longitudinal incision from top to bottom, to facilitate the discharge. When the juice has been by this means sufficiently extracted, it is put into shallow flat-bottomed receivers, and gradually exhale<sup>d</sup> in the sun, till it has acquired a due consistence; and thus prepared, it is packed in large dry gourds for exportation.

The method of preparing the common or horse aloes, is not so tedious; for, in manufacturing these, all the leaves are cut off, severed into junks, and thrown into tubs, there to lie, till the juice is pretty well drained out; they are then hand-squeezed, and the liquor mixed with water, in the proportion of about one quart to ten quarts of juice; after which, it is put into convenient boilers, and evaporated to a

due consistence; when it is emptied into large shallow coolers, and afterwards into small barrels.

As the drossy resinous part of the aloes is not soluble in water, it has been found, when combined with other mixtures, an excellent preservative to ships' bottoms against the worm, on account of its bitter nauseous acrimony. From the American aloe a vegetable soap is prepared in Jamaica, which will serve for use in washing linen, as well as Castile soap; but it has the superior quality of mixing and forming a lather with salt water, as well as fresh.

All the different kinds of aloes are gum-resins, with more gummous than resinous parts; they are used in medicine as a stimulating, stomachic purge.

**ALOE-WOOD.** (F. *Bois d'aloës*; G. *Aloe-holtz*; D. *Aloë-hout*; I. *Legno di aloë*; S. *Aloe Chino*; P. *Páo de Aloës*; DA. *Aloe-tree*; Sw. *Aloëträd*; POL. *Aloe drzewko*; R. *Aloe derewo*; L. *Lignum aloës*.)

The aloe-wood is the product of the *Excæcaria agallocha*, a tree growing in China, and some of the Indian islands. There are three sorts; the *calambac* or *tambac*; the *common* aloe-wood, and the *calambour*.

The **CALAMBAC**, or finest aloe-wood, called by authors *lignum aloës præstantissimum*, is of a light spongy texture, very porous, and its pores so filled up with a soft and fragrant resin, that the whole may be pressed and dented by the fingers like wax, or moulded about by chewing in the mouth, in the manner of mastich. Its scent is very fragrant and agreeable, and its taste acrid and bitterish, but exceedingly aromatic and pleasant. It is very variable in its colour; some variegated with black and purple; some with black and yellow, and some yellow alone, like the yolk of an egg.

The **COMMON** aloe-wood, or *lignum aloës vulgare*, is the second in value. This is of a more dense and

compact texture, and consequently less resinous than the other. We meet with it in small fragments, of a dusky brown colour, variegated with resinous black veins. Its smell is very agreeable, but not so strongly perfumed as the former sort. Its taste is somewhat bitter and acrid, but very aromatic.

The *calambour*, called also *agallochum sylvestre*, and *lignum aloës mexicanum*, is light and friable, of a dusky and often mottled colour, between a dusky green black, and a deep brown. Its smell is fragrant and agreeable, but much less sweet, than either of the two other sorts; and its taste bitterish, but not so much acrid or aromatic of the fine or common aloe-wood. It is said to be met with very frequently, and in large logs. This is the aloe-wood used by the cabinet makers and inlayers.

The two first sort of these aloes are used in medicine, as a cordial. A very fragrant oil may be procured from them, by distillation; recommended in paralytic cases.

It is generally thought that these three sorts of aloe-wood are produced by one tree; the calambac or tambac being the heart of the trunk.

ALQUIFOU, *Potter's ore*. (F. *Arquifou*; G. *Bleyglantz*; D. *Loodglans*; I. *Archifoglio*; S. *Alquifoló Vidriado*; P. *Arquifolho*; R. *Kubikowataia*; L. *Galena*.)

This is a sort of lead-ore, which, when broken, looks like antimony. It is used by the potters, to give a green varnish to their works, and thence it is called Potter's ore. It is met with in Cornwall, &c.

ALUM. (F. *Alun*; G. *Alaun*; D. *Aluin*; I. *Alume*; S. *Alumbre*; P. *Hume, ó Pedra hume*; DA. *Alun, Aluun, Allun*; SW. *Alun*; POL. *Halun*; R. *Kwassü*; L. *Alumen*.)

Alum is an astringent salt, the component principles of which are, argillaceous earth, supersaturated

with vitriolic acid ; it also contains a considerable quantity of water. The proportions of these constituent principles may be ascertained as follows : first, the water and superfluous vitriolic acid may be dissipated by evaporation, or rather distillation ; and the loss of weight sustained by the salt, as well as the quantity of liquid which comes over into the receiver, shews the quantity of aqueous phlegm and unsaturated acid ; then, by combining this with as much caustic fixed alkali, as is sufficient to saturate the acid, which comes over, we know its proportion to the water ; and by re-distilling this new compound, we have the water by itself. Lastly, the earth may be obtained, by precipitation with an alkali in its caustic state, either fixed or volatile. Alum analysed in this manner, was found to contain thirty-eight parts of vitriolic acid, eighteen of clay, and forty-four of water.

Our alum was certainly not known to the Greeks or Romans, and what the latter called *alumen*, was an impure vitriol. The alum used at present, was first discovered in the Oriental parts of the world. Though the period of the invention cannot be exactly fixed, it seems certain, that it was later than the twelfth century. One of the most antient alum-works, of which we have any account, was that of the Roccha, now Edessa, a city of Syria ; and from this city was derived the appellation of roch-alum ; an expression so little understood by the generality, that it has been supposed to signify rock-alum. At present, every fine kind of alum, and particularly the purest Roman alum goes under the denomination of roch alum. From this, and from works in the neighbourhood of Constantinople, as well as at Phocæa Nova, now Foya Nova, near Smyrna, the Italians were supplied till the middle of the fifteenth century ; when they began to set up works of a similar kind in their own country. The first Italian alum-work is said to have been established in the

island of Ischia, about 1482, by Bartholomew Perdux, or Pernix, a Genoese merchant, who had discovered the proper matrix, or ore of alum. But some affirm, that as early as the year 1458, the alum-work at Volterra, in the district of Pisa, had been erected by a Genoese, named Antonius. Soon after, to wit, about the year 1460 or 1465, alum-ore was discovered at Tolfa, in the territories of the Church, by John de Castro, who had visited the alum-manufactories at Constantinople. Having observed the *Ilex aquifolium* to grow in the neighbourhood of the Turkish manufactories, and finding the same near Tolfa, he concluded that the materials for alum were to be found there also; and was quickly confirmed in his suspicion, by the taste of the stones in the neighbourhood. These alum-works prospered exceedingly, and their success was augmented by an edict of Pope Pius II. prohibiting the use of foreign alum.—In the sixteenth century, an alum-manufactory was erected at Alamaron, in the neighbourhood of Carthagen, where it still continues. Several others were erected in Germany. The preparation of this salt was not known in Sweden till the seventeenth century.

The first alum-work in England, was erected at Gisborough in Yorkshire, in the reign of Queen Elizabeth. Sir Thomas Chaloner, observing the trees tinged with an unusual colour, suspected that it was owing to some mineral in the neighbourhood. He found out, that the strata abounded with an aluminous salt. On this, he privately engaged workmen belonging to the Pope's alum-works, and in a little time the undertaking succeeded so well, that several more were established; and, in later times, the proprietors of the British alum-works went so far, as even to farm those of the apostolic chamber.

The ores from which alum is prepared for sale, are of two kinds; one, containing the alum already formed; the other, only its principles, which then are united by roasting. The former is only to be

met with in volcanic countries ; and of this kind are the principal Italian ores of alum, particularly that employed at Tolfa near Cincelles, for boiling the 10 man alum. The aluminous ore at Solfatara in Italy, consists of old lava, whitened by the phlogisticated vitriolic acid. A variety of aluminous ores may be met with in several other parts of the world. In HESSIA and BOHEMIA, this salt is obtained from wood impregnated with bitumen. At Helsingborg in Scania, a turf is found, consisting of the roots of vegetables, mixed with nuts, straw, and leaves, often covered with a thin pyritous cuticle, which, when elixated, yields alum. Even the sulphureous pyrites is generally mixed with an argillaceous matter, which may be separated by menstrua. In some places, sulphur, vitriol, and alum, are extracted from the same material. The sulphur rises by distillation ; the residuum is exposed to the air till it effloresces, on which a green vitriol is obtained by lixiviation ; and alum from the same liquor, after no more vitriol will crystallize. The alum-slate, from which this salt is made near York in England, contains a considerable quantity of sulphur ; and therefore produces alum on the principles already mentioned.

The process which the alum ores must undergo, to extract that salt, are : roasting, elixating, and boiling the ley for crystallization.

The *roasting* is absolutely necessary, in order to destroy the pyrites, or metallized sulphur ; for on this the formation of the alum entirely depends ; as the sulphur of the pyrites will not part with its phlogiston, without a burning heat in the open air. The roasting is performed in Sweden, in the following manner. Small pieces of the ore are strewed upon a layer of burning sticks, to the thickness of half a foot. When the sticks are consumed, these are covered, nearly to the same thickness, with pieces burnt before, and four times lixiviated. Thus, strata are alternately laid, of such a thickness, and at such intervals of time,



that the fire may continue, and the whole mass grow hot and smoke, but not break out into flame. When the ore is once roasted, it still contains so much phlogiston, that water acts but little upon it; but after the operation has been two or three times repeated, the ore yields its principles more freely; the roasting may even be repeated to advantage, till the whole be reduced to powder. The bitumen keeps up the fire; for which reason, alternate layers of the crude ore are used, and, in rainy weather, these layers of unburnt ore should be thicker.

The *elixation* is performed, in some places with hot, and at others with cold water. In some places the water passes over the schist, which has been washed three times, for six hours; then that which has been twice washed, next what has been once washed, and, lastly, the ore which has been newly roasted.

The lixivium before boiling, ought to be as richly impregnated with alum as possible, in order to save fuel. In some places the taste is used, as the only criterion; but in others the weight of water which fills a small glass bottle, is divided into sixty-four equal parts, each of which is called in Sweden a panning; and the quantity by which the same bottle, full of lixivium, exceeds it when filled with water, indicates the quantity of salt dissolved. It is thought, that the weight of the lixivium, ought not to exceed the weight of the water, more than four and a half pannings.

*Boiling the ley for crystallization.* The ley is brought from the pits, and put into a leaden boiler, at the back of which is a reservoir, out of which the loss sustained by evaporation is constantly supplied. The boiling is supposed to be finished, if the increase of weight be equal to twenty pannings. The ley then flows through proper channels into coolers, where it is allowed to rest for about an hour, to free itself from the grosser sediment; after which it is put

into wooden or stone receptacles to crystallize. In eight or ten days, the remaining liquor, commonly called mother ley, or magistral water, is let off into another vessel. A great number of crystals, generally small and impure, adhere to the bottom and sides of the vessel, which are afterwards collected and washed in cold water.

When a sufficient quantity of the small crystals is collected, they must then be put into the boiler, for depuration. They are now dissolved in as small a quantity of water as possible; after which, the lixivium is poured into a great tub, containing as much as the boiler itself. In sixteen or eighteen days, the hoops of the tub are loosed, and the aluminous mass bound with an iron ring; and in twenty-eight days more, the residuum of the solution is let out through a hole, and collected in a trench; after which, the saline mass is dried, and sold as depurated alum.—The boiler, emptied for the first crystallization, is next filled two-thirds full, with the magistral lixivium; and as soon as the liquor arrives at the boiling-point, the other third is filled with crude lixivium, with which the evaporation is also constantly supplied. A certain quantity of the aluminous impurities, left by washing the salts of the first crystallization in water, is then added, and the above-described process repeated. Only the first boiling, in the spring, is performed with the crude lixivium alone, the rest are all done, as just now related.

It is remarkable, that pure alum cannot be obtained in very considerable quantity, by merely evaporating and cooling the ley; and the lixivium sometimes acquires such a consistence, that it both crystallizes with difficulty, and produces impure crystals. This proceeds from an excess of vitriolic acid, which impedes the crystallization. This excess may be removed, by the addition of vegetable and volatile alkalis; but experiments have proved, that the addition of clay is preferable.

Alum, as commonly made, though depurated by a second crystallization, yet is almost always found contaminated by dephlogisticated vitriol; whence it grows yellow, and deposits an ochre in solution, when old. This is equally useful in some arts, with the purest kind, and is even so in dying, where dark colours are wanted; but where the more lively colours are required, every thing vitriolic must be avoided. This is done by the addition of pure clay, which precipitates the iron, and produces an alum entirely void of any noxious or heterogeneous matter.

By M. Chaptal, formerly of the Royal Society of Montpellier, we are furnished with a method of preparing alum, by the direct combination of its constituent principles.—Alum, (says he) being produced by the combination of the vitriolic acid with pure clay, all the known processes of the alum manufactories consist, in facilitating the combination of the mixture, by exposing it to a moderate heat. Vitriolic acid is only a mixture of water with the vapour produced by the combustion of saltpetre and sulphur; let us therefore expose the clay to the action of this vapour: the effects of the acid, in a state of vapour, must be infinitely greater, than when in a liquid state. Upon this principle, he established a large manufactory. Rooms lined with lead, are very proper for the purpose of burning the mixture of sulphur and saltpetre, the vapours of vitriolic acid having very little action upon lead. But lead is heavy and expensive. He therefore substituted a cement, consisting of equal parts of rosin, turpentine, and wax. A white and pure clay is then to be chosen, which, in order to dispose it to combine with the vitriolic acid, must first be calcined, then reduced to powder, and in that state exposed to the vapour of sulphur and saltpetre, by placing a layer of it upon the floor. At the end of some days, like incrustations, and sometimes even crystals of pure alum are

perceived upon it, and when an efflorescence is formed, all over the clay, it is taken out of the room, and then lixiviated in the usual way.

By forming proper partitions at the bottom of similar rooms, iron, clay, copper, and water, may be exposed to the vapour, and consequently vitriol of iron, of copper, and of alumine, and vitriolic acid, made at the same time.

The different kinds of alum differ from one another, merely by being mixed with some heterogeneous salts.

The Roman alum is generally considered preferable to any other, and is usually met with in small crystals of a reddish colour. Large quantities of alum from Whitby are annually exported from Great Britain. The best British alum, produced in the hills of Yorkshire and Lancashire, is extremely white, clear, and transparent, and of an acid taste, leaving in the mouth a sense of sweetness, accompanied with a considerable degree of astringency. Roman alum is also of an acid, but disagreeable taste. Alum of Liege and Meziere is much of the same quality as that of Yorkshire, only flatter, and consequently less proper for dyers.

This salt is of important use, as a dying material; as, by means of it, great numbers of colours are fixed and rendered permanent upon cloth. It also constitutes the basis of crayons. Mixed with tallow, it gives it a hardness and consistence, and is therefore of use in the making of candles. In tanning, it assists to close the pores, and to restore the cohesion of skins, almost entirely destroyed by the lime. It also, though to the great detriment of the health of mankind, is used by vintners to fine down and to sweeten their sour wines. Fishermen use alum, for the drying of their cod-fish, and bakers mix it with the flour, to make their bread compact and white. In medicine it is used externally.

AMADOW. (F. *Amadou*; G. *Zunderschwamm*.)

A kind of tinder or touchwood, coming from Germany. It is made of a kind of mushrooms, or spungy excrescences, which commonly grow on old trees. This substance is boiled in common water, and afterwards dried, and well beaten, then put in a strong lye, prepared with saltpetre; after which it is again put to dry in an oven.

AMBER. (F. *Ambre jaune*, *Succin*; G. *Agstein*, *Bernstein*; D. *Barnsteen*; I. *Ambra gialla*, *oghiacciata*; S. *Ambar*; P. *Ambar*; DA. *Bernsteen*, *Rav*; SW. *Bernsten*, *Raf*; POL. *Bursztyn*, R. *Jantar*; L. *Succinum*, *Electrum*.)

This is a pellucid and very hard inflammable substance, of one uniform structure, a bituminous taste, very fragrant smell, and highly electric.

The generality of authors contend for this substance being a bitumen, which trickling into the sea from some subterraneous sources, and then mixing with the vitriolic salts, that abound in those parts, becomes congealed and fixed. However, as good amber is found by digging, a great distance from the sea, it is probable, that it is a bitumen of the naphtha or petroleum kind, hardened into its present state by a vitriolic acid, or oil of vitriol.

The natural colour of amber is a fine pale yellow, but it is often made white, and sometimes black; in both cases, it is rendered opaque, by the admixture of extraneous bodies. The most frequent variation, however, from the yellow, is into a dusky brown. Sometimes it is tinged with metalline particles, and remains pellucid.

The salt, oil, and tincture of amber, have been variously applied in medicine; but its mechanical use for toys, beads, cabinets, and utensils, and the better sorts of varnishes, are of more importance.

This substance is principally to be met with on the sea-coasts of Prussia. The river Giarretta in Sicily,

formerly called Simethus, which takes its rise on the north side of Mount *Ætna*, throws up near its mouth, great quantities of fine amber, some of which is more electric, and emits a stronger smell, than what comes from the Baltic.

Some pieces of this amber contains flies and other insects, curiously preserved. It is generally supposed to issue from the earth in a liquid state, at which time the insects that alight upon it, are caught, and by their struggle to get loose, soon work themselves into its substance; which hardening round them, they are for ever preserved in the greatest perfection. Large fine pieces are constantly found at the mouth of the *Giaretta*, supposed to have been brought down by the river; but it is singular, that none of it is ever found any where, but on the sea shore. This amber, at *Catanea*, is manufactured into beads, images of saints, crosses, &c.

**AMBER-GREASE; AMBERGRISE, OF GRAY AMBER.** (F. *Ambre-gris*; G. *Ambra*; D. *Ambergrys*; I. *Ambracane*; S. *Ambargris*; P. *Ambargris*; DA. *Ambra*; Sw. *Ambra, gra Ambra*; POL. *Ambra*; L. *Ambra, Ambra grisia*.)

Ambergrise is a solid, opaque, generally ash-coloured, greasy, inflammable substance, variegated like marble, remarkably light, rugged and uneven in its surface, and has a fragrant odour, when heated. It does not effervesce with acids, melts freely over the fire into a kind of yellow rosin, and is hardly soluble in spirits of wine.

It is found on the sea-coasts, or swimming on the sea, or in the abdomen of whales, in various shapes and sizes, weighing from half an ounce to upwards of an hundred pounds.

By Dr. Swedjar's account of this substance, in the *Philosophical Transactions*, it appears, that the persons employed in the whale-fishery observe, that whenever they hook a spermaceti-whale, it con-

stantly not only vomits whatever it has in its stomach, but also generally discharges its fæces at the same time: and if this latter circumstance happen, they are generally disappointed of finding ambergrise in its belly. But whenever they discover a spermaceti-whale, torpid and sickly, they are always pretty sure to find ambergrise, as the whale in this state seldom voids its fæces on being hooked. They likewise generally meet with it in the dead spermaceti-whales, which they sometimes find floating on the sea.

The ambergrise found in the abdomen of the whale, is not so hard as that which is found on the sea-coast, but soon grows hard in the air. When first taken out, it has nearly the same colour, and the same disagreeable smell, though not so strong, as the more liquid dung of the whale has: but on exposing it to the air, it by degrees not only grows greyish, but also loses its disagreeable smell, and, when kept for a certain time, acquires that particular odour, so agreeable to most people. It is known, that the cuttle-fish is the constant food of the spermaceti-whale; hence it is easy to account for the many beaks, or pieces of beaks, found in all ambergrise. Dr. Swedjar therefore defines ambergrise, to be the preternaturally hardened dung or fæces of the spermaceti-whale, mixed with some indigestible relics of its food.

The colours of ambergrise vary; there is, first, the white ambergrise, which is scarce and of little value; as it seems, either not to be ripe, or mixed with some heterogeneous matter; then, the ash-coloured, or true ambergrise; afterwards the black ambergrise, which is inferior to the preceding sort, and frequently adulterated; lastly, the brown ambergrise, which has a peculiar, unpleasant smell. It looks mostly sleek or smooth, as if covered with a skin.

Ambergrise ought to be chosen in large pieces, of an agreeable odour, entirely grey on the outside,

and grey with little black spots within. The purchaser should be extremely cautious; as this article is easily counterfeited with gums and other drugs.

Ambergrise is chiefly found in the Atlantic Ocean, on the sea-coast of Brasil, of the East Indies, China, Japan, and the Molucca Islands. But most of the ambergrise brought to England, comes from the Bahama Islands and Providence.

The use of ambergrise is now nearly confined to perfumery; it was formerly recommended in medicine by eminent physicians. In Asia and part of Africa, it is also used as a spice in cookery.

AMETHYST. (F. *Amethyste*; G. *Amethyst*; D. *Amethysteen*; I. *Amatista*; S. *Amatista*, *Ametisto*; P. *Ametista*, *Ametisto*; DA. *Ametist*; Sw. *Ametist*; L. *Amethystus*.)

A gem of a purple colour, which seems composed of a strong blue and a deep red, and, according as either of these prevails, affording different tinges of purple, sometimes approaching to violet, and sometimes even fading to a pale rose colour.

Though the amethyst be generally of a purple colour, it is nevertheless found sometimes naturally colourless, and may at any time be easily made so, by putting it into the fire; in which pellucid or colourless state, it so well imitates the diamond, that its want of hardness seems the only way of distinguishing it.

The amethyst is scarcely inferior to any of the gems, in the beauty of its colour; and, in its purest state, is of the same hardness, and at least of equal value with the ruby and sapphire. It is found of various sizes, from the bigness of a small vetch, to an inch and a half in diameter, and often to much more than that in length.

This precious stone is found in the East and West Indies, and in several parts of Europe; some of the finest specimens of the Oriental ones being so hard



and bright, as to equal any of the coloured gems in value. However, by far the greater number of amethysts fall infinitely short of these, as all the European ones, and not a few of those brought from the East and West Indies, are very little harder than common crystal.

Counterfeit amethysts come from France and Germany. They are spars and crystals, and even tinged glass.

· AMIANTHUS, or *Earth-Flax*. (F. *Amiante*, *Asbeste*; I. *Amianto*; S. *Amianto*; P. *Amianto*; Sw. *Asbest*; L. *Amiantus*.) A fibrous, flexile, elastic, mineral substance, consisting of short, abrupt, and interwoven filaments. It is found in Germany, in the strata of iron-ore, sometimes forming veins of an inch in diameter; also in Crete and Cyprus, in Tartary, Namur in the Low-countries, in the old Noricum, in Egypt, in the mountains of Arcadia, at Puteoli, in Corsica, Anglesey in Wales, Aberdeenshire in Scotland, at Montauban in France, and in Siberia.

The amianthus may be split into threads and filaments, from one to ten inches in length, very fine, brittle yet somewhat tractable, silky, and of a greyish colour. The industry of mankind has found the method of employing this stubborn metal for the manufacture of a kind of linen, called *asbestos*. It has the wonderful quality of being unconsumable in fire, which only serves to whiten it. The shorter filaments of the amianthus, that separate in the washing of the stone, are used for making paper.

The method of making asbestos, is now entirely unknown: but Bapt. Porta assures us, that, in his time, the spinning of asbestos was a thing known to every one at Venice. This kind of linen was chiefly esteemed among the antients, being held equally precious with the richest pearls.

AMMEOS SEED; *true Amomum*. (F. *Semence d'ammi*; G. *Ammy-samen, Ammey*; D. *Amyzaad*; I. *Ameos, Ammi*; S. *Ameos, Ammi*; P. *Ameos, Ammio*; DA. *Ammyfrö*; SW. *Ammi-frö*; L. *Amomum verum*.)

This seed comes from a round fruit, about the size of a middling grape; containing, under a membranous cover, a number of small, rough, angular seeds, of a blackish brown colour on the outside, and whitish within. Ten or twelve of these fruits grow together in a cluster. The husks, leaves, and stems of the plant, have a slight, grateful smell, and a moderately warm, aromatic taste. The seeds freed from the husks, are in both respects much stronger; their smell is quick and penetrating, their taste pungent, approaching to that of camphor. Notwithstanding amomum is an elegant aromatic, it has long been unknown to the shops.

AMOMI SEED. (F. *Amomes*; G. *Amomchen*; D. *Amomizaad*; I. *Amomo*; S. *Amomo*; P. *Amomo*; DA. *Amomfrö*; SW. *Amomfrö*; L. *Amomum vulgare*.)

These are brown grains, brought from the East Indies, of a hot aromatic smell and taste, somewhat resembling that of cinnamon, cloves, and pepper. They are of the size of a chick-pea, and grow on a tree, which has a red-coloured odoriferous wood, and bears a kind of berries or pods in the shape of grapes. These berries contain the seeds; which ought to be light-coloured, heavy, and well-filled. If the berries be light, with black seeds and shrivelled, they are of no value.

These seeds are only used in medicine.

AMPELITES, *cannel* or *candle coal*. (L. *Ampe-lion, Ampelis*.)

A hard, opaque, fossil, and inflammable substance,

of a black colour. Though much inferior to jet, it is a very beautiful fossile, and for a body of so compact a structure, remarkably light. There is a large quarry of it near Alençon in France; it is also dug in many parts of England, and the finest in Lancashire and Cheshire. It makes a very brisk fire, flaming violently for a short time, and after that, continuing red and glowing hot for a long while. It is capable of a very high and elegant polish, and in the countries where it is produced, it is turned into a vast number of toys. It is likewise used for dying the hair black.

ANCHOVIES. (F. *Anchois*; G. *Anchojen*; D. *Ansjovis*; I. *Acciughe*; S. *Anchovas*; P. *Anchôvas*; DA. *Ansiôs*; Sw. *Ansjovis*; R. *Antshofischi*; L. *Encrasicholi*.)

The anchovy is a species of clupea, with the upper jaw longest. It is so much like the common sprat, that this fish is often sold under its name.

Anchovies are fished on the southern coast of France, on the coasts of Italy, and other parts of the Mediterranean; but those coming from Gorgona, an island in the sea of Tuscany, are esteemed the best. Anchovies should be chosen small, fresh pickled, white on the outside, and red within. They must have a round back; for those which are flat or large, are often nothing but sardines. The pickle also, on opening the pots or barrels, must be of a good taste, and not have lost its flavour.

The common way of eating anchovies is with oil, vinegar, &c. or they are made into a sauce, by mincing them with pepper, &c.

ANCHUSA; ALKANET, or BUGLOSS. (F. *L'Orcanète*; G. *Rothe Ochsenzunge*, *Orkanet*; D. *Ossetong*, *Orkanette*; I. *Ancusa*; S. *Arcaneta*, *Palmilla de Tinte*; P. *Alcanna bastarda*, *Orcaneta*; DA.

*Oxetunge, Orkanette; Sw. Ortunga; Pol. Czerwie-  
niec; R. Wólówi jasük; L. Alcanna.*)

Of the eight species of this plant, we only enu-  
merate two; namely, the *officinalis*, or greater garden-  
bugloss; and the *tinctoria*, or true alkanet. The for-  
mer grows naturally in France, and in all the warmer  
parts of Europe; it will even thrive well enough in  
Great Britain. The flowers of this species have ob-  
tained the name of cordial flowers, as they moderately  
cool and soften, and are used for that purpose in  
medicine.—The *tinctoria* is a native of the Levant,  
but equally hardy with the former species; its roots  
are used, on account of their red colour, as a co-  
louring ingredient for ointments, plasters, &c. The  
colour being confined to the cortical part, the small  
roots are preferable.

ANGELICA ROOT. (F. *Racine d'Angélique*;  
G. *Angelica-wurzel, Engel-wurz*; D. *Angelica*; I. *An-  
gelica*; S. *Anjelica*; P. *Angelica*; L. *Angelica*.)

All the parts of the angelica plant, but particu-  
larly the root, have a fragrant aromatic smell, and a  
pleasant, bitterish warm taste, glowing upon the lips  
and palate for a long time after they have been chewed.

For medicinal use, the angelica coming from Bo-  
hemia and Spain is reckoned the best. The roots are  
chiefly used in the aromatic-tincture, and the stalks  
make an agreeable sweetmeat.

Angelica-roots are apt to grow mouldy, and be  
preyed upon by insects, unless thoroughly dried, kept  
in a dry place, and frequently aired.

ANISEED. (F. *Anis*; G. *Anis, Anis-saamen*;  
D. *Anys, Anys-zaad*; I. *Anice*; S. *Anis*; P. *Anis,  
Anise*; DA. *Anis*; Sw. *Anis*; POL. *Anyż*; R. *Anis*;  
L. *Anisum*.)

Aniseed is a roundish striated seed, flatted on one  
side, and pointed at one end; of a pale colour inclin-  
ing to green; it has an aromatic smell, and a pleasant

warm taste, accompanied with a degree of sweetness. It is the seed of the *pimpinella anisum* or common anise, an annual plant, which grows naturally in Egypt, but is cultivated in the southern parts of Europe, particularly Malta and Spain, whence the seed is imported into Great Britain. The smaller kind, brought from Spain, is preferred.

Aniseed is used in medicine and for confectionery. It gives out all its virtue to rectified spirit, which becomes of a bright lemon colour, and tastes very agreeably. In distillation, it gives over the whole of its flavour. An essential oil arises with the water, in a considerable quantity; above an ounce having been extracted from three pounds of the seed.

ANNATTO, *Anotta, Roucou*. (F. *Roucou, Bichet*; G. *Orlean*; D. *Orleaan, Rokoe*; I. *Oriana, Urianna, Urucu*; S. *Achiote, Achote, Cochehue, Orellana*; P. *Urucu, Oriana*; D.A. *Orlean*; Sw. *Orleana*; Pol. *Orlean, Roku*; R. *Orlean*; L. *Terra Orleana, Orellana, Bixa*.)

Annatto is a red colour, formed from the pellicles or pulp of the seeds of the *Bixa*, a tree common in South America.

The annatto-tree has a reddish bark, and large, strong, and hard leaves, of a dark green colour. It is as high as a plum-tree, and more bushy. The flowers that grow in bunches, not unlike wild roses, are succeeded twice a year by pods, as prickly as the shell of a chesnut, but smaller. They contain some small seeds of a pale red colour, and from these the annatto is prepared. As soon as one of the eight or ten pods that grow in a bunch, opens of itself, all the rest may be gathered.

The seeds cleared from the pods, are then steeped in water, for seven or eight days, or longer. When they begin to ferment, the seeds ought to be strongly stirred and bruised with wooden pestles, to promote the separation of the red skins. This process is re-

peated several times, till the seeds are left white. The liquor passed through close cane-sieves, pretty thick, of a deep red colour, and a very bad smell, is received into coppers. In boiling, it throws up its colouring matter to the surface, in form of scum, which is taken off, saved in large pans, and afterwards boiled down by itself to a due consistence, and made up, while soft, into balls or cakes of two or three pounds weight.

According to others, annatto is nothing else but the red farina, with which the seeds of the plant are covered, when coming out of the pods; and the process for preparing the dye, simply as follows: When a sufficient quantity of the seed is collected, they are thrown into a vessel, and as much hot water poured upon them as is necessary to suspend the red farina, which is gradually washed off the seeds with the hand, or a spoon. When the seeds appear quite naked, they are taken out, and the wash is left to settle; after which, the water is gently poured away, and the sediment put into shallow vessels, to be dried by degrees in the shade; and, after acquiring by this means a due consistence, it is made into balls or cakes, and set to dry thoroughly in an airy place, until perfectly firm.

The annatto commonly met with among us, is moderately hard and dry, of a brown colour on the outside, and a dull red within.

It is used as an ingredient in varnishes, and for dyeing wool and silk. It is also esteemed in medicine.

**ANTIMONY.** (F. *Antimoine*; G. *Antimonium*, *Spiessglass*; D. *Spiesglas*; I. *Antimonio*; S. *Antimonio*; P. *Antimonio*; DA. *Spidseglas*; Sw. *Spets-glans*; POL. *Spiszglas*; R. *Antimonia*; L. *Antimonium*.)

This semi-metal, when pure and well fused, is of a white shining colour, and consists of laminæ applied to each other. When it has been well melted, and not too hastily cooled, and its surface is not touched

by any hard body during the cooling, it exhibits the perfect figure of a star, consisting of many radii issuing from a centre. This proceeds from a disposition that the parts of this metal have to arrange themselves in a regular manner, and is similar to the crystallization of salts.

Regulus of antimony, is moderately hard; but, like other semi-metals, it has no ductility, and breaks in small pieces under a hammer. It loses one-seventh of its weight in water. The action of air and water destroys its lustre, but does not rust it so effectually as iron or copper. It is fusible with a heat sufficient to make it red-hot; but when heated to a certain degree, it fumes continually, and is dissipated in vapours.

There are different methods of preparing from antimony, the regulus of antimony; but all of them consist merely, in separating the sulphur which this mineral contains, and which is united with the regulus. It is plain, therefore, that regulus of antimony may be made, by the addition of any substance, to crude antimony in fusion, which has a greater attraction for sulphur, than the regulus itself has.

Regulus of antimony enters into the compositions for metallic speculums for telescopes, and for printing-types. It is also the basis of a number of medicinal preparations; but many of these, which were formerly much esteemed, are found to be either inert, uncertain, or dangerous in their operation; so that the only two preparations now retained, by the most skilful practitioners, are the infusion of glass of antimony in wine, and emetic tartar.

**AQUA-FORTIS.** (F. *Eau forte*; G. *Scheidwasser*; D. *Sterkwater*; I. *Acqua-forte*; S. *Agua fuerte*; P. *Agoa forte*; DA. *Skedevand, Skevand*; SW. *Skedwatten*; POL. *Serwaser, Stychwaser*; R. *Wodka-krebkaja*; L. *Aqua fortis*.)

Aqua-fortis is a nitrous acid of a certain strength; when concentrated and smoking, it is called spirit of

nitre. The aqua-fortis used by dyers, brass-founders, &c. is not only weaker than spirit of nitre, but contains a portion of vitriolic acid. It may be made, by distilling crude nitre with calcined vitriol, equal parts; or with somewhat more than half its weight, of oil of vitriol; or by mixing one part of oil of vitriol, with nine parts of pure spirit of nitre. Aqua-fortis therefore is a mixture of the vitriolic and nitrous acids.

**AQUA REGIA.** (F. *Eau regale*; G. *Königswasser*; D. *Königswater*; I. *Acqua regia*; S. *Agua reja, ó real*; P. *Agua regia, ou regal*; DA. *Kongevand*; Sw. *Kungsvatten*; L. *Aqua regia*.)

Aqua-regia is a compound of nitrous and marine acid, in different proportions, according to the purpose for which it is intended. It is particularly used as a menstruum for gold; it likewise dissolves all other metals, except silver.

**AQUA VITÆ**; see BRANDY.

**ARCHILLA**; see ORCHELLA.

**ARGOL, Tartar.** (F. *Tartre*; G. *Weinstein*; D. *Wynsteën*; I. *Tartaro*; S. *Tartaro*; P. *Tartaro*; DA. *Vinsteen*; Sw. *Winsten*; POL. *Waystin*; R. *Winnüikamen*; L. *Tartarum*.)

Argol, or tartar, is a substance thrown off from wine, after it is put into casks to depurate. The more tartar is separated, the more smooth and palatable is the wine. This substance forms a thick, hard crust on the sides of the casks: and as part of the fine dregs of the wine adhere to it, the tartar of the white wines is of a greyish white colour, called white argol; and that of red wine has a red colour, and is called red argol.

When separated from the cask in which it is formed, argol is mixed with much heterogeneous matter; from which, for the purposes of medicine and che-



mistry, it requires to be purified. This purification consists in first boiling the argol in water, filtrating the solution, and allowing the salt to crystallize; which it very soon does, as it requires nearly twenty times its weight of water to dissolve it. The crystals of tartar obtained by this operation, are far from being perfectly pure; and therefore they are again boiled in water, with an addition of clay, which absorbs the colouring matter; and thus, on a second crystallization, a very pure and white salt is obtained. These crystals are called *Cream of Tartar*, and are commonly sold under that name.

Cream of tartar may be re-composed in the following manner: Upon fixed vegetable alkali pour a solution of the acid of tartar; and continue this, till the effervescence is over. The fluid will then be transparent; but if more of the acid be added, it will become turbid and white, and small crystals like white sand will be formed in it. These crystals are a perfect cream of tartar. Argols therefore consist of fixed vegetable alkali, supersaturated with the pure acid of tartar, and joined by large quantities of earthy impurities and colouring matter.

The white argol is preferable to the red, as containing less of the drossy or earthy matter. The marks of good argol of either kind, are its being thick, brittle, hard, brilliant, and little earthy. That brought from Germany is the best, on account of being taken out of those great tuns, wherein the salt has time to come to its consistence.

Argol is of considerable use among dyers, as serving to dispose the stuffs to take their colours the better.

**ARMENIAN BOLE.** (G. *Armenischer Bolus*, *Rothstein*, *Rötelstein*.) Is a soft bole of red colour, used in medicine. An indurated kind of this, affords the material for the red pencils.

Boluses, or boles, are martial clays, containing a

fine and dense clay of various colours, with a large quantity of iron.

The Armenian bole was formerly brought from Armenia, but is now found also in several parts of France and Germany.

**ARMENIAN STONE.** (G. *Blauer Bolus.*) This substance is improperly called a stone, being nothing else than an ochreous earth, and properly called *blue ochre*. It is a very valuable substance in painting, being a bright and lively blue. It easily breaks between the fingers, and does not stain the hands. It is of a brackish disagreeable taste, and ferments with acids. It is a very scarce fossile, and was in so high esteem as a paint amongst the antients, that counterfeits were continually attempted to serve in its place.

Though in but small quantities, it is found very pure in the mines of Gosslar in Saxony.

**ARRACK or RACK.** (F. *Arac*; G. *Arrack, Rack*; D. *Arak, Rak*; I. *Aracco*; S. *Arak*; P. *Araca, Orraca*; DA. *Arrak*; Sw. *Rack, Arack*; POL. *Arak*; R. *Arak*.)

Arrack seems to be a general name amongst the Indians, for spirituous liquors of all kinds. According to Lockyer, what we understand by arrack, is a spirit procured by distillation from a vegetable juice called toddy, which flows by incision out of the cocoa-nut tree. Others are of opinion, that arrack is a spirit obtained by distillation from rice or sugar, fermented with the juice of cocoa-nuts.

This seems to be the most established opinion, and that rice is the principal ingredient from which this spirit is distilled, of three different degrees of strength, in large pans, after a previous fermentation with water, treacle from the sugar-houses, and the juice of the cocoa-trees. The weaker sort of arrack is drunk by the Chinese, at their merry-meetings. The white arrack, which is immediately bottled off,

is stronger, and used chiefly in India. Arrack, after it has been put into wooden vessels to be sent to other places, acquires a colour from the wood, and is the brown arrack commonly sold in Europe.

Goa and Batavia are the chief places for arrack.

Arrack is also the name of a spirituous liquor, made by the Tartars, of mare's-milk left to sour, and then twice or thrice distilled.

ARROW-ROOT ; see INDIAN ARROW-ROOT.

ARSENIC. (F. *Arsenic*, *Poudre aux rats* ; G. *Arsenic*, *Mäusse-gift*, *Ratten-pulver*, *Hütten-rauch* ; D. *Arsenik*, *Rottekruid* ; I. *Arsenico* ; S. *Arsenico* ; P. *Arsenico* ; DA. *Arsenik*, *Rottekruud* ; SW. *Arsenik*, *Rottpulver* ; POL. *Arsenik* ; R. *Müschjak* ; L. *Arsenicum*.)

Late experiments have made it evident, that white arsenic consists of an acid united to phlogiston ; and that, by diminishing the latter, the acid becomes more and more apparent ; while, on the contrary, by augmenting the quantity of phlogistic matter, the arsenic assumes the metallic form, and is called regulus of arsenic. In our systems of Chemistry, it is reckoned amongst the semi-metals.

Arsenic, in its pure state, is a most destructive and deadly poison, for which the art of medicine has scarcely as yet found a cure. The extreme danger attending this substance, when taken into the human body, arises from its insolubility, and the difficulty of decomposing it.

Notwithstanding the dreadful effects of arsenic when taken unprepared in large quantities, it has been introduced in medicine both internally and externally.

Besides the medicinal use of arsenic, it is, but too frequently, used for edulcorating sour wines.

Regulus of arsenic enters into the composition of Meuder's Phosphorus. The powder of the calx is

frequently employed in glass-houses, either for facilitating fusion, for acquiring a certain degree of opacity, or for carrying off phlogiston. In painting too, the artists sometimes employ arsenic; it is used for the preparation of a most beautiful green pigment. In dying it is likewise of great service; and, in cloth-printing, for dissolving indigo.

Arsenic is found in a metallic shape in Bohemia, Hungary, Saxony, Hercynia, and other parts; particularly at St. Marieux in Alsatia.

ASBESTOS; see AMIANTHUS.

ASHES are the earthy particles of combustible substances, after they have been burnt. If the ashes be produced from vegetable bodies, they contain a considerable quantity of fixed salt, blended with the terrene particles; and from these ashes, the fixed alkaline salts, called pot-ashes, pearl-ashes, weed-ashes, barilla, &c. are extracted; for which, see under the respective heads.

ASPHALTUM; see BITUMEN JUDAICUM.

ASSA DULCIS; a name sometimes given to benzoin; see GUM-BENJAMIN.

ASSA-FÆTIDA. (F. *Assa-fetida*, *Merde de diable*; G. *Teufelsdreck*; D. *Duivelsdreck*; I. *Assa fetida*, *Zaffetica*; S. *Asa fetida*; P. *Asa fetida*; DA. *Dyvelsdræk*; Sw. *Dyfwelstrück*; POL. *Smrodzieniec*, *Czarzie laino*; L. *Asa fetida*.)

Assa fœtida is a kind of gum, of very offensive smell, procured from the root of a plant common in some parts of Persia, and called there hingesch. The leaves are of a horribly offensive smell, and no animal will touch them. It seldom flowers, sometimes not till its twentieth, thirtieth, or fortieth year: during all this time, the root is increasing, and conse-

quently sometimes grows to an enormous bulk. Roots of it have been seen, of the thickness of a man's thigh, and of a yard and a half in length; those of the thickness of an arm are common. When it sends forth a stalk, and has ripened its seed, it perishes. The root, within, is perfectly white, and full of a white, milky, and fetid juice, which, when collected and dried, is our *assa-fœtida*. They never make incisions in roots of less than four or five years standing, and the older and larger the root, the more plentifully the juice flows.

The most strongly scented *assa-fœtida* is always the best; and Kœmpfer observes, that it is so much stronger when fresh than when kept and imported into Europe, that a drachm of it has more scent than an hundred weight of what our druggists keep.

It is by much the strongest of the deobstruent warm gums, acting frequently as an antispasmodic and an anodyne.

AVIGNON BERRIES; see YELLOW BERRIES.

AZURE; see SMALTS.

AZURE OF COPPER; see COPPER.

AZURE STONE; see LAPIS LAZULI.

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## B.

BALSAM. (F. *Baume*; G. *Balsam*; D. *Balsem*; I. *Balsamo*; S. *Balsamo*; P. *Balsamo*; DA. *Balsam*; Sw. *Balsam*; POL. *Balsam*; R. *Balsam*; L. *Balsamum*.)

Balsam implies an oily, resinous, liquid substance,

flowing either spontaneously, or by means of incision, from certain plants. There are many varieties of balsam, generally denominated from the substances from which they are obtained; the principal of which are here enumerated.

**BALSAM CAPIVI**, or *Copaiba*; which comes from Brasil and Guinea, in earthen bottles, is of two sorts; the one bright and thin, the other thick; the first being white, of a thinner consistence than the common turpentine, but much more fragrant and detersive; the other inclining to yellow.

Both sorts pass away quickly by urine, and have therefore chiefly been prescribed in complaints of the urinary passage: though now they are not so much in use.

**BALSAM OF GILEAD**; called also *Balsamum Judaicum*, *Syriacum*, *Meccha*, and *Opobalsamum*.

It is admitted, even by the Turks, that, on account of the great price of balsam of Gilead, it is very difficult to find this commodity genuine; it being adulterated immediately on its filtration from the tree, and scarcely to be found pure any where, but in the possession of the Turkish Emperor and the Grandees of the Empire, who get it as a valuable present from some traveller.

The marks of its supposed purity are: a very yellow colour, perfectly transparent; a strong fragrant smell, with something of the lemon or citron flavour; and a bitter, sharp, and astringent taste. It is also very tenacious and glutinous, sticking to the fingers, and may be drawn into long threads. The way of trying balsam of Gilead, at Cairo and Mecca, is as follows: they let fall a drop of the balsam into a cup-full of clear cold water; if this drop remain in one place on the surface of the water, the balsam is of little value; but if it instantly extend itself, like a skin or pellicle, over the whole surface, and this skin

be even and clear, and can be taken off the water with a hair, silk, or thread, leaving it as clear as it was before; then it is a sign, that the balsam is of the best kind, and not adulterated.

The balsam of Gilead principally comes from Arabia Petrea; and the Arabians carry it to Mecca, and sell it there, during the time of the stay of the caravans from Egypt and Turkey. It also grows in Palestina, but requires the greatest care there, to prevent it from degenerating; whereas, in Arabia, it grows without cultivation. It is the produce of a species of amyris, rising to the height of the pomegranate-tree, to which it has a great resemblance, both in its long branches and flowers. The wood is red and gummy, and its fruit is a small nut, covered with a dry and brown pellicle, which contains a kernel. In the months of June, July, and August, the Arabs make a slight incision in it, from which there distils a kind of viscous juice, called opobalsamum. The juice extracted from its fruit, is called carpobalsamum, and that from the wood xilobalsamum. The opobalsamum is the most perfect part; it is white when it comes from the tree, then turns green, and afterwards to a gold colour; but as it grows old, it becomes a little tarnished, and in the end assumes the appearance of honey. Its smell, though strong, is agreeable; and it thickens like the turpentine of Cyprus. The opobalsamum coming to us from Arabia, is frequently mixed with this turpentine.

There is likewise a sort of *balsam of Mecca*, a white balsam, or dry white gum, resembling copperas, especially when old; which has all the virtues of the balm of Gilead or Judea; whence it is conjectured to be the same, only hardened and altered in colour.

Balsam of Gilead is used in medicine, to open obstructions of the lungs, as a stomachic, and also externally for curing wounds, &c. The Turkish women employ it as a cosmetic.

BALSAM OF MECCA; see BALSAM OF GILEAD.

**BALSAM OF PERU.** This Balsam is extracted from a shrub called *myroxylon peruiferum*, a native of Peru, and the warmer parts of America; and the way of extracting it, is said to be by decoction in water. This balsam, as brought to us, is nearly of the consistence of thin honey, of a reddish brown colour, inclining to black, an agreeable aromatic smell, and a very hot biting taste.—There is another sort of Balsam of Peru, of a *white* colour, and considerably more fragrant than the former. This is very rarely brought to us. It is said to be the produce of the same plant, which yields the common or black balsam, and to exude from incisions made in the trunk, while the former is obtained by boiling.—There is also a third kind, commonly called the *red*, or *dry*. This is supposed to acquire a different state from the white, merely in consequence of the treatment to which it is subjected, after it is gotten from the tree. It is almost as fragrant as the Balsam of Gilead. It is very seldom to be met with in Great Britain.

Balsam of Peru is a very warm aromatic medicine, considerably hotter and more acrid than copaiva.

**BALSAM OF TOLU** is obtained from the toluifera balsamum, or Balsam of Tolu tree, which grows in Spanish America, in the province of Tolu, behind Carthagena, whence we are supplied with it, made up in little gourd-shells. It is procured, by making incisions in the bark of the tree, and is collected into spoons made of black wax, from which it is poured into proper vessels.

This balsam is of a reddish yellow colour, and transparent, in consistence thick and tenacious; by age it grows so hard and brittle, that it may be rubbed into a powder between the finger and thumb. Its smell is extremely fragrant, somewhat resembling



that of lemons ; its taste is warm and sweetish, and, on being chewed, it adheres to the teeth. Thrown into the fire, it immediately liquifies, takes flame, and disperses its agreeable odour. Though it does not dissolve in water, yet, if boiled in it for two or three hours in a covered vessel, the water receives its odoriferous smell. Water also suffers a similar impregnation from the balsam by distillation. With the assistance of mucilage, it unites with water, so as to form a milky solution. It dissolves entirely in spirit of wine, and easily mixes with distilled oils, but less easily with those of the expressed kind.

This balsam possesses the same general virtues with the Balsam of Gilead, and that of Peru ; it is however less heating and stimulating.

**BAMBOE**, *Bambou*, or *Bamboos*. (F. *Bambou*, *Bamboucs*, *Bamboches* ; G. *Indianischer Rohr*, *Bambus* ; D. *Bamboesrietten* ; I. *Bambu* ; S. *Bambu* ; P. *Bambú* ; D. *Bambusrör* ; Sw. *Bambos*, *Bamborör* ; L. *Arundo Bambos*.)

This is a plant growing in the East Indies, which multiplies very much by its root, from which springs a branchy tuft, after the manner of the European reeds. It is of the largest kind of cane, and decreases gradually to the top, where it bears a blossom like our reeds ; being the only kind of grass that grows to the size of a tree.

This is one of the most useful plants to the Indians, as from it they make almost every thing they want. With it they build houses ; of it too they make chairs, tables, bedsteads, ladders, also vessels and household utensils ; which are light, strong, and neat.

Large quantities are annually brought to Europe.

**BARILLA**. (F. *Soude*, *Barille* ; G. *Soda*, *Barilla* ; D. *Souda* ; I. *Soda*, *Barriglia* ; S. *Sosa*, *Soda*,

*Barrilla* ; P. *Solda*, *Barrilha* ; D.A. *Soda* ; Sw. *Souda*, *Soda* ; R. *Soliunka*.)

Barilla is produced, by the incineration of different sea-plants, chiefly in Spain and Italy, where whole fields are sowed with them by the farmers, to good advantage. From this impure and mixed mass of cinders, is obtained the marine alkali.

They prepare barilla in Spain and Italy from the plants called *salicornia herbacea*, and *salicornia fruticosa* ; and sometimes also in Spain from the *chenopodium maritimum*, and the *batis maritima*. In France and other parts, this article is obtained from the *fucus vesiculosus* and from the *salsola soda*. The Saracens in Spain, called the plant which they used for the preparation of their barilla, *kali* ; which, with the addition of the Arabian article, has given rise to the name of alkali.

The discovery of the use of these plants, seems to be a present of the Saracens to the Europeans ; for no mention is made of it, before the Mahometan æra. The antients seem to be silent on that head.

The manner of preparing these ashes, usually, is thus : when the plant has attained its full height, they cut it down and let it dry ; afterwards they burn and calcine it in certain pits, like lime-kilns, dug in the ground for that purpose, which are covered up with earth, so that no air may come at the fire. The matter by this means is not only reduced into ashes, but, by means of the salt juices, united into a hard substance, which they break out of the pits with hammers.

Our market is supplied with barilla chiefly from Alicant and Carthageña in Spain, from the island of Teneriffa, and from Sicily. The Spanish barilla is reckoned the best ; and, among the Sicilian barilla, the preference is given to the produce of Ustica ; next comes that of Trapani, then Catanea, Marsala, &c.

In Sicily, the first crop of these herbs is cut in September and October; and they make a second crop about the end of November; but this second crop produces an inferior kind of Barilla.

In shipping barilla, particular attention should be paid to have as little small, or dust, as possible; as, in the latter state, it is most exposed to the access of air, which destroys its virtue. The marine alkali, however, is less subject to attract humidity than the vegetable alkali, like pot and pearl ashes, which can only be preserved when closely packed in casks. The usual assortment in which barilla is sold in Sicily, consists of two-thirds large lumps, one-sixth small lumps, and one-sixth dust. It answers best not to ship any dust, but to re-sell it at half price.

Prime quality in barilla is to be distinguished, by its strong smell, when wetted with the spittle, and by its whitish colour. If the lumps be hard, it is a proof that they are fresh.

Barilla is used by glass-makers, soap-boilers, bleachers, and other manufacturers.

**BARK** is the exterior part of trees, serving them for a skin or covering; of which there are a great many kinds in use in the several arts: some in medicine, as Jesuits-bark; others in dying, as the bark of the alder and quercitron bark; others in grocery, as cinnamon and cassia lignea; the bark of oak, in tanning; the bark of the cork-tree, for corks; that of the linden-tree, for a kind of cordage; and the bark of a sort of birch-tree, is used by the Indians for canoes, capable of holding twenty-four persons. In the East Indies, they also manufacture the bark of a particular tree into a kind of stuff or cloth. It is spun and dressed much after the manner of hemp, and the manufacture called pinasses and biam-bonnes.

Oak-bark, independently of its use in tanning leather (for which also oak sawdust has of late been sub-

stituted) is employed by the Highlanders, to dye their yarn of a brown, or, mixed with copperas, of a black colour.

**BARK, OAK.** (F. *Tin brut*; G. *Bark Eich enrinde lothe*; D. *Run Runne*; I. *Seizia de quercia*; S. *Cortezado do Encina*; DA. *Bark Gavaback*.)

English bark is most universally esteemed, but large importations are made from Germany and Holland. The quality most esteemed is that of bright colour, most free from rind and moss, and of bitter taste. There are two descriptions of oak bark, timber and coppice, or the bark up the trunk of the tree, and the boughs.

**BARK ANGUSTURA**, first imported from the West Indies in the year 1788. Its name is said to be taken from Angustura in South America. It is used in dysenteries, diarrhœas, and putrid fevers.

**BARLEY.** (F. *Orge*; G. *Gerste*; D. *Gerst, Garst*; I. *Orzo*; S. *Cebada*; P. *Cevada*; DA. *Byg*; Sw. *Biugg, Korn*; POL. *Jecymien*; R. *Jatschmen*; L. *Hordeum*.)

The principal use of barley among us, is for making beer. In Scotland, barley is a common ingredient for broths. In Spain, they feed the horses with barley. *Pearl barley*, and *French barley*, are barley freed from the husk by a mill; the distinction between the two being, that pearl-barley is reduced to the size of a small shot, all but the very heart of the grain being ground away.

**BAR-WOOD**, the red wood of Africa. Imported in large quantities from Angola, and other parts of the coast of Africa.

**BASALTES** is a heavy hard stone, chiefly black

or green, consisting of prismatic crystals; the number of its sides being uncertain.

The most remarkable property of this substance, is its figure: being never found in strata, like other marbles, but always standing up in the form of regular pillars.

Basaltes is frequently met with in Spain, Russia, Poland, near Dresden, and in Silesia; but the most noble store in the world, seems to be that of the Giant's Causeway in Ireland, and Staffa, one of the Western Islands of Scotland. Great quantities are likewise found in the neighbourhood of Mount *Ætna* in Sicily, of *Hecla* in Iceland, and of the volcano in the island of Bourbon.

Much has been disputed about the nature of Basaltes. Sir William Hamilton contends in support of its volcanic origin; Mr. Bergman is of opinion, that both fire and water contributed to produce it.

Some of the antients call this stone *Lapis Lydius*, from Lydia, where probably it was found in abundance.

The moderns denominate it the touch-stone, being used for the trial of gold and silver. The Romans, Grecians, and chiefly the Egyptians, made most of their statues of basaltes. See also MARBLE.

**BATH STONE** has its name from the city of Bath, most of the beautiful buildings of that place being erected with it. It is not so white and hard as Portland stone; but, as it is easy to be wrought with edged tools, and fashioned for all the ornamental parts of architecture, statuary, &c. it is sent to all parts of England.

This stone is dug out of the quarries upon Charlton-down, and brought thence down a steep hill, by a four-wheeled carriage, of a particular structure. The wheels are of cast-iron, broad and low, with a groove in the perimeter, to keep them on the pieces of wood, on which the carriage moves down-hill,

with four or five tons weight of stone, very easily, and without the help of horses. The motion is moderated by means of a friction-lever, bearing more or less on the hinder wheel, as occasion requires.

Great quantities of the stone dug out of those quarries, are sent by the Avon to Bristol, and thence to London.

**BEADS ; GLASSBEADS.** (F. *Verroterie, Ras-sade, Rocaille* ; G. *Glasperlen, Glaskorallen* ; D. *Venetianse paarlen* ; I. *Contaria, Margheritine* ; S. *Abalorios, Rocalla, Vidrieria* ; P. *Missanga, Velorios, Aljôfar, Rocalha* ; DA. *Gluskoraller, Glasperter* ; Sw. *Glaspärlor* ; POL. *Koralki sklanc* ; R. *Bisser i dekui.*)

Beads are small globules or balls, chiefly used for necklaces ; and made of pearl, steel, garnet, coral, diamond, amber, crystal, paste, glass, &c. There is a considerable trade, chiefly of coral, amber, and glass beads, carried on with the savages of the coast of Africa, and the East-India Islands. The Roman-Catholics make great use of beads, in rehearsing their ave-marias ; and the like usage is also found among the dervises and other religious of the East.

**BEAR SKINS ;** see **FURS.**

**BEAVER SKINS ;** see **FURS.**

**BEER.** (F. *Bière* ; G. *Bier* ; D. *Bier* ; I. *Birra, Cervogia* ; S. *Cerveza* ; P. *Cervéja* ; DA. *Oel, Oell* ; Sw. *Oel* ; POL. *Pirvo* ; R. *Pirvo* ; L. *Cerevisia.*)

Beer is a spirituous liquor, made with the addition of hops, from farinaceous grains, by decoction and fermentation.

Barley is generally used for making beer, sometimes also wheat, and even oats and rye. In North America, they brew beer from maize.

The invention of brewing beer is very old, but not

so old as that of preparing wine. According to Diodor, Osiris's beer was so good, that it was little inferior to wine, with respect to taste as well as strength. The antients were strangers to the use of hops.

The chief sorts of beer in Great Britain, of which considerable quantities are annually exported, are *Ale* and *Porter*.

Among the different sorts of beer brewed abroad, the most famous are: the *Broihan*, made at Hanover and Göttingen; the *Brunswick mumme*; the *Bremer acht-groten*; the *Dantzig spruce beer*; &c.

BEES-WAX; see WAX.

BELL-METAL; see COPPER.

BERLIN BLUE; see PRUSSIAN BLUE.

BERYL. (F. *Bénil*; G. *Beryll*; D. *Berylsteen*; I. *Berillo*; S. *Berilo*; P. *Berillo*; DA. *Beryl*; Sw. *Beryll*; L. *Beryllus*.)

Beryl is a pellucid gem of a blueish green colour, found in the East Indies, and about the gold-mines in Peru. Some also come from Silesia; but they are oftener coloured crystals than real beryls, and always much inferior to the East-Indian and Peruvian kind.

The beryl, in its perfect state, approaches to the hardness of the garnet; and its size is from that of a small tare to that of a pea, a horse-bean, or even a walnut.

BEZOAR, *Bezoard*. (F. *Bezoard*; G. *Bezoar*; D. *Bezoarsteen*; I. *Belzuar*, *Bezzuarro*; S. *Bezar*, *Bezoar*; P. *Pedra-Bazar*; DA. *Bezoar*; Sw. *Bezoar*; POL. *Bezoar kamien*; R. *Besoar*; L. *Bezoar*.)

Bezoar is a general name, in natural history and medicine, for antidotes, or substances to prevent the effects of poison.

The bezoar is a calculous concretion, found in the stomach of certain animals of the goat-kind. It is composed of concentrical coats surrounding one another, with a small cavity in the middle, containing a bit of wool, straw, hair, or a similar substance.

The *Oriental* bezoar, brought from Persia and the East Indies, is the best sort: it has a shining, dark green, or olive colour, and an even, smooth surface. On removing the outward coat, that which lies underneath appears likewise smooth and shining.

The *Occidental* bezoar, brought from the Spanish West Indies, has a rough surface, and less of a green colour, than the Oriental. It is likewise much heavier, more brittle, and of a looser texture. The Occidental is generally less than a walnut; the Oriental mostly larger, and sometimes as big as a goose-egg.

Many of the stones sold under the name of Bezoar, are artificial compositions. The common mark of the goodness of this stone, is its striking a deep green colour on white paper that has been rubbed with chalk.

Bezoar, in medicine, can only be considered as an absorbent.

*German* bezoar, is said to be found in the stomach of the chamois, a sort of wild goat, and supposed only to be the hair of that animal, licked off by the tongue, and, by its impregnation with the saliva, condensed into balls, which are used sometimes in medicine, but chiefly to make a yellow colour for painters in miniature.

BICE; see COPPER.

BISMUTH, *Tin Glass*. (F. *Bismuth*; G. *Wismuth*; D. *Bismuth*, *Bergsteen*; I. *Bismutte*; S. *Bismuth*, *Piedra inga*; P. *Marcasita*; DΛ. *Vismut*; SW. *Vismut*; POL. *Markazyt cynowy*; R. *Wismut*; L. *Bismuthum*.)

Bismuth is a semi-metal, of a reddish or yellowish



white colour, a lamellated texture, moderately hard, and brittle. It is the heaviest of all semi-metals, its specific gravity being nearly as that of silver, *viz.* ten times heavier than water. It has no degree of malleability, or of being reducible by trituration to a fine powder. It melts a little slower than tin, and is about as fusible as lead. It seems to flow the thinnest of all metallic substances.

This semi-metal is chiefly found in Germany and in Norway. It is employed by pewterers, to communicate hardness to tin, and may be used instead of lead in the cupellation of metals. It resembles lead in many respects, and is thought to be dangerous when taken internally. Most metallic substances unite with Bismuth, and are thereby rendered more fusible; hence it is used in the making of solder, printers' types, &c. as well as pewter.

The calx of bismuth is said to promote the vitrification of earths, and of the refractory metallic calces, more powerfully than lead; and likewise to act as a more violent corrosive on crucibles, than the glass of lead itself. Hence, it is preferable to lead in the purification of gold and silver; destroying more effectually the baser metals with which they have been adulterated.

This semi-metal is most commonly lodged in cobalt ores; which, when of a high red, or peach bloom colour, are called *bismuth bloom*, or *flowers of bismuth*. A tincture drawn from the ore with aquafortis, and this afterwards mixed with a saturated solution of sea salt, and inspissated, yields a reddish salt; the watery solution of which is the *green sympathetic ink*. The characters written with this ink, disappear as soon as dry, but, on holding the paper to the fire, they become green and legible.

**BISTRE.** (F. *Bidauct*, *Bistre*; G. *Bister*, *Russ-schwärze*.) Is the burnt oil extracted from the soot of wood. It is of a brown transparent colour, having

much the same effect in water-painting, where alone it is used, as brown pink in oil. Though this colour is much valued, yet it is not in general use in this country, perhaps on account of its not being easily procured of a perfect kind. The best is that procured from France. Dry beech-wood affords the best soot for making it.

The goodness of Bistre may be perceived, by its warm deep brown colour, and transparency, when moistened with water.

**BITUMEN JUDAICUM**, *Jew's Pitch*. (F. *Asphalte*, *Bitume de Judée*; G. *Judenpech*; D. *Jodelym*; I. *Asfalto*, *Bitume giudaico*; S. *Asfalto*, *Betun judaico*; P. *Asphalto*, *Betume judaico*; DA. *Jödebeeg*, *Jodelüm*; Sw. *Judebeck*; POL. *Kleij ziemsky*; R. *Asfalt*, *Jidowskaia smola*; L. *Asphaltum*, *Bitumen judaicum*.)

This is a kind of pitch, which may be found floating on the waters of the lake Asphaltites, in Palestine, like large lumps of earth; and which, being driven by the winds to the eastern and western shores, adheres to them. It is then collected by the Arabs, and divided between them and the Bashaw of Damascus, who purchases their share of it, for some pieces of money, or such stuffs as they use for clothing.

This bitumen is a sulphureous substance, mixed with salt, which is gradually condensed by the heat of the sun. It is as brittle and shining as the black Stockholm pitch, which it so much resembles, that nothing but the bad smell of the latter, and the hardness of Asphaltum, can shew the difference. It is combustible; and exhales, while burning, a strong and penetrating smell.

The Jews formerly used it to embalm their dead; the Arabs gather it for pitching their ships; but Europeans use it in several medicinal compositions, as also for a fine black varnish, in imitation of that of China.

**BLACK LEAD.** (F. *Mine de plomb noir*, *Plomb de mine*, *Potelot*; G. *Pottloth*; D. *Potlood*; I. *Miniera di piombo*, *Piombaggine*; S. *Piedra mineral de plomo*; P. *Pedra mineral de chumbo*; DA. *Blyant*; Sw. *Blyerts*; POL. *Olowek*; R. *Tschernoi krandasch*, *Bleierz*; L. *Plumbago*.)

Black-lead is an inflammable substance, which, when fresh cut, appears of a blueish white, and shining, like lead; but when pure, becomes extremely black. It is micaceous, and minutely scaly; easily broken, and, when broken, of a granular, dull appearance. Black-lead is too soft to strike fire with steel: it is insoluble in acids; but in a very strong fire, when exposed to the air at the same time, it is entirely volatile, leaving only a little iron and a small quantity of siliceous earth. The substance evaporating is phlogiston and ærial acid.

Black-lead is found in different countries: as Germany, France, Spain, the Cape of Good Hope, and America; but, Malaga in Spain excepted, generally in small quantities, and of very different quality. The best sort, however, and the fittest of all for making pencils, is that met with at Borrowdale in Cumberland. It is found there in such plenty, that not only the whole island of Britain, but the whole continent of Europe, may be said to be supplied thence.

The principal use of black-lead, is for making pencils for drawing. One part of black-lead, with three of clay and some cow's-hair, makes an excellent coating for retorts; as it keeps its form, even after the retorts have melted. The powder of black-lead also serves to cover the straps for razors; and it is with that, the cast-iron work, such as stoves, &c. receive a gloss on their surface.

**BLACK PEPPER;** see **PEPPER.**

**BLUBBER** is the fat of whales and other large sea-animals, whereof is made train-oil, by boiling it down.

The whole quantity of blubber yielded by a whale, ordinarily amounts to forty or fifty, sometimes to eighty and more hundred-weights. See TRAIN OIL.

**BLUE VITRIOL, VITRIOL OF COPPER, OF ROMAN VITRIOL.** (F. *Vitriol bleu, Couperose bleue, Vitriol Romain, Vitriol de Chypre*; G. *Blauer Vitriol, Kupfer Vitriol, Römischer Vitriol*; D. *Blaauw Vitriool, Kopervitriool, Roomsche Vitriool*; I. *Vitriuolo turchino, di rame, ciprio*; S. *Vitriolo azul, de cobre, Romano, de Chipre*; P. *Vitriolo de cobre*; DA. *Blaa Vitriol, Kobber Vitriol, Blaate Kobbervand*; Sw. *Bla Vitriol, Koppar Vitriol*; POL. *Kopervas cypryjski, modry*; R. *Sinei Kuperos*; L. *Vitriolum cæruleum, Cyprinum, Romanum, Veneris.*)

If pure oil of vitriol be boiled on copper filings, or small pieces of the metal, it dissolves them into a liquor of a deep blue colour, which easily crystallizes. The crystals are of a beautiful blue colour, and are sold under the name of blue or Roman vitriol.

Where sulphur is found in great plenty, blue vitriol is made by stratifying thin plates of copper with sulphur; and, on slowly burning the sulphur, its acid corrodes the copper. The metal is then to be boiled in water, that the saline part may be dissolved. The operation is to be repeated, till all the copper is dissolved, and all the saline liquors are to be evaporated together, to the crystallizing point. By this method, however, a great part of the acid is lost; and in Britain, the pure acid must be preferable for those who prepare blue vitriol.

Vitriol of copper is chiefly employed in medicine as a caustic.

**BOARDS.** (F. *Planches, Ais*; G. *Bretern*; D. *Borden, Berden*; I. *Assi*; S. *Tablas*; P. *Taboas*; DA. *Bræder*; Sw. *Brüder*; POL. *Deski*; R. *Dos ki.*)

Boards are long pieces of timber sawed thin.

Deal boards are generally imported into England

ready-sawed, because this can be done cheaper abroad. Clap-boards are imported from Sweden and Dantzic ready-formed for coopers. Oak-boards chiefly come from Sweden and Holland, some from Dantzic. We also import white boards for shoemakers; mill and scale-boards, &c. for divers artificers. Scale-boards are a thin sort of board, used for the covers of primers, thin boxes, &c. They are made with large planes, but might probably be sawed with mills to advantage.

**BOLE.** (F. *Bol*, *Bol d'Armenie*, *Bol fin du Levant*; G. *Bolus*, *Bissen*, *Fetthon*; D. *Bolus*; I. *Bolo*; S. *Bol*; P. *Bólo*; DA. *Bolus*, *Fitleer*; Sw. *Bolus*, *Armenisk Bolus*; L. *Bolus Armeniaca rubra*, *Bohemica*, &c.)

Boles are viscid earths, less coherent and more friable than clay; more readily uniting with water, and more freely subsiding from it. They are soft and unctuous to the touch, and melt in the mouth, impressing a slight sense of astringency. Amongst the various sorts of these earths, the principal ones are the following:

The *Armenian* bole, of a bright red colour, with a tinge of yellow.

The *French* bole is of a pale red colour, variegated with irregular specks of white and yellow.

The bole of *Blois* is yellow, and remarkably lighter than most of the other yellow earths.

The *Bohemian* bole is of a yellow colour, with a cast of red, and generally of a flakey texture.

The *Lemnian* earth, is of a pale brownish red colour.

The *Silesian* bole, is of a pale yellow colour.

These and other earths made into little masses, and stamped with certain impressions, are called *terræ sigillatæ*. They are recommended as astringent, sudorific, and alexipharmic.

**BORAX.** (F. *Borax*; G. *Borax*; D. *Boras*; I. *Borrace*; S. *Borrax*; P. *Borax*; DA. *Borax*; Sw. *Borax*; POL. *Boraks*; R. *Bura, Borakss*; L. *Borax*.)

Borax is a saline salt, chiefly found in the province of Patna, in the East Indies. Hitherto the chemists in Europe have in vain attempted to counterfeit it. Some of them consider it as an alkaline salt, which is found, completely formed, in Indostan; others will have it to be the produce of volcanoes, or subterraneous fires.

Borax is of great use in the working of metals, by facilitating their fusion and purification. This substance being quickly vitrified by the action of fire, attracts the heterogeneous particles that are intermixed with these metals, and reduces them to dross. The borax is likewise absolutely necessary in the essaying of ores, and the soldering of metals. The Dutch alone formerly had the secret of refining it, but it is now likewise refined in Britain.

**BOX-WOOD.** (F. *Bois de Buis*; G. *Buxbaumholz*; D. *Palmenhout*; I. *Busso, Bosso, Bossolo*; S. *Bóx*; P. *Bucho, Búxo*; DA. *Buxbom*; Sw. *Buxbom*; POL. *Bukspan*; R. *Jamschit, Seleniza*; L. *Burus*.)

Box-wood is extremely hard and smooth, therefore well adapted to the use of the turner; combs, mathematical and musical instruments, works of sculpture, knife-handles, and button-moulds, being made of it. It may also, properly enough, serve as a substitute for ebony.

The box-tree formerly grew in great plenty, upon Boxhill, near Dorking in Surry; but now only few large trees are left.

Box-wood is chiefly imported from the Levant, sometimes also from Spain. The best quality ought to be in pieces of a good size, straight, and void of knots.

BRANDY. (F. *Eau de vie*, *Brandevin*; G. *Branntwein*; D. *Brandewyn*; I. *Acquavite*, *Acquarzente*; S. *Aguardiente*; P. *Bguardente*; DA. *Brændevin*; Sw. *Brännvin*; POL. *Gorzalka*, *Wodka*; R. *Wino*.)

Brandy is a spirituous and inflammable liquor, extracted from wine and other substances by distillation.

Wine brandy made in France, is esteemed the best in Europe. They make it wherever they make wine; and those accounted best, are the brandies of Cogniac, Bourdeaux, Rochelle, &c.

The general method of distilling brandies in France, differs in nothing from that practised here, in working from malt-wash or molasses; they only observe more particularly, to throw in a little of the natural ley into the still, along with the wine, and this seems to give their spirit the superior flavour for which it is admired. Some wines are much more proper for distillation than others. The wines of Languedoc and Provence afford a great deal of brandy by distillation, when the operation is performed on them in their full strength. The Orleans wines, and those of Blois afford yet more: but the best are those of the territories of Cognac and Andaye; which are, however, in the number of those the least drunk in France. Those of Burgundy and Champagne, though of a very fine flavour, are improper, as yielding but very little in distillation.

The wines of Spain, the Canaries, of Cyprus, of Grave, of Hungary, and others of the same kind, yield very little brandy by distillation, and consequently will not answer.

A large quantity of brandy is distilled in France, during the time of the vintage: for all those poor grapes, that prove unfit for wine, are usually first gathered, pressed, their juice fermented, and directly distilled. It is also a general rule with them, not to distil wine, that will fetch any price as wine; for in that state, the profits on them are vastly greater, than when reduced to brandies. The large stock of small

wines, with which they are almost overrun in France, sufficiently accounts for their making such vast quantities of brandies in that country, more than in others which lie in warmer climates, and are better adapted for the production of grapes. All the wine which turns sour, is also condemned to the still.

Our distillers imitate foreign brandies to a tolerable degree, by mixing dulcified spirit of nitre with British spirits. But the only method of imitating French brandies to perfection, is by an essential oil of wine; this being the very thing that gives them their flavour; the spirit, however, should be perfectly pure and tasteless: for it is in vain to expect, that this essential oil should correct the fulsome flavour of our malt spirits. To imitate Cogniac brandy, it is necessary that the essential oil should be distilled from Cogniac lees; and the same for any other kind of brandy.

French brandy, that has acquired by age a great degree of softness and ripeness, is observed at the same time to have acquired a yellowish brown colour, which seems to proceed from some of the resinous matter of the oak cask, dissolved in the spirit. Also this colour our distillers have endeavoured to imitate, by digesting extract of oak, or oak shavings, in spirit of wine. Treacle and burnt sugar are also used for colouring brandies.

The spirit distilled from molasses or treacle, is very clean or pure. But though much cleaner-tasted than malt spirit, it will not prove so vinous, unless good fresh wine-lees are added to and fermented with the molasses. By this addition, and if not sufficient, that of some good dulcified spirit of nitre, when brought to common proof strength, spirit of molasses, may be made to pass on ordinary judges for French brandy. Great quantities of this spirit are used in adulterating foreign brandies, rum, and arrack.

Brandy distilled a second time, is called *spirit of wine*; and this, after another rectification, is called *spirit of wine rectified*.



**BRASIL-WOOD.** (F. *Bois de Bresil*; G. *Brasilienholz*; D. *Brasilienhout*; I. *Legno de Brasile, Verzino*; S. *Brasil, Madera del Bresil*; P. *Páo Brasil*; DA. *Brasilentræe*; Sw. *Brasilia*; POL. *Brezylia*; R. *Brasilscoe derewo*; L. *Lignum Brazilianum*.)

Brasil-wood is a very heavy, hard, red wood, first brought from Fernambucco, a town of Brasil in South America; but the same sort of wood is also found in Japan and St. Martha; that of Fernambucco, however, is esteemed the best, and should be chosen in thick pieces, close, sound, and without any bark.

The true Brazilian is a large tree, with a reddish and thorny bark; the leaves small, obtuse, and of a fine shining green; the flowers a little sweet, and of a beautiful red hue; the pods flat and prickly, containing two compressed seeds, like those of the gourd.

The Brasil-wood brought to us, differs little otherwise, than as different parts of one log; some pieces being richer in colour than others. Many have confounded this wood with red saunders; but the two woods, chemically considered, are very obviously different; brasil-wood very readily communicating its red colour to water, whilst saunders gives no red tinge to any aqueous liquor. The watery tincture of Brasil-wood, however, is not quite so deep, as that made in rectified spirit of wine, or in volatile alkaline spirits.

Brasil-wood dyes woollen of a red colour, which does not want beauty, but has little durability. It is also used by turners.

**BRASILETTO WOOD.** (F. *Bresillot*; G. *Brasiletholz*; D. *Brasilethout*; I. *Brasileto*; S. *Brasilete*; P. *Brasileto*; DA. *Brasiletholt*; Sw. *Brasiletta*.)

The *cæsalpinia brasiletto*, *Brasiletto* or *Jamaica wood*, grows naturally in the warmest parts of America, whence it is imported for the dyers, who use it much. It is thought a very excellent timber, though in general of small diameter. The wood is elastic,

tough, and durable; takes a fine polish, is of a beautiful deep orange colour inclining to red, full of resin, and yielding an excellent tincture by infusion.

The demand for this wood has been so great, that none of the large trees are left in any of the British plantations. The largest remaining, are not above two inches in thickness, and eight or nine feet in height. The branches are slender, and full of small prickles; the leaves pinnated; the flowers white; and the pods inclose several small round seeds. The red colour produced from this wood, is greatly improved, by solution of tin in aqua regia.

BRASS; see COPPER.

BRIMSTONE. (F. *Soufre*; G. *Schwefel*; D. *Zwavel, Zolfer*; I. *Zolfo, Solfo*; S. *Azufre*; P. *Enxôfre*; DA. *Svovel*; SW. *Svafvel*; POL. *Siarka*; R. *Sjera*; L. *Sulphur*.)

Brimstone is a yellow, tasteless, hard, brittle, mineral substance; which when rubbed, becomes electric. It burns with a blue flame, and a disagreeable suffocating smell.

The name of sulphur, seems to be applied to brimstone, after it has undergone a refinement in this country; in the state in which the substance is imported, it is termed brimstone.

Brimstone is found, sometimes pure, but generally combined with other substances. If united with metals, it is called pyrites. Dr. Watson has shewn, in a paper on lead-ore, in the Philosophical Transactions, that no less than seven hundred tons are annually dissipated in the various lead-mines of England, for want of a different mode of purifying the ores. It has lately been discovered, that sulphur is formed by a natural process in animals and vegetables, beginning to putrify. It is found on stable walls and in privies. It is also extracted from vegetables, as the dock-root, cochlearia, &c. M. Deyeux obtained it from the

white of eggs. It has likewise been procured from horse-dung.

The brimstone used in Great Britain, is generally brought from volcanic countries. It abounds in inexhaustible quantities in Italy, and particularly the island of Sicily. The very first quality of Sicily brimstone is that of the Prince of Trabia, loaded at Lycata: it is constantly two tarins higher than the common sorts. The second sort is that of the Prince of Pantelaria, shipped at Palma, about one tarin dearer than common brimstone. The third sort in quality, is that of the Prince of Butera, shipped from Falconara or Lycata. Then comes the fabric of the Duc of Monteleone, loaded at Fiume di Nero, followed by that of the Prince of Catholica, shipped from Syculiana. These are all the best sorts of brimstone.

In Sicily, the brimstone is dug up by means of grooves, drove into the heart of the mountains; the mineral is brought up in small green lumps, and laid in large troughs lined with plaister. When the fire has heated them to the proper degree, the brimstone exudes through holes in the bottom, into wooden bowls placed under them.

A more refined sort of brimstone, than any of the Sicilian fabrics, is brought in rolls from Leghorn. The goodness and purity of brimstone, is to be distinguished by an uniform palish yellow colour, close texture, and small grain. Red or dark stripes are signs of inferior quality. When melted sulphur is gently heated, it flies off in a yellow powder, which is called *flowers of sulphur*, much used in medicine. A composition of nitre mixed with sulphur, is the ingredient for making oil of vitriol. Gunpowder is a mixture of sulphur, nitre, and charcoal. But a still more violent composition of which sulphur constitutes an ingredient, is fulminating powder, consisting of three parts of nitre, two of carbonate of potash, and one of sulphur. Sulphur is employed in medicine, both internally and externally. It is also used

in several arts. By means of it, fine impressions of engraved stones are taken. It is used for whitening wool, silk, and many other matters, by exposing them to its vapour during its combustion.

**BRISTLES.** (F. *Soies*; G. *Borsten*; D. *Borstels*; I. *Setole*; S. *Cerdas, Setas*; P. *Sedas, Cerdas*; DA. *Börster*; Sw. *Borst*; POL. *Szezeciny*; R. *Schtschetina*; L. *Sete*.)

Bristles are a rigid glossy kind of hair, growing upon the backs of swine, and much used by brush-makers, shoemakers, saddlers, and others. They are chiefly imported from Russia and Poland. The latter pass under the name of Königsberg bristles; and amongst the former, the Ukraine bristles are most esteemed.

**BRONZE**; see **COPPER**.

**BUCKWHEAT.** (F. *Blé Sarrasin, Blé noir*; G. *Buchweizen, Heidekorn*; D. *Boekweit*; I. *Grano Saraceno, Faggina, Fraina*; S. *Trigo Saraceno, Trigo negro*; P. *Trigo Saraceno*; DA. *Boghvede*; Sw. *Bohvéte*; POL. *Tatarca, Gryka, Pohanca*; R. *Gretscha*; L. *Fagopyrum*.)

Buckwheat is produced by the polygonum fagopyrum, which rises with an upright smooth branchy stem, from about a foot and a half to a yard high. The branches are terminated by clusters of whitish flowers, succeeded by large angular seeds.

Buckwheat is frequently cultivated, both by way of fodder, cutting its stalks while young and green, to feed cattle; and for its grain, to feed pigeons, poultry, hogs, &c. for which it affords excellent nourishment.

Several writers who lived in the beginning of the sixteenth century, consider buckwheat to be a plant, first introduced into Europe in their time, from Greece and the northern parts of Asia. After the

middle of the said century, it had become the common food of the poor in France.

That buckwheat was cultivated in England about the year 1597, is proved by Gerard's Herbal.

A new species of this grain has been made known of late years, under the name of Siberian buckwheat, which appears, by experience, to have considerable advantages over the former. It was brought from Tartary to Petersburg, in the beginning of the last century, and has thence been dispersed over all Europe.

**BUENOS AYRES HIDES.** (F. *Cuir de Buenos Ayres*; G. *Buenos Ayres Haute*.)

These are the hides of bull-oxen, dried in the hair, and imported from Buenos Ayres, a large country in South America, abounding in horned cattle. In such abundance are these animals there, that the hide alone is esteemed of any value.

**BUFF-SKINS; Buffs.** (F. *Buffle, Peaux de Buffles*; G. *Büffelhäute*; D. *Buffelsleer, Buffelhuiden*; I. *Bufalo, Cuojo di Bufalo*; S. *Ante*; P. *Couro de Bufalo*; DA. *Böfzelläder, Böfzellhuder*; Sw. *Buffelhuder*.)

Buff, is a sort of leather, prepared from the skin of the buffalo; which, dressed with oil, after the manner of the shamoy, makes what we call buff-skins. The principal manufactories of this article are in France and Germany, and it makes a very considerable article in the Levant trade. The skins of elks, oxen, and other like animals, when prepared in the buffalo manner, are likewise called buffs.

Buff-leather is used for sword belts and for other purposes, where its exceeding thickness and firmness is required.

**BUGLES.** (A. *Glassperian*; D. *Vennettianisc Paarlen*; DA. *Glasskoraller*; F. *Verroterie*; I. *Conitaria*; S. *Alberios*; P. *Missanga*.) Are small glass

beads, imported chiefly from Venice, and other parts of Italy. They are of various colours; of which large quantities are exported to Africa, and there exchanged for ivory, gum, bees-wax, &c.

**BULBS**; *Flower Roots*. (G. *Blumenturebln*; D. *Bollen*; DA. *Blomsterloger*; F. *Oignons de fleurs*; I. *Bulbi*; S. *Cebellos de flore*; P. *Cebellos de flore*.)

The importations of bulbs is chiefly from Holland.

**BULLION**; gold and silver in the mass. These metals are so called either when smelted from the native ore, or melted down in bars or ingots; the chief importations into Europe are from South America.

**BURGUNDY PITCH**; see **PITCH**.

**BURR STONES**. These are chiefly imported from France, and are rough stones, used for making mill-stones in their natural state.

**BUTTER**. (F. *Beurre*; G. *Butter*; D. *Boter*; I. *Burro*, *Butiro*; S. *Manteca*; P. *Manteiga*; DA. *Smör*; Sw. *Smör*; POL. *Maslo*; R. *Masslo Korowe*; L. *Butyrum*.)

Butter is the fat, oily, and inflammable part of the milk. Fresh butter, which has undergone no change, has scarcely any smell; its taste is mild and agreeable, it melts with a weak heat, and none of its principles are disengaged by the heat of boiling water.

The trade in butter is very considerable; some compute 50,000 tons annually consumed in London. The quantity of butter generally imported annually in the port of London, from York, Hull, Scarborough, and Stockton, is about 115,000 firkins; from Newcastle upon Tyne 15,700 firkins; and from the county of Suffolk 56,700 firkins. There are also annually brought to London, by land-carriage, about 75,000 firkins of Cambridge butter; and about 30,000

firkins from all other parts of the kingdom. Large quantities of butter likewise, are constantly imported from Scotland, Ireland, and Holland.

No butter is esteemed equal to that made in the county of Essex, well known by the name of Epping butter, in which at no time they mix much salt, though a little is absolutely necessary.

In many parts of this kingdom, they colour their butter in winter, to make it appear like May butter. Divers abuses are committed, in the packing and salting of butter, against which we have a statute express.

## C.

**CALAMINE.** (F. *Calamine*, *Pierre calaminaire*; G. *Galmey*; D. *Kalamyn*, *Kalamynsteen*; I. *Giallamina*, *Zelamina*, *Pietra calaminaris*; S. *Calamina*, *Piedra calaminar*; P. *Calamina*, *Pedra calaminaria*; DA. *Galmey*; SW. *Galmēja*; POL. *Galmaia*, *Galman*; R. *Kamen kalaminar*, *Galmeja*; L. *Lapis calaminaris*, *Calamina*, *Cadmia*.)

Calamine is the general ore of zinc, of a spongy substance, yet considerably heavy. It is, when most pure and perfect, of a pale brownish grey, and found in Saxony, Bohemia, and England. About the west-end of Mendip hills, in Somersetshire, lapis calaminaris is to be met with in great plenty, lying near the surface of the earth. It is of several colours, some white, some inclining to red, some grey, and some blackish.

Mixed with copper, lapis calaminaris, in virtue of the zinc it contains, makes brass. It is much used in medicine externally; and should be chosen for that use, as heavy, soft, and friable, as it can be had, and least debased by other substances.

**CAMPHIRE.** (F. *Camphre*; G. *Kampher*; D. *Kamfer*; I. *Canfora*; S. *Alcanfor, Canfor*; P. *Alcamphor*; DA. *Kampher*; Sw. *Kamfer*; POL. *Kamfora*; R. *Kamfora, Kanfora*; L. *Camphora*.)

Camphire is a volatile concrete, belonging to the class of essential oils; though camphire is always in a solid state.

It is the produce of the *Laurus Camphora*, a tree which grows naturally in the woods of the western parts of Japan, and the adjacent isles; but is now cultivated also in the isles of Sumatra and Borneo, and in China. We are informed, that in China some of these trees are found above one hundred cubits in height, and so thick, that twenty persons cannot inclose them. The China and Japan camphire is almost the only kind brought to Europe, and is inferior to that of Borneo and Sumatra.

All parts of the camphire tree are impregnated with the essential oil, though the roots contain most. It is extracted, by chopping the wood of the tree very small, laying it to steep in water, and distilling it.

Pure camphire is very white, pellucid, somewhat unctuous to the touch, of a bitterish aromatic taste, and fragrant smell. It possesses considerable antiseptic virtues, and is a good diaphoretic, for which purposes it is used in medicine. It is likewise employed in fireworks, and several other arts, particularly in making varnishes.

**CAMWOOD:** the fine red wood of Africa and the Brazils, chiefly used for making handles to knives and forks.

**CANTHARIDES.** (F. *Cantharides, Mouches d'Espagne*; G. *Spanische Fliegen*; D. *Spaansche Vliegen*; I. *Cantarelle*; S. *Cantaridas*; P. *Cantari-das*; DA. *Spanske Fluere*; Sw. *Spanska Flugor*; POL. *Kantarjdy, Hiszpanskie Muchy*; R. *Hischpanskie Muchi*; L. *Cantharides*.)



Cantharides differ from each other, in their size, shape, and colour. The largest are about an inch long, but others are not above three quarters of an inch. Some are of a pure azure colour, others of that of pure gold; and others, again, have a mixture of gold and azure colours; all very brilliant, and extremely beautiful.

These insects are more common in hot countries, such as Spain, Italy, and the South of France; though they are to be met with in all parts of Europe, at some seasons of the year; particularly among wheat and in meadows, upon the leaves of the ash, the poplar, the willow, the rose-tree, honeysuckle, lilac, wild cherry, &c. Such numbers of these insects are sometimes together in the air, that they appear like swarms of bees, and they have so disagreeable a smell, that it may be perceived a great way off, especially about sunset, though they are not seen at that time. This smell is a guide for those, who make it their business to catch them.

Those that gather them, tie them in a bag or piece of linen cloth, that has been well worn; upon which they are killed with the vapours of hot vinegar, and then dried in the sun, and kept in boxes.

When dried, they are so light, that fifty of them will hardly weigh a dram. Those that are dry, fresh, and whole, are the best. The Sicilian cantharides, and particularly those of Mount *Ætna*, are reckoned preferable to those of Spain. They are found there particularly on the pine and fig tree, the juice of which is supposed to impart to them a corrosive and abstersive quality.

Cantharides taken inwardly as medicine, act as a stimulus upon the urinary passages, and should be used with great care. Outwardly, they are the basis of blistering-plasters, by mixing their powder with some proper ointment.

CAPERS. (F. *Capres*; G. *Kappern*; D. *Kap-*

*pers*; I. *Cappari*; S. *Alcaparras*; P. *Alcapparus*; DA. *Kapers, Kappers*; Sw. *Kapris, Capris*; POL. *Kapary*; R. *Kaperszű*; L. *Capparis*.)

Capers are the pickled buds of the *capparis spinosa*, a low shrub, generally growing out of the joints of old walls and the fissures of rocks, in most of the warm parts of Europe.

Capers are imported into Great Britain, from different parts of the Mediterranean; the best from Toulon in France. Some small salt capers come from Majorca, and a few flat ones from about Lyons.

Capers are chiefly used as a pickle in sauces, and are supposed to excite appetite and to assist digestion. In medicine, they are considered particularly useful as detergents and aperients, in obstructions of the liver and spleen.

**CARAWAY SEED.** (F. *Carvi, Cumin des près*; G. *Kuemmel*; D. *Karwey, Veldkomyn*; I. *Carvi*; S. *Alcaravea*; P. *Alcaravia, Alchirivia, Chirivia*; DA. *Kummen, Dansk Kummen, Karve*; Sw. *Kummin, Brodkumin, Karf*; POL. *Karuy, Kmin polny*; R. *Dikii Timon*; L. *Carvi*.)

The *carum carvi* plant, grows spontaneously in many parts of Great Britain; but its seed is mostly imported for use, from Provence and Languedoc in France.

Caraway is a small, narrow, longish seed, furrowed on the back; of an aromatic smell, and warm pungent taste. It is used in biscuits, seed cakes, and confections; incrusted with sugar as a sweetmeat, and distilled with spirituous liquors, for the sake of its flavour.

**CARBUNCLE.** (F. *Escarboucle*; G. *Karfunckelstein*; D. *Karbonkel*; I. *Carbonchio*; S. *Carbunclo, Carbunculo*; P. *Carbunculo*; DA. *Karbunkel*; Sw. *Karbunkel*; POL. *Karbunkul*; R. *Karbunkel*; L. *Carbunculus*.)

Carbuncle is a very elegant gem, of a deep red colour, with a mixture of scarlet.

Its usual size is nearly a quarter of an inch in length, and two-thirds of that in diameter in its thickest parts. When held up against the sun, it loses its deep tinge, and becomes exactly of the colour of a burning charcoal; whence the propriety of the antients calling it *anthrax*. It bears the fire, unaltered. It is very rare, and only found in the East Indies.

**CARDAMOM.** (F. *Cardamomes*; G. *Kardamömlein*; D. *Kardemomen*; I. *Cardamomi*; S. *Cardamomos*; P. *Cardamomos*; DA. *Cardamomer*; Sw. *Kardemummor*; POL. *Kardamom*; R. *Kardamon*; L. *Amomum, Cardamomum*.)

This plant is a species of the same genus as the grains of paradise and ginger. It is little known in this country, except by its seeds, which are used as medicine, and in the kitchen. It is a native of India, and divided into two sorts, *cardamomum majus* and *minus*. The first, when it comes to us, is a dried fruit or pod, about an inch long, containing under a thick skin, two rows of small triangular seeds of a warm aromatic flavour. The *cardamomum minus* is a fruit, scarcely half the length of the foregoing, but considerably stronger both in smell and taste. They are to be chosen large, new, sound, close shut in all parts, of a good colour, full of seeds, free from dust, and of a strong, agreeable smell.

**CARMINE.** (F. *Carmin*; G. *Karmin*; D. *Karmin*; I. *Carminio*; S. *Carmin*; P. *Carmin*; DA. *Carmin*; Sw. *Carmin*; POL. *Karmin*; R. *Karmin*; L. *Carminium*.)

A very beautiful red colour, bordering upon purple. The manner of preparing it is kept a secret by the colour-makers, though there is no doubt that it is a preparation of cochineal.

Carmine is used by woollen-drappers, to colour and hide defective places in scarlet cloth; it is also used by miniature painters, and sometimes by painters in oil; though rarely by the latter, on account of its very high price.

**CASSIA BUDS.** (F. *Fleurs de Casse*; G. *Kassiablüthe*, *Kassiablumen*; D. *Kassiebloemen*; I. *Fiori di Cassia*; S. *Flor de arbol de Canela*; P. *Flores de Cassia*; DA. *Cassieblomstre*; Sw. *Cassiablomster*; L. *Flores Cassiæ*.)

Cassia buds are the buds of the flowers of the *laurus cassia*, or cassia lignea tree. They are used by distillers in conjunction with cassia lignea, for preparing cinnamon-water; and imported from different parts of the East Indies and China.

**CASSIA FISTULA;** *Cassia in the Cane.* (F. *Cassia solutive*, *Casse en batons ou en canons*, *Cane-fice*, *Cassefistule*; G. *Kassia*, *Roehrenkassia*, *Purgier Kassia*; D. *Kassie*, *Pypkassie*, *Rietkassie*, *Purgeerende Kassie*; I. *Cassia fistola*; S. *Canafistola*, *Casia purgante*, *Casia fistola*; P. *Cassia purgante*, *Canafistula*; DA. *Cassia*, *Roercassia*; Sw. *Cassia*, *Rærcassia*; POL. *Fistula*; R. *Kassia*; L. *Cassia-fistula*.)

This is the purgative fruit or pods of the cassia fistula, black or purging cassia, a tree originating from Egypt and both Indies, where it rises to the height of forty or fifty feet. The flowers are produced in long spikes at the end of the branches, and are succeeded by cylindrical pods, from one to two feet and upwards long, with a dark brown woody shell, divided into many cells by transverse partitions, each containing one or two oval, smooth, compressed, yellowish seeds, lodged in a blackish, soft, sweetish pulp, which is used in medicine. Those pods are best, that are fresh, full, and will not rattle when shaken.

There are two sorts of this drug in the shops; one brought from the East, the other from the West In-

dies ; the canes or pods of the latter, are generally large, rough, thick-rinded, and the pulp nauseous ; those of the former are less, smoother, the pulp blacker, and of a sweeter taste. This is probably owing to a difference in soil and culture. In Jamaica, the finest fruit is produced from trees growing in a rich deep mould, in some warm and well sheltered vale.

For using this fruit, the pulp is taken out of the pods and sifted ; though apothecaries use little of this kind, but what is old and boiled up with sugar to make it keep.

**CASSIA LIGNEA.** (F. *Cassia tignea*, *Casse en bois*, *Cunelle de la Chine* ; G. *Cassia lignea*, *Kassienrinde* ; D. *Houtkassie*, *Moederkaneel* ; I. *Cassiligna* ; S. *Casia lenosa*, *Casalignea* ; P. *Cassia lenhosa* ; D<sub>A</sub>. *Moderkaneel* ; Sw. *Modercanel* ; L. *Cassia lignea*.)

The bark of *laurus cassia*, *cassia lignea*, or base cinnamon, is imported from different parts of the East Indies and from China ; particularly from Timor, Java, Mindanao, and the Malabar coast. It has a very near resemblance to cinnamon, though distinguishable from it, by being of a more thick, red, and coarse appearance, and by its breaking short, and smooth, while the cinnamon breaks fibrous and shivery. It resembles cinnamon still more exactly, in its aromatic flavour, than in its external appearance ; and seems only to differ from it in being somewhat weaker, in abounding more with a viscous mucilaginous matter, and in being less astringent.

It frequently serves as a substitute for the more expensive article of cinnamon, particularly in medicine : as almost the whole of what is at present sold under the title of either simple or spirituous cinnamon-water, is entirely prepared from cassia ; and not

even entirely from the bark, but from a mixture of the bark and buds.

**CASTOREUM.** (F. *Castoreum*; G. *Bibergeil*; D. *Beevergeil*; I. *Castorio*; S. *Castoreo*; P. *Castoreo*; DA. *Bævergel*; Sw. *Bäsvergüll*; POL. *Stroybowry*; R. *Bobrowaja struja*; L. *Castoreum*.)

Castoreum was formerly believed to be the produce of the testicles of the beaver; but later discoveries have shewn that it is contained in four bags situated in the lower belly of that animal. Two of these, which are called the superior, from being more elevated than the others, are filled with a soft, resinous, adhesive matter, mixed with small fibres, greyish without and yellow within, of a strong, disagreeable and penetrating scent, an acrid, bitterish, and nauseous taste, and very inflammable. This is the true castoreum: it hardens in the air, and comes to us in round, brown, brittle, and friable balls, of a red liver-colour within. The inferior bags contain an unctuous liquor like honey, which in time becomes about the consistence of tallow, but its odour is rather weaker and more disagreeable than that of the true castoreum.

The best sort of castoreum is what comes from Russia; an inferior sort, brought from Dantzick, is generally fat and moist; and the American castoreum, which is the worst of all, is in longish thin balls.

Castoreum is looked upon as one of the capital nervine and antihysterical medicines.

**CASTOR-OIL** (F. *Huile de Ricin*; G. *Unæchtes Palmoel*, *Ricinus-oel*; I. *Olio di Ricino*; S. *Aceyte de Ricino*, *ó Palma Christi*; P. *Oleo de Ricino*; L. *Oleum Palmæ Christi*, *Oleum Ricini*.)

Castor-oil is extracted from the kernel of the fruit, producèd by the *ricinus Americanus*, or oil-nut tree,

which grows in many parts of America, and is now much cultivated in Jamaica. It is raised from the nut or seed, grows with a surprizing rapidity to the height of fifteen or sixteen feet, and seems to flourish most in gulleys, or near running water, in cool shady spots. The seeds being freed from the husks or pods, which are gathered upon their turning brown, and when beginning to burst open, are first bruised in a mortar, afterwards tied up in a linen bag, and then thrown into a large pot, with a sufficient quantity of water (about eight gallons to one gallon of the seeds), and boiled till their oil has risen to the surface; this is carefully skimmed, strained, and kept for use. One gallon of nuts will yield about one quart of oil. Thus prepared, it is entirely free from all acrimony, and will freely stay upon the stomach, when it rejects most other medicines.

But when intended for medicinal use, the oil is more frequently cold-drawn, or extracted from the bruised seeds, by means of a hand-press; though this is thought more acrimonious than what is prepared by coction. The cold-drawn oil is at first perfectly limpid, but, after being kept for some time, acquires a pale tincture, resembling Lisbon wine; probably caused by the membrane which covers the kernels.

This oil is most usually obtained in Great Britain from the seeds imported in barrels. It is not subject to contract rancidity, unless it is made from parched or roasted seeds, which are impregnated with an empyreuma. Castor-oil is used internally in medicine, as a gentle purgative, and externally for removing cramps, &c.

CAVIARE. (F. *Caviar*, *Cavial*; G. *Kaviar*; D. *Kavejuar*; I. *Caviario*, *Caviale*; S. *Caviario*; P. *Caviario*; D<sub>A</sub>. *Caviar*; Sw. *Caviar*, *Kaviar*; Pol. *Ikra*; R. *Ikra*; L. *Caviarium*.)

Caviare is the spawn or roes of sturgeon; it is ei-

ther salted, dried, and made into small cakes, or sometimes in its natural state packed up in kegs.

This sort of food is in great repute in Russia, on account of their three Lents.

The sturgeon is found at the mouth of most of the rivers in Russia, particularly those which fall into the Caspian Sea. The sturgeon caught at the mouth of the Wolga, near Astrachan, is of a prodigious size; and it is confidently affirmed, that one of their roes will weigh three-hundred pounds.

There is a pretty large quantity of this commodity consumed in Italy; and they are well acquainted with it also, in France and England.

CAYAN; or *Cayenne Pepper*; see GUINEA PEPPER.

CEDAR-WOOD. (F. *Cèdre*; G. *Cederholz*; D. *Ceder*; I. *Cedro*; S. *Cedro*; P. *Cedro*; DA. *Cedertræ*; Sw. *Cedertraed*; POL. *Cedr*; R. *Kedr*; L. *Cedrus*.)

The *Pinus Cedra*, commonly called by us Cedar of Lebanon, and sometimes the Phœnician or Syrian Cedar, is a coniferous evergreen of the bigger sort, bearing large roundish cones of smooth scales, standing erect, the leaves being small, narrow, and thick-set.

Cedar-wood is reputed almost immortal and incorruptible: a prerogative which it owes chiefly to its bitter taste, which the worms cannot endure.

If this tree abounded with us, it might have a principal share in our most superb edifices. The aromatic effluvia, constantly emitted from its wood, are said to purify the air, and make rooms wholesome. Chapels and places set apart for religious duties, being wainscoted with cedar-wood, inspire the worshippers with a more solemn awe. On account of the great durability of cedar-wood it was, that the an-



tients used cedar tablets to write upon, especially for things of importance. A juice was also drawn from cedar, with which they smeared their books and writings, or other matters, to preserve them from rotting. In the temple of Apollo at Utica, there were cedar-trees near two-thousand years old; which yet were nothing to that beam of an oratory of Diana at Seguntum in Spain, said to have been brought thither two-hundred years before the destruction of Troy.

From the account of the latest travellers to Mount Lebanon, it appears, there are but very few cedar-trees remaining there.

They sometimes counterfeit cedar, by dying wood of a reddish hue: but the smell discovers the fraud, that of true cedar being very aromatic. In some places, the wood of the cajou-tree passes under the name of Cedar, on account of its reddish colour, and aromatic smell.

CERUSE; see WHITE LEAD.

CHEESE. (F. *Fromage*; G. *Kaese*; D. *Kaas*; I. *Fromaggio*, *Cacio*; S. *Queso*; P. *Queijo*; DA. *Ost*; Sw. *Ost*; POL. *Ser*; R. *Sür*; L. *Caseus*.)

Cheese is a kind of food, prepared of curdled milk, purged from the whey, and afterwards dried for use.

Cheese differs in quality, according as it is made from new or skimmed milk; from the curd which separates spontaneously on standing, or that which is more speedily produced by the addition of rennet. Cream, also, affords a kind of cheese, but quite fat and butyraceous, and which does not keep long.

Every country has places noted for this commodity: thus Chester, Gloucester, and Stilton cheese, are famous in England. In Switzerland, there is a kind of medicated herb or green cheese, made by intimately mixing the juice of certain herbs with the curd, before it is formed into a cheese: of this kind

is the Schabzieger cheese, made in the Canton of Glaris in Switzerland. An Italian kind of cheese, called Parmesan cheese, is particularly famous all over Europe. It is known in Italy under the name of Lodi, a territory adjacent to the Parmesan, and abounding in excellent pasture. The good qualities of this cheese are, to be new, of a yellow taste, close, and without eyes. Holland furnishes several countries with a prodigious quantity of cheese. The Gouda and Edam cheeses have a great repute.

The method of making Gloucester-cheese, in England, is as follows. The best Gloucester-cheese is made from new milk, and for every cheese, only one meal's milk ought to be used. This must be changed or turned with the rennet. When the milk is turned, the whey should be carefully strained from the curd, and the latter put into the vat equally broken, taking care to put first a cheese-cloth under it. The vat is then taken to the press for two hours; after which, it should be turned, to have a clean cloth put under it, and then turned back. It must then be pressed again, for six or eight hours; when it should again be turned, and rubbed with salt. After this, it must be pressed a third time, for the space of twelve or fourteen hours more; when, if any of the edges project, they should be pared off. It may then be put on a dry board, where it should be regularly turned every day.

The quantity of cheese annually imported in London, is about 5,760 tons of Cheshire cheese; thin cheese, from Hull and Gainsborough, 1,400 tons; from Suffolk, 980; and from Newbury, Abingdon, and other places, by barges, 2,400 tons.

Cheese, when analysed chemically, appears to partake much more of an animal nature than butter, or the milk from which it is made. Shaved thin, and properly treated with hot water, it forms a very strong cement, if mixed with quick-lime. As a food, physicians condemn the too free use of it. When new,

it is extremely difficult of digestion; when old, it becomes acrid and hot, and is of a septic nature. Cheese made from the milk of sheep, digests sooner, than that from the milk of cows, but is less nourishing; that from the milk of goats digests sooner than either, but is also the least nourishing.

**CHESNUTS** (F. *Chataignes*; G. *Kastanien*; D. *Kastanien*, *Karstengen*; I. *Castagne*; S. *Castanas*; P. *Castanhas*; DA. *Kastanier*; Sw. *Kastanier*; POL. *Kasztany*; R. *Kaschtanü*; L. *Castanea*.)

The *fagus castanea*, or chesnut-tree, has a large upright trunk, growing commonly forty or fifty feet high, branching regularly round into a fine spreading head, garnished with large spear-shaped, acutely serrated leaves, naked on the upper side, having flowers in long amentums, succeeded by round prickly fruit, containing two or more nuts.

Chesnuts grow wild in this country, but never equal those, in size and perfection, which are imported from Spain and Italy. Foreign chesnuts are frequently kiln-dried, to prevent their sprouting in the passage; and in that case are unfit for seed.

The chesnut-trees sometimes grow to an immense size, and the largest of the known world, are those growing upon Mount Ætna in Sicily. The most bulky of them is known by the name of *The Chesnut-tree for a hundred horses*; and is one hundred and sixty feet in circumference, but quite hollow within. The people have built a house in the cavity of this enormous mass. At Tortworth in Gloucestershire, is a chesnut-tree, fifty-two feet in circumference, which is probably near a thousand years old.

**CHINA ROOT.** (F. *Squine*, *Esquine*; G. *China-wurzel*; D. *Chinawortel*; I. *Radice China*; S. *Raiz China*, *Cocolmeça*; P. *Esquina*, *Eschineza*, *Raiz da China*; DA. *Chingarod*; Sw. *Chinarot*; POL. *Chyna*

*korzen*; R. *Koren tschaputinskii*; L. *Radix Chinae*, *Smilax*.)

This root comes from the West and East Indies, and is composed of many thick fleshy fibres, which spread widely on every side, and strike deeply into the ground; from which come out several stalks; taper, very strong, and armed with short stiff pines. They fasten themselves by their claspers to the neighbouring trees, and rise twenty feet high, and upwards. The root is without either taste or smell, heavy, woody, hard, and beset with unequal tubercles. The colour of that coming from the West Indies, is on the outside of a dusky red, but within of a reddish white; the Oriental root is of a blackish cast, and more valuable.

This article enters into the materia medica; but its virtues, in venereal cases, are not now in such repute as formerly.

**CHOCOLATE.** (G. *Schokolade*; D. *Shokolade*; F. *Chocolat*; I. *Ciocolata*; SP. *Chocolate*.)

A kind of paste, or cake prepared from the cocconut. The Spaniards, who are famous for making this article, mix it with too great a quantity of cloves and cinnamon.

**CINNABAR.** (F. *Cinnabre*; G. *Zinnober*; D. *Cinaber*, *Vermilioen*; I. *Cinabro*; S. *Cinabrio*; P. *Cinabrio*; DA. *Zinober*; SW. *Cinnober*; POL. *Cynobr*; R. *Kinowar*; L. *Cinnabari*.)

Cinnabar is a mineral-stone, red, heavy, and brilliant. It is either native or artificial. *Native* cinnabar, in which quicksilver is mineralized by sulphur, is of different shades, from a yellowish to a deep red. A hundred parts of cinnabar contain about eighty of quicksilver, and twenty of sulphur: but *artificial* cinnabar contains a little more sulphur, and hence its colour is darker. It is obtained by sublimation,

and thus reduced into a fine red glebe. The best is of a high red colour, and full of fibres, like needles.

The chief use of cinnabar is for painting. Lumps of it are of a deep brown red, without brilliancy; but when the too great intensity of its colour is diminished by bruising and dividing it into small parts, the red of the cinnabar becomes more and more exalted, flame-coloured, and exceedingly vivid and brilliant: in this state, it is called *vermillion*, or cinnabar in flowers.

Native cinnabar is found in the Duchy of Deux Ponts, in the Palatinate, in Hungary, Friuli, at Almaden in Spain, &c.

The finer-coloured ores of quicksilver, are never worked for extracting the metal, but used entirely as pigments; they have been very injudiciously preferred for medicinal uses, to the more pure factitious cinnabars.

**CINNAMON.** (F. *Cannelle*; G. *Zimmet*, *Kanehl*; D. *Caneel*; I. *Canella*; S. *Canela*; P. *Canella*; DA. *Caneel*; SW. *Canel*; POL. *Cynamom*; R. *Koriza*; L. *Cinnamomum*, *Canella*.)

Cinnamon is the bark of the *laurus cinnamomum*. There is a base kind of cinnamon, obtained from the *laurus cassia*; for which, see **CASSIA LIGNEA**.

The cinnamon-tree is a native of Ceylon. It has a large root, and divides into several branches, covered with a bark, which on the outer side is of a greyish brown, and on the inside of a reddish cast. The body of the tree, which grows to the height of twenty or thirty feet, is covered, as well as its numerous branches, with a bark, which at first is green, and afterwards red. The leaf is three-nerved; when first unfolded, it is of a flame-colour, but afterwards changes to a green. The flowers are small and white. The fruit is shaped something like an acorn, but is not so large.

Cinnamon is the under-bark of the cinnamon-tree.

The best season for separating it from the outer bark, which is grey and rugged, is the spring, when the sap flows in the greatest abundance. It is cut into thin slices, and exposed to the sun, and curls up in drying. The old trees produce a coarse kind of cinnamon, and the spice is in perfection only, when the trees are not older than three or four years. When the trunk has been stripped of its bark, it receives no further nourishment; but the root is still alive, and continues to throw out fresh shoots. The cinnamon is not reckoned excellent, unless it be fine, smooth, brittle, thin, of a yellow colour inclining to red, fragrant, aromatic, and of a poignant yet agreeable taste. The connoisseurs give the preference to that, the pieces of which are long and slender. It comes to us generally mixed with cassia lignea; though the latter is easily distinguished. Cinnamon splinters in breaking, and has a roughness along with its aromatic flavour; while the cassia breaks over-smooth, and has a mucilaginous taste. Cinnamon is a very useful and elegant aromatic, more grateful, both to the palate and stomach, than most other substances of this class. By its astringent quality, it likewise corroborates the viscera.

It is supposed that Ceylon yields a million of pounds of cinnamon annually; and as only 600,000lb. thereof were sold, during the time the island belonged to the Dutch, the rest was destroyed, in order to keep up the price.

The cinnamon-tree is now likewise cultivated in Jamaica; and the cinnamon produced, is said to be by no means inferior to that coming from the East Indies.

**CIVET.** (F. *Civette*; G. *Zibeth*; D. *Civet*; I. *Zibetto*; S. *Algalia*; P. *Algalia*; DA. *Zibet*; Sw. *Zibet*; POL. *Zybet*; R. *Zibet*; L. *Zibethum*.)

Civet is a kind of perfume, which bears its name from the civet-cat, the animal it is taken from.

Good civet is of a clear, yellowish, or brownish

colour; not fluid nor hard, but about the consistence of butter or honey, and uniform throughout; of a very strong smell, quite offensive when undiluted, but agreeable, when only a small portion of civet is mixed with a large one of other substances. It unites easily with oils, both expressed and distilled, but not at all with water or spirit of wine. It communicates, however, some share of its smell, both to watery and spirituous liquors, by being suspended in the still-head, during distillation. The Italians make it an ingredient in perfumed oils, and thus obtain the whole of its scent: for, oils wholly dissolve the substance of it.

It is very rare to meet with civet unadulterated. The substances usually mixed with it, are lard and butter: and it is impossible to distinguish the adulteration.

A great trade of civet is carried on at Callicut, Bassora, and other parts of the East Indies, and in Africa, where the animal that produces the perfume is found. It is mostly used by confectioners and perfumers.

**CLOVER-SEED.** (F. *Graine de Trèfle*; G. *Kleesaat*; D. *Klaver-zaad*; I. *Semenza di Trifoglio*; S. *Semilla de Trebol*; P. *Semente de Trevo*; DA. *Kleverfrö*; Sw. *Väpling-frö*; POL. *Koniecz, Konik*; R. *Trilistnik*; L. *Trifolium*.)

There are forty-six species of clover, of which two principally deserve our notice, on account of the seed.

First; the white creeping trefoil, *trifolium pratense*, or Dutch clover. It grows in England, Holland, and Germany; and its white seed is brought to us in considerable quantities from the two latter countries.

Then; the purple or red clover, *trifolium pratense*. This is the species, most cultivated as food for cattle. The finest seed grows in this country; but large quantities are brought to us from Germany, Holland, Brabant, Flanders, and the northern coast of France, as

far as Bourdeaux. Amongst the foreign red seed, that coming from Brabant and Flanders seems to deserve the preference, on account of its bright red colour, shaded with blue and yellow.

White is generally dearer than red clover-seed.

In purchasing clover-seed, particular attention should be paid to its being new, of a bright, lively colour; the grains large, full, and heavy; and the mass perfectly free from all seeds of weeds, and other extraneous bodies.

**CLOVES.** (F. *Cloux de Girofle*; G. *Gewörznelken*; D. *Kruidnagelen, Geroffles*; I. *Chiovi di Garofano, Garofani, Garoffoli*; S. *Clavos de Especia, Clavillos*; P. *Cravos da India, Cravos girofes*; DA. *Neliker, Krydenelliker*; Sw. *Kryddeneglikor*; POL. *Goździki kramne*; R. *Gwosdika*; L. *Caryophyllu.*)

The caryophyllus aromaticus, or clove-tree, is a native of the Molucca Islands, particularly of Amboyna, where it is principally cultivated. It resembles the birch-tree in appearance, and its bark is thin and smooth, like that of the beech. No verdure is ever seen under it. Its trunk, which is composed of an exceedingly hard wood, does not rise to any height, but divides itself into several principal branches, the boughs of which are covered with leaves and flowers in the month of March. The leaves are always placed opposite to each other, dotted, smooth, and not serrated; almost resembling in form and consistence those of the laurel. At the extremities of the branches, vast quantities of flowers are produced, which are first white, then green, and at last pretty red and hard. When they arrive at this degree of maturity, they are, properly speaking, cloves. As they dry, they assume a dark yellowish cast; and when gathered, become of a deep brown. The season for gathering them, is from October to February. The boughs of the trees are then strongly shaken, or the cloves beaten down with long reeds. Large



cloths are spread to receive them, and they are afterwards exposed for a few days, upon hurdles, to the smoke of the bamboo-cane. This fumigation, to which the heat of a stove might perhaps be substituted to advantage, is followed by drying the cloves in the sun. Those cloves, which are purposely left upon the tree, or which escape the notice of those who gather them, continue to grow, till they are about an inch in thickness; and falling off, produce new plants, which do not bear in less than eight or nine years.

The clove, to be in perfection, must be full-sized, heavy, oily, and easily broken; of a fine smell, and hot aromatic taste; so as almost to burn the throat. In the East Indies, and also in some parts of Europe, cloves are so much admired, as to be thought an indispensable ingredient in nearly every dish. They are put into food, liquors, wine, and enter likewise the composition of perfumes.

In medicine, cloves possess, in an eminent degree, the general virtues of hot, stimulating aromatics.

No part of any plant, contains so much oil, as cloves do. Cloves acquire weight by imbibing water; which they will do at some considerable distance. For this reason the Dutch, after they have sold their cloves, hang them, before the weighing, over water, at about two feet distance from it.

In Amboyna, the Dutch East-India Company had 500,000 clove trees, which produced more than a million pounds of cloves annually.

COALS; see PIT-COALS.

COBALT. (F. *Cobalt*; G. *Kobalt*; D. *Kobald*; I. *Cobalto*; S. *Cobalto*; P. *Cobalto*; DA. *Kobold*; Sw. *Cobolt*; POL. *Kobolt*; R. *Kobolt*; L. *Cobaltum*.)

What we have commonly under the name of cobalt, is only calx. Regulus of cobalt, or more pro-

perly, pure cobalt itself in a metallic form, is a semi-metal of a reddish white colour, close-grained, so as to be easily reducible to powder, about 7.7 of specific gravity, and forming itself into masses of a needle-like texture, placed upon one another.

The calx of cobalt has the property, that it can be melted into a blue glass, called *smalts*; for which see under that head.

When cobalt is first roasted and freed from the foreign mineral bodies, particularly bismuth and arsenic, with which it is united, it is then well calcined, and sold either mixed or unmixed with fine sand, under the name of *zaffer*. It is of a grey colour, and *zaffer* therefore is an impure calx of cobalt.

The solution of cobalt in aqua regia, has been long known as a sympathetic ink.

Cobalt is found in Saxony, Sweden, Norway, and England; particularly in Somersetshire and Cornwall; but Saxony seems to be the only country where the working of the cobalt-mines is much attended to. It is principally exported thence, reduced into *zaffer*, to Holland; where it is prepared into *smalts*.

**COCCULUS INDICUS**, is the berry of an Oriental plant, a species of *solanum*, producing the fruit in clusters like grapes. These berries, are partly about the size of bay-berries, and partly about that of chick-peas; roundish, but hollowed-in a little towards the stalk, and approaching to a kidney-shape; rough on the outside, and of a grey brownish or blackish colour. The fresher they are, the heavier: the older, the drier and lighter. This berry is principally employed in ointments for destroying cutaneous insects, and in fishing. It is brought to us from Alexandria and other parts of the Levant; also from the coast of Malabar.

**COCHINEAL.** (F. *Cochenille*; G. *Cochenille*, *Scharlach-wurm*; D. *Conchénilje*; I. *Cocciniglia*; S.

*Cochinilla*, *Granà* ; P. *Cochenilha* ; DA. *Cochenille* ; Sw. *Cochenille* ; POL. *Cochenilha* ; R. *Konssenel* ; L. *Cochinella*, *Cocci-cactus*.)

The cochineal insect, to which we owe our beautiful scarlet and purple colours, has not yet been found any where but in Mexico.

It is asserted, from the testimony of the best writers, that the nature of this colour was not known till the year 1692, when father Plumier Pomet gave an account of its being an animal ; and that, before this period, the world knew nothing more of it, than that it was gathered from certain plants in Mexico ; on which account it was naturally supposed to be a seed. On searching into the originals, however, we find, that Acosta in 1530, and Herrera in 1601, had described it, as well as our modern naturalists.

The cochineal is an insect much of the size and shape of a bug. It is bred upon the nopal, cactus, or Indian fig, a shrub common all over New Spain, about five feet high. Its stem is fleshy, large, flattened, downy, and covered with clusters of thorns. It branches out very much, and grows narrow, as well as its branches, at every point of ramification : this gives to each portion of the plant, thus made narrow, the form of an oval, thick, and thorny leaf. It has no other leaves but these. Its flowers scattered over the young stems, are succeeded by a fruit that is fit for eating, and resembles a fig.

The cochineal insect, like all others, is of two sexes, but which are exceedingly dissimilar in their appearance. The female, which alone is valuable for its colour, has the eyes, mouth, and antennæ, fixed so deep, and so concealed in the folds of the skin, that it is impossible to distinguish them without a microscope. From the first instant of its birth almost, it remains attached to one point of the plant, by a kind of trunk, and presents to the eye only an hemispherical crust. This covering is changed twice in twenty-five days, and is sprinkled over with a white and thick

dust, which is immiscible with water. At this period, which is that of puberty, the male, which is smaller, more active, and more slightly made, issues out of a farinaceous tube, by means of wings with which he is provided. He flutters over the immoveable females, fixes upon each of them, and soon perishes after fecundation. The male is very scarce, and one is said to be sufficient for three hundred females or more. The bulk of the female afterwards visibly enlarges, till a drop of liquid, which escapes from under her, shews that the eggs, which are in great number, will soon make their appearance. The little insects burst their covering at the time of their birth, and soon spread themselves over the plant, to choose a favourable spot to fix upon. They particularly endeavour to shelter themselves from the east wind. Accordingly, the nopal, when viewed on that side, appears quite green, while, on the opposite side, it is full of the insects and white.

The best method of keeping the nopal plantations in order, is to re-plant them every six years, by putting several pieces of the stems into cavities of some depth. They must be weeded frequently, but with precaution, in order not to disturb the insect. The cultivator must also take care, to get rid of the animals that would destroy the plant, the most formidable of which is a caterpillar, which makes its way even through the inside of the plant, and attacks the insect from underneath.

Eighteen months after the planting, small nests of twelve or fifteen females, ready to lay their eggs, are fixed upon the nopal, at certain distances. The little-ones which come out, attain their full growth in two months, which is the limited duration of their life. They are then gathered; and this operation is renewed every two months from October to May. This crop is to be gathered some days before the laying of the eggs, either to prevent the loss of the eggs, which are rich in colour, or to hinder the little-ones from fixing

upon a plant, which is already exhausted, and must be left to itself for a few months.

Immediately before the rainy season comes on; in order to prevent the total destruction of the cochineals, which might be occasioned by the unwholesomeness of the air, the branches of the nopal, loaded with infant insects, are cut off. These branches are laid up in the houses, where they maintain their freshness, as all mucilaginous plants do. Here the cochineals thrive during the bad season. As soon as that is past, they are placed on the trees, where the vivifying freshness of the air soon makes them propagate.

The cochineal insect may, in some circumstances, be compared to the silk-worm, particularly in the way of depositing its eggs. The insects destined for this purpose, are taken at a proper time of their growth, and put into a box well closed, and lined with a coarse cloth; and in this confinement they lay their eggs and die. The box is kept close shut, till the time of placing the eggs on the nopal; when, if any motion be perceived, it is a sufficient indication, that the animalcule has life, though the egg is so minute, as hardly to be perceived.

When the cochineal is gathered from the nopal, it is put into pots of earthen-ware, where it is killed and then packed in serrons. The Mexicans have three different ways of killing them: one by hot water, another by fire, and the third by the rays of the sun; whereof the latter seems to deserve the preference; and great precaution is requisite, in either method, to preserve the good colour. To the different ways of killing this insect, are owing the several gradations of the colour.

The *wild* cochineal, a different species from the fine or mestique cochineal, which we have been speaking of, but cultivated in the same places, and on the same plant, does not require so much care and precaution; it being a more hardy insect, and better able to en-

duce the injuries of the air. The crop of it is consequently less variable in the produce, and may be gathered all the year. This insect is less abundant in colour than the other; but as its produce is more certain, and its price equivalent to two-thirds of that of the fine sort, it may be cultivated to advantage. This species is also found in Peru.

Though the cochineal belongs to the animal kingdom, of all others the most likely to corrupt, yet it never spoils, if kept dry.

This valuable production would probably succeed in different parts of Mexico: but hitherto scarcely any, besides the province of Oaxaca, has seriously attended to it. Each acre of nopal plants produces as much as two quintals of fine cochineal, with the attendance of one man. Exclusive of what is consumed by America and the Philippines, Europe receives annually four thousand quintals of fine cochineal, two hundred of granilla, one hundred of cochineal dust, and three hundred of the wild cochineal.

The principal countries where the cochineal insects are bred, are Oaxaca, Tlascalá, Chulula, Nueva Galicia, and Chiapa, all in Mexico; and Kambato, Loja, and Tucuman, in Peru: but it is only in Oaxaca that they are gathered in large quantities, and form a branch of commerce. Their cultivation has been successfully attempted in the French part of St. Domingo.

The cochineal, in the state in which it is brought to us, is in small bodies of an irregular figure, usually convex, ridged, and furrowed on one side, and concave on the other.

Cochineal is highly valued, in every part of the world, for the incomparable beauty of its red colour, which it readily communicates to wool and silk, but with more difficulty to linen and cotton. It is principally used by dyers for preparing crimsons and scarlets. The red colour called *carmine*, is also made

from cochineal. In medicine, cochineal is used as a cardiac, sudorific, alexipharmic, and febrifuge.

It is well known, that the cactus, or nopal plant, bears a succulent fruit or berry at the extremity of its leaves, filled with a juice of a delicate red colour, and agreeable taste. This juice is the natural food of the cochineal insect, which owes to it the value and property it possesses, as a red dye. Whence it follows, that the juice itself, if brought to a consistence, must yield a true and perfect colour, lively and brilliant as we find it in its natural state. Upon this hypothesis, Mr. David Riz, of Kingston in Jamaica, made experiments, to obtain from the plant artificially, what nature accomplished in the insect; and at length happily succeeded, by inspissating the juice. After a number of experiments, he found one process, which communicated a crimson colour to silk and wool, superior to that given by cochineal. He came to England; and trials of the same were made, before a number of the principal dyers in and about London, at the museum of the Royal Society. He also found two other processes, which promised, with very little alteration in their manufactory, to afford the colour-making dyes of scarlet and purple. On a moderate calculation, it was found, that this colour would go farther than three times the quantity of cochineal; which he accounted for, by remarking, that there is a great part of the insect, as its skin, &c. which affords no dye; but that the whole of his process was genuine colour, with little or no impurity.

Notwithstanding the advantages that might be derived to the nation, from this gentleman's discovery, he met, on the whole, with very little encouragement to prosecute his manufacture; though the sums annually expended in the purchase of cochineal from the Spaniards, are very large, and thousands of acres, now waste in Jamaica, might be cultivated with this plant, with little trouble and expense, and a quantity obtained, answerable to the home-demand.

COCOA, CACAO. (F. *Cacao*; G. *Kakao*; D. *Kakau*; I. *Cacao*, *Caccao*; S. *Cacao*; P. *Cacao*; DA. *Kakao*; SW. *Kakao*; POL. *Kakaowy orzech*; R. *Kakao*; L. *Cacao*.)

Cocoa is the seed of the fruit of the *Theobroma Cacao*, or Cocoa-tree, growing particularly at Caracas, Marignan, the French islands, Surinam, &c.

The most proper soil for the cocoa-tree, is a moist, rich, and deep earth. For the propagation of the plant, some of the largest, finest cods are selected, the nuts taken out, and thrown into water till they appear just ready to sprout; they are then put into the ground, and, in about eight or ten days' time, the plants will appear above the mould. The young plants are so susceptible of injuries from strong winds, a too hot sun, or great droughts, that they cannot be too well secured against such accidents. For this reason, the most sheltered situation must be chosen for them. In two years time, the plants having grown to the height of about five feet, will begin to flower; these first blossoms are always plucked off, that they may not impair the vigour of the trees. Their fruit is not allowed to remain for maturity, till the third year, and then only so much as seems proportionate to the strength of each tree. In the fourth year, they are permitted to bear a moderate crop. When planted in a good soil, and properly managed, they will continue vigorous and fruitful for thirty years. They bear two crops a year; the greatest in December or January, the other in May; and from the time the flowers drop off, to the maturity of the fruit, is about four months. The time of maturity is known by the yellowness of the pods, and the rattling of the nuts or kernels when the pods are shaken. The latter are then plucked; and, after laying them in heaps for three or four days to sweat, the nuts are picked out, and leaving the pulp, if any remain upon them, they are exposed to the sun every day, for a month. It is best not to wash off the pulp, as it makes them keep



the longer. The pods contain from ten to twenty, and even thirty nuts. The produce of one tree, in good soil, is estimated at about twenty pounds weight of nuts, but the produce of a tree in poor soil, and under bad management, rarely exceeds eight pounds.

Cocoa, to be good, ought to have a very brown and pretty even skin or peel, which when taken off, the kernel ought to appear full, plump, and shining, of a hazle-nut colour, very dark on the outside, and a little more reddish within, of a bitterish and astringent taste, without any greenish or musty savour, and not worm-eaten. It is one of the most oily fruits which nature produces, and has the advantage that, how old soever it be, it never grows rank, as all other fruits do, which have any analogy with this; such as almonds, the kernels of pine-apples, pistachio-nuts, &c. The cocoa-tree once grew so plentifully in Jamaica, that the inhabitants flattered themselves, it would become the source of inexhaustible wealth to them. In 1671, there were sixty fine walks in bearing, and many new ones in cultivation; but, some years afterwards, they were all destroyed at once, as it is said, by a blast, which pervaded the whole island; so that they were never afterwards recovered; and at present, there are but very few; the greatest discouragement in going upon this article, being the extreme tenderness of the young plants, and the length of time they require to come to maturity.

The best cocoa comes from Caraccas; but it is very seldom to be met with in this country.

Cocoa is the chief ingredient for making chocolate, and is also of itself a wholesome nourishing food.

**COCO-NUTS.** *Cocos nuts.* (F. *Cocos*; G. *Kokos-nüsse*; D. *Kokosnooten, Kalappusnooten*; I. *Cocchi*; S. *Cocos*; P. *Cocos*; DA. *Kokosnoedder*; Sw. *Rokosnoetter*; POL. *Kokos*; R. *Kokos*; L. *Nuces Indicæ*.)

Coco-nuts are the fruit of the *Cocos nucifera*, a tree

supposed to be a native of the Maldive and some desert islands in the East Indies; and thence to have been transported to all the warm parts of America. This tree frequently rises sixty feet high. The body of the trunk, which generally leans to one side, occasioned, as is supposed, by the great weight of nuts it sustains when young, is the exact shape of an apothecary's large iron pestle, being of an equal thickness at top and at bottom, but somewhat smaller in the middle; its colour is a pale brown throughout, and the bark smooth. The leaves, or branches, are often fourteen or fifteen feet long, about twenty-eight in number, winged, of a yellow colour, straight, and tapering. The pinnæ, or partial leaves, are green; often three feet long next the trunk, but diminishing towards the extremity of the branches. The nuts, of the size and shape of a small melon, hang at the top of the trunk, in clusters of a dozen in each. The pulp, which lines the inside of these nuts, supplies a wholesome kind of food, from which is expressed an oil, very sweet when fresh, and much used in India; but it contracts a bitter taste when kept long, and is then only fit for burning.

The centre of the nut is filled with a clear, refreshing, sweetish kind of liquid; the quantity of it in a full-grown nut, being frequently a pint and upwards. This is a most cooling, wholesome beverage, in sultry climates. In old nuts, this fluid disappears, and changes into a hard kernel, which at last fills the whole inside, being as white as snow, and of the flavour of an almond; this kernel serves for the propagation of the plant, and the Europeans grate it, to make a kind of almond-emulsion, from which they prepare currie soup and other palatable dishes.

The shells of these nuts, being tipped with silver, are frequently used for drinking-bowls, sugar-cans, &c. The bark of the tree may be wrought into cordage; and the leaves into baskets, brooms, hammock in form of nets, mats, sacks, and other useful utensils

If the buds of the flowers be cut off, before they are perfectly unfolded, a white liquor runs from them, which is of a sweet taste while it continues fresh. It afterwards turns sour, and makes good vinegar. When distilled in its highest perfection, it produces a strong brandy; and, boiled with quicklime, yields a middling kind of sugar.

**COD-FISH.** (F. *Morue*; G. *Kabliau*, *Stockfisch*, *Bakalau*; D. *Kabeljaauw*, *Bakkeljaauw*; I. *Baccalà*, *Baccalare*; S. *Bacallao*; P. *Bacalhao*; DA. *Kabliau*, *Skreitorsk*, *Bakeldu*; Sw. *Kabeljo*, *Bakelau*; L. *Gadus Morhua*.)

The common cod is cinerous on the back and sides, and commonly spotted with yellow: its length does not exceed three feet, and is often less; the belly is white: but they vary much, not only in the colour, but in shape, particularly that of the head. The side-line is white, broad, and straight, till it reaches opposite the vent, when it bends towards the tail. The jaws are of an equal length, and at the end of the lower, is a small beard; the teeth are disposed in the palate, as well as in the jaws. Leewenhoek counted 9,384,000 eggs in a cod-fish of a middling size; a number that will baffle all the efforts of man to exterminate. In our seas they begin to spawn in January, and deposit their eggs in rough ground, among rocks. Some continue in roe till the beginning of April.

The cod is only found in the northern parts of the world; it is an ocean-fish, and never met with in the Mediterranean Sea. The great rendezvous of the cod-fish is on the banks of Newfoundland, and the other sand-banks that lie off the coasts of Cape Breton, Nova Scotia, and New England. They prefer those situations, by reason of the quantity of worms produced in these sandy bottoms, which tempt them to resort there for food. But another cause of the particular attachment the fish have to these spots, is their vicinity to the Polar seas, whither they return to

spawn : there they deposit their roes in full security, but want of food forces them, as soon as the first more southern seas are open, to repair thither for subsistence. Some considerable quantity of cod-fish is taken at Greenland; a few also to the north of Iceland; but to the south and west they abound. They are also found to swarm on the coasts of Norway, in the Baltic, and off the Orkney and Western Isles; after which, their numbers decrease, in proportion as they advance towards the south; when they seem quite to cease before they reach the mouth of the Straits of Gibraltar.

Before the discovery of Newfoundland, the greater fisheries of cod were on the seas of Iceland, and off our Western Isles, which were the grand resort of ships from all the commercial nations; but it seems that the greatest plenty was met with near Iceland. The English resorted thither before the year 1415: for we find that Henry V. was disposed to give satisfaction to the King of Denmark, for certain irregularities committed by his subjects on those seas. In the reign of Edward IV. the English were excluded from the fishery, by treaty. In later times, we find Queen Elizabeth condescending to ask permission to fish in those seas, from Christian IV. of Denmark. In the reign of her successor, however, we find no fewer than one hundred and fifty English ships employed in the Iceland fishery; which indulgence might arise from the marriage of James, with a princess of Denmark.

Newfoundland was discovered, in 1497, by John Cabot, a Venetian; but it was not till 1536, that the English discovered the great quantity of cod that might be caught on the coasts of this island; and the spring following, some small vessels were fitted out, which came home with full cargoes. This fishery then gradually increased: so that, in 1615, we find two hundred and fifty English vessels employed in the cod fishery on these coasts, the lading of which

amounted to 15,000 tons. All these vessels had sailed from Europe; and it was several years after only, that fixed habitations were formed in Newfoundland. The Spanish, French, and Bretons, formerly had much the advantage of the English, in all fisheries; as appears by the state of that in the seas of Newfoundland, in the year 1578.

Spaniards, 120 to 130 ships; being 5 to 6000 tons.	
Portuguese - - - 50	3000 ditto.
French & Bretons 150	7000 ditto.
English, from 30 to 50.	

The French pretend to have frequented the coasts of Newfoundland, since the beginning of the sixteenth century. This period may be too remote, but it is certain, that they frequented them before the year 1634. All other nations besides the English and French, are now excluded from this trade. The latter formerly shared the dominion of Newfoundland with the English, but by the peace of Utrecht, the property of this island was confirmed to Great Britain, and the French only preserved the right of fishing in certain latitudes. The latter, however, by the advantage of Cape Breton, used to carry on such a beneficial fishery, as employed at least 1000 sails from 200 to 400 tons burthen, and 20,000 seamen; the produce of their labour being so great, that, in the year 1730, there was a computation made, of 220,000 quintals of cod-fish at Marseilles only, for a market; and it has been affirmed, that, one year with another, they cured above five millions of quintals.

All this immense fishery is carried on by the hook and line only; yet some of the more experienced fishers will take 350 to 400 cods a day. We have been informed, that they fish from the depth of sixteen to sixty fathoms, according to the inequality of the bank, which is represented as a vast mountain, under water, above 500 miles long, and almost 300 broad. Nearly 15,000 British seamen are employed in this fishery; and it affords subsistence to a much more numerous body of people at home.

The best season for the cod-fishery, is from the beginning of February to the end of April; the fish, which in winter retire to the deepest water, coming then on the banks, and fattening extremely. What is caught from March to June, keeps well: but those taken in July, August, and September, when it is warm on the banks, are apt to spoil soon. About July, therefore, the vessels make the best of their way to the Caribbee islands, or the Roman Catholic states in Europe, every one using his efforts to be of the first at market.

This branch of trade is carried on in two different ways; that which is called the wandering fishery, belongs to vessels which sail every year from Europe to Newfoundland: stationary fishery is that, carried on by Europeans who have settlements on these coasts, and is infinitely more profitable than the wandering fishery.

There are two kinds of salt cod, the one called green or white, and the other dried or cured; though it is all the same fish, only differently prepared. The most essential thing in the green cod-fishery, is to have three persons, who perfectly understand to open the fish, to cut off the heads, and to salt them. These operations are performed on-board; the head being cut off, the belly opened, and the guts taken out, the salter ranges the fish in the bottom of the vessel, head to tail; and, having thus made a layer thereof, a fathom or two square, he covers it with salt; over this he lays another layer, which he covers as before; taking care never to mix the fish of different days together. When the fish have lain thus to drain three or four days, they are moved into another part of the vessel, and salted afresh: after which, they are no more touched. Sometimes they are put into barrels, for the conveniency of carriage. Green cod is chiefly caught in the Bay of Canada, on the great bank of Newfoundland, on the Isle of St. Peter, &c. In the fishing of dry cod, such vessels are generally chosen,

as have large holds; because this sort of fish incumbers more than it burthens. As fast as the fish is taken, it is sent on shore, opened, and salted there. When they have taken salt, they are washed, and, to drain them again, laid in piles on a scaffold, and then on hurdles; turning them four times every twenty-four hours. When they begin to dry, they are laid in heaps, to retain their warmth. At last they salt them over again, and lay them in huge piles; in which manner they remain, till they are carried on-board, where they are laid on branches of trees, disposed for that purpose in the bottom of the vessel, with mats all round, to prevent their contracting any moisture. The principal fishery for dried cod, is from Cape Rose to the Bay des Experts, along the coast of Placentia. These, though of the same kind with the green cod, are much smaller, and therefore fitter to keep; as the salt penetrates more easily into them. This fishery, though scarcely half so much salt is spent, comes more expensive than the other, as taking up more time, and employing more hands.

It is a well-attested phenomenon, that the cod-fishery is scarcely begun, before the sea becomes oily, grows calm, and the barks are seen floating upon the water, as upon a polished mirror. The same effect is produced by the oil which runs from a whale, when it is cut to pieces. Dr. Franklin, who made a series of experiments hereon, has ascertained, that a few drops of oil, the whole of which united would scarcely have filled a spoon, quieted the waves at more than a hundred toises distance, with a celerity of expansion as marvellous as its division. There are four kinds of commodities drawn from cod, namely, the tripes, the tongues, the roes, and the oil extracted from the liver. The tripes, tongues, and roes, are salted at the fishery, together with the fish, and made up in barrels: the oil is used in dressing leather.

The Newfoundland cod-fish is more delicate, though not so white, as that found in the Northern

seas of Europe. The Greenland fish is particularly small and emaciated.

The Scotch catch a small kind of cod on the coast of Buchan, which is highly prized, though very much like ling. They salt it, and dry it in the sun upon rocks, and sometimes in the chimney; but the greatest part of it is spent at home. Cods are also taken in large quantities along the British and Irish coasts; and they are caught in abundance on the Dogger's Bank off Holland, whence most of the fish come that supply the market at Billingsgate with fresh cod.

COFFEE. (F. *Café*; G. *Kaffe*; D. *Koffy*; I. *Caffè*; S. *Café*; P. *Caffè*; D<sub>A</sub>. *Kaffe*; Sw. *Koffe*; P<sub>OL</sub>. *Kawa*; R. *Kofé*; L. *Coffea*, *Caffèa*.)

There is but one species of the coffee-tree, supposed to be a native of Upper Ethiopia, where it has been known time immemorial, and is still cultivated with success. It is larger, rather longer, not so green, and almost as fragrant as that coming from Arabia, where it was first gathered, towards the close of the fifteenth century. The Arabians say, that it is a native of Abyssinia; and several travellers affirm, that they have seen it in great plenty in that country, where it produces berries not inferior in goodness to the coffee of Yemen. What renders this relation the more probable is, that the fruit of the wild coffee-tree is in Arabia so bad, as to be unfit for use.

The coffee-tree, if left to itself, would rise to the height of sixteen or eighteen feet, but is generally stunted to five, for the conveniency of gathering the fruit. The main stem grows upright, and is covered with a light brown bark; the branches are produced horizontally and opposite, crossing each other at every joint; so that every side of the tree is usually garnished with them, and they form a sort of pyramid. The leaves also stand opposite, and when fully grown, are about four or five inches long, and two broad in



the middle. The flowers are produced in clusters at the root of the leaves, being tubulous and spreading open at the top; they are of a pure white, and have a grateful odour. The fruit, which is the only useful part, resembles a cherry. It ripens from August to October, darkens in November, and is fit to gather in December; but it ought never to be gathered, until the pulp is exhaled, and the coat is suffered to become thoroughly dry and shrivelled; so that it appears ready to drop off, and actually falls, on a slight touch. The best flavoured coffee is experienced to be collected from under the trees, where it has recently fallen, quite dry, black, and shrivelled. After being completely dried it is taken to the mill, where it is stripped of its first skin, and divided into two parts, being flat on one side, and convex on the other. From this machine it falls into a brass sieve, where the skin drops between the wires; after which, it is put into another machine, called the peeling-mill, which takes off the parchment, or the thin skin, that detaches itself from the berry in proportion as it dries. The parchment being removed, it is put into the winnowing-mill, which clears the coffee of all the pellicles that are mixed with it. It is afterwards put upon a table, where the broken berries, and any filth that may remain, are picked out by negroes; after which, it is fit for sale.

The coffee-tree particularly delights in hills and mountains, where its root is almost always dry, and its head frequently watered with gentle showers. In Arabia, the inhabitants of the highlands, plant other trees among their coffee-plants, in order to shade them; and, in the time of the intense heats, water them. In the West-India islands, the soil and climate are so very different from that of Arabia, that the spot for the coffee-plantations cannot be chosen too dry, nor is the heat too great. This tree begins to yield fruit about the third year, but is not in full bearing till the fifth. It most delights in a gravelly

ground, and its roots, which seldom fail to strike between stones, obtain nourishment, and keep the tree alive and fruitful for thirty years. It flourishes only in those climates where the winters are exceedingly mild; and then its blossoms appear in the months of December, January, and February; and it bears in October or November.

The coffee-shrub is principally cultivated in Arabia; the isles of Java and Bourbon; most of the West-India islands; and in the Dutch settlements of Surinam, Berbice, Demarara, &c. on the continent of South America.

The coffee of the East is more esteemed than that coming from the West Indies and America. Among the former, the Arabian or Moccha coffee stands first; then comes the Java, Cheribon, &c.; and last, the Bourbon coffee. Among the West-Indian and American growth, that of the French colonies is preferred to the British; and the Dutch is the least esteemed of any. Of the French coffee, that of Martinico deserves the preference. Good West-India coffee should be of a greenish colour, fresh, void of mouldy and other unpleasant smells, and in small berries, neither mixed with black, nor broken. East-India coffee is of a pale, and partly of a deep yellow colour; the Moccha coffee having small beans; and the Java in particular being of a large, lightish, yellow berry.

The quality of the British coffee is greatly deteriorated, by not sufficient care being taken to keep it separate from sugar, rum, &c. as well in the West-Indies, as on-board the ships which bring it to Europe. The berries, therefore, should never be laid to dry in houses, where sugars are curing, or rum is kept; nor sent to Europe in ships freighted with rum, sugar, pimento, ginger, salt-fish, &c.; as they are very subject to imbibe the flavour of these commodities. The French, and most other foreigners greatly exceed us in this respect, as well as in their method

of cultivating and curing coffee; and the greater price which the coffee of their produce gains, is owing, in a great degree, to their superior care and management.

The growing in too moist a soil is another cause, which, though it always increases the size of fruit and vegetables, greatly depreciates the quality of coffee in general, and is particularly the reason of the inferiority of the growth of Jamaica: the soil of which island is too luxuriant, rich, and moist, for this production, particularly the north side and midland parts. The berries there are large, and have a full pulp, which requires a long time to dry, and the weather and atmosphere are too damp for the purpose; so that the coffee brought thence, is frequently covered with a degree of mouldiness, and contracts a musty, disagreeable smell and taste. The drier the soil, and warmer the situation is, the better will be the berries; they will be smaller, have less pulp, and a superior flavour. It is true, that the trees planted in rich soils, yield commonly from twelve to sixteen ounces of coffee *per* plant, and sometimes as much as two pounds; and that, in dry soils, they scarcely furnish more than from six to eight ounces, which makes an immediate difference of one half in the weight. Now, in our markets, the greatest difference in the price, between small best-grown coffee, and that which is larger and of the worse kind, is from twenty to twenty-five *per* cent.; the planters, therefore, find it to their advantage to plant their trees in the richest soil.

The origin of the drink made of coffee, is not well known. Some ascribe it to the Persians, from whom the use was learned about the fifteenth century, by Gemaleddin, Mufti of Aden, a city near the mouth of the Red Sea; who first recommended it to his Dervises, with whom he spent the night in prayers. Their example brought coffee into vogue at Aden. Hence it passed to Mecca, where first the devotees, and then the rest of the people took it. From Arabia

Felix it passed to Cairo. In 1511, Kahie Beg prohibited it, from a persuasion that it inebriated and inclined to things forbidden. But Sultan Causou immediately after took off the prohibition, and coffee advanced from Egypt to Syria and Constantinople. The Dervises declaimed against it from the Alcoran, which declares, that coal is not of the number of things created by God for food. Accordingly, the Mufti ordered the coffee-houses to be shut; but his successor declaring coffee not to be coal, they were again opened. During the war in Candia, the assemblies of news-mongers making too free with state-affairs, the Grand Visier Cuproli suppressed the coffee-houses at Constantinople; which suppression, though still on foot, does not prevent the public use of the liquor there. Thevenot, the traveller, was the first who brought it into France; and a Greek servant, named Pasqua, brought to England, in 1652, by Daniel Edwards, a Turkey merchant, to make his coffee, first set up the profession of coffee-man, and introduced the drink into this Island.

The Arabian coffee is produced in the territory of Betelfagui, in a district of fifty leagues long, and fifteen or twenty broad. The fruit is not every-where in equal perfection. That which grows on the higher grounds is smaller, greener, weighs heavier, and is generally preferred.

It is computed that Arabia contains twelve millions of inhabitants; among the greatest number of whom, coffee is a highly favourite liquor. None but the rich citizens have the pleasure of tasting the berry itself. The common people are obliged to content themselves with the shell and the husk of this valuable production. These remains, so much despised, make a liquor of a pretty clear colour, which has the taste of coffee, without its bitterness and strength. These articles may be had at a low price at Betelfagui, which is the general market for them. Here, likewise, is sold all the coffee which comes out of

the country by land: the rest is carried to Moccha, or to Jodda. The Egyptians fetch it from the latter place, and all other nations from the former. The quantity of coffee exported from Arabia, may be estimated from twelve to thirteen millions weight. The European companies take off a million and a half; the Persians, three and a half; the fleet from Suez, six and a half millions; Indostan, the Maldives, and the Arabian colonies on the coast of Africa, fifty thousand pounds; and the land caravans, a million. The superiority of the Asiatic coffee must arise chiefly from its being cultivated in soils best appropriated to it; from its not being packed on-board ship with goods, the steams of which might impregnate and vitiate its flavour; from the length of its voyage to the European markets, and the greater age it acquires by this means, before it comes into the consumer's hands. Perhaps, one part of the excellence of the Moccha coffee arises from this circumstance. The East-India Company send a ship to Moccha once in two years: it is most probable, a part of the loading has been kept in that hot country, above a year; it is six months before it arrives in England; it may be six or twelve months more, before it comes into the consumer's hands. Thus, between two and three years must intervene between its growth and consumption.

For coffee-berries, some substitute peas, beans, rye, barley, oats, carrots, &c. which, when roasted, yield an oily matter, resembling coffee in flavour, but less agreeable.

COLE-SEED; see RAPE-SEED.

COLOCYNTH, *Coloquintida*, *Bitter Gourds*.  
 (F. *Coloquintes*; G. *Koloquinten*; D. *Bitterappelen*,  
*Quintappelen*; I. *Coloquintida*; S. *Coloquintidas*,  
*Tueras*, *Calabacillas*; P. *Coloquintidas*, *Cabacinhas*;  
 DA. *Coloquinter*; Sw. *Coloquinter*; POL. *Kolokwin-*  
*tyda*; R. *Kolozintii*; L. *Colocytidum poma*.)

Colocynth is the dried medullary part of a wild species of gourd or cucumber, the *Cucumis Colocynthis*; brought from Aleppo, and other parts of the East.

It is a very strong irritating cathartic, commended also as an efficacious purgative and an alterative in chronical disorders.

**COLOPHONY.** (F. *Colophone*; G. *Geigenharz*; D. *Vioolhars*; I. *Colofonio*; S. *Colofonia*; P. *Colophonía*; DA. *Fiolinharpix, Colophonium*; Sw. *Fiolkada, Harts*; POL. *Kalofonia*; R. *Kanifol*; L. *Colophonium*.)

Colophony is black rosin or turpentine, boiled in water, and afterwards dried; or, which is still better, the caput mortuum remaining after the distillation of the ethereal oil, being further urged by a more intense and long continued fire. To be good, it must be shining and odoriferous, and, when thrown on the fire, should render a smoke like that of frankincense.

It receives its name from Colophon, a city of Iönia, because the best was formerly brought thence. This substance is found to warm, dry, soften, and agglutinate; it usually enters the composition of plasters and unguents; though it is also used by musicians, to rub the hairs of the bow for their violins.

**COLUMBO ROOT.** (F. *Racine de Colombo*; G. *Columbo-wurzel*; D. *Columbo wortel*; I. *Radice di Columbo*; S. *Raiz de Columbo*; P. *Raiz de Columba*; DA. *Columborod*; Sw. *Columboröt*; L. *Columbo, Columbæ radix*.)

This is an article newly introduced into medicine, the natural history of which is not yet well known. It derives its name from Columbo, a town in Ceylon, which supplies all India with it. The inhabitants of these countries have for a long time used it, in disorders of the stomach and bowels. They carry it about

with them, and take it, sliced and scraped, in Madeira wine.

This root comes to us in circular pieces, which are from half an inch or an inch, to three inches in diameter; and divided into frusta, which measure from one quarter of an inch to two inches. The sides are covered with a thick corrugated bark, of a dark brown hue on its external surface, but internally of a light yellow colour. On separating the surfaces of the transverse sections, the root is observed to consist of three laminæ; the cortical, the ligneous, and the medullary. All the thicker pieces have holes drilled through them, for the conveniency of drying. Columbo-root has an aromatic smell, but is disagreeably bitter, and slightly pungent to the taste, somewhat resembling mustard-seed, when it has lost, by long keeping, part of its essential oil. Yet though ungrateful to the taste; when received into the stomach, it appears to be corroborant, antiseptic, sedative, and powerfully antiemetic.

**COPPER.** (F. *Cuivre*; G. *Kupfer*; D. *Coper*; I. *Rame*; S. *Cobre*; P. *Cobre*; DA. *Kobber*; Sw. *Köppar*; POL. *Miedz*; R. *Mjed, Krasnoi mjed*; L. *Cuprum*.)

This is one of those metals, which from their destructibility by fire, and contracting rust in the air, are called imperfect; of these, however, it is one of the least imperfect and destructible. Its colour, when clean, is very brilliant; but it is extremely liable to tarnish, and the goodness is judged by its being of a bright red. It has a disagreeable smell, very perceptible on friction, or on being heated. Its taste is styptic and nauseous, but less perceptible than that of iron. Its tenacity, ductility, and hardness, are very considerable, and its elasticity superior to any other metal, except steel.

Copper is found in the bowels of the earth, chiefly

in the following state. First, native copper ;—then, mineralized by fixed air ;—*cupreous* stones ;—*mineralized* by sulphur ;—*dissolved* by vitriolic acid ;—and in various other forms.

*Native* copper ; having the red colour, the malleability, and all the other properties of the metal, is found in many places of Europe ; particularly at St. Bell near Lyons, at Norberg in Sweden, and Newsol in Hungary ; also in several parts of America. In very considerable quantities, it is found at Cape Lizard, and at Huel Virgin, in the county of Cornwall. Some lumps of native copper have been found in the latter spot, that weighed from twenty to thirty pounds ; and in the month of March, 1785, there were no less than twenty-eight millions of pounds of rich copper-ore extracted from this mine.

Among the ores of copper *mineralized* by fixed air, belong copper-ochre, mountain-green, mountain-blue, malachite, and azure of copper.—*Mountain-green* is generally found in a loose and friable state, often mixed with calcareous earth, iron, and some arsenic. One hundred parts of the purest sort, contain seventy-two of copper, twenty-two of aerial acid, and six of water.—The *mountain-blue*, is of a deep blue colour, sometimes formed in rhomboidal prismatic crystals of a fine blue ; in which case it is called *azure of copper*.—The *malachite* is sufficiently hard to take a fine polish, and is therefore formed into toys of different kinds ; but as it is frequently porous and full of unequal cavities, the solid pieces of a certain size are reckoned valuable. The malachite looks like green jasper, but is less hard, and does not strike fire with steel.

Among the *cupreous* stones deserve to be enumerated, the *turquoise*, improperly called a stone, being the tooth of an animal, penetrated by the blue calx of copper, of a deeper or lighter blue, and susceptible of a fine polish ; also the *lapis Armenius*, which has cal-



careous earth or gypsum for its basis: it is used in painting, when ground to a fine powder, under the name of *Bice*.

Copper *mineralized* by sulphur, is the richest of all the copper ores, affording from eighty to ninety per cent. of copper, ten or twelve of sulphur, and a small proportion of iron.

Copper *dissolved* by the vitriolic acid. At Herngrundt near Newsol in Upper Hungary, there are two springs, called the Old and New Ziment, so richly impregnated with copper dissolved by the vitriolic acid, that iron thrown into them is dissolved by the latter, and the copper precipitated in its metallic form, in the place of the iron. Some pits made purposely for this operation, are filled with the water of the springs, and old iron is thrown in, which, in twelve to twenty days, is taken out, and the copper scraped off. The metal thus procured, differs little from native copper. One hundred tons of iron by this method yield eighty-four to ninety tons of copper. By the like process, such quantities of copper have, of late years been obtained from some spring issuing from the celebrated copper-mines at Arklow, in the county of Wicklow, in Ireland, that these springs are now of as much consequence as the mines themselves. One ton of iron there, produces sixteen hundred-weights of fine copper, selling for ten pounds sterling a ton more, than the copper fluxed from the ore.

There is in the Isle of Anglesey, a mountain called Parys, which abounds in copper-ore. This is one of the richest copper mines in the world. According to Pennant, it is certain, that the Romans were the first undertakers of these mines. But they were not properly worked till the year 1768, when they discovered, at the depth of seven feet from the surface, the solid mineral, which proved to be that vast body, which has since been worked to such advantage, and is of unknown extent. Its thickness has been ascertained in some places to be twenty-four yards. The

works of the Parys mountain consist of two quarries ; the first called Monamine, the sole property of Lord Uxbridge ; the other called Parys mine, shared between Lord Uxbridge and the Rev. Mr. Hughes. The Parys mine has furnished from five to ten thousand tons of copper *per* quarter, exclusive of what is procured from the springs containing copper dissolved in vitriolic acid, which also here is the richest ore the mine contains. As the two mines employ nearly equal numbers of workmen, they probably afford about the same quantity of ore. The produce of these mines is exported from the port of Aml-coch.

Besides these, there are other considerable copper-mines in Wales, as the Llandidno mines near Conway ; the mines in Llanwrst vale, in North Wales ; the hill of Llyanymynech, consisting of a range of from twenty to thirty shallow pits ; the mines near Pont Aberglaslyn, at the entrance by the south into Carnarvonshire ; and the mine on Snowden, near the village of Llanberris.

The Ecton mine, on the estate of the Duke of Devonshire, in Staffordshire, produces at least three hundred, and the mines in Cornwall no less than four thousand tons of copper *per annum*.

Sweden is reckoned the richest of any country in copper-mines ; but the Swedish copper is inferior to the British. Copper is also brought from Norway and Japan. The Spaniards are plentifully supplied with this metal from New Spain, the island of Cuba, Porto Rico, and the kingdom of Chili, whence it comes over without further improvement than that of the first fusion, being formed by a mould into round cakes. This the Spaniards affirm to excel the Barbary copper, and insist that it equals that of Sweden and Hungary.

Copper, when taken into the human body, acts as a violent emetic, and has been generally accounted poisonous. In order to prevent the pernicious effects

of this metal, the vessels made of it are generally covered with tin in the inside. Twenty-two to twenty-three pounds of fine tin, melted together with one hundred weight of copper, makes *bell-metal*; with a smaller proportion of tin, it forms *bronze*. Copper mixed with zinc, produces *brass*, *princes-metal*, *pinchbeck* or *similar*, *Manheim gold*, and other compositions, according to the proportion.

COPPERAS; *Green vitriol*. (F. *Couperose verte*; G. *Kupferwasser, Eisenvitriol*; D. *Groene vitriool, Yzervitriool*; I. *Copparosa verde*; S. *Vitriolo de Marte*; P. *Caparroza verde*; DA. *Grönt kobberwand*; Sw. *Grön Victriol, Jernvitriol*; POL. *Koperwas z zelaza*; R. *Selenii kuparos*; L. *Vitriolum martis*.)

Copperas is a name given to the factitious green vitriol. The usual method of manufacturing it in this country from pyrites, is as follows. Pyrites are found in large quantity in the coal-mines of England, where most of the copperas is made. They are sulphur united with any metal; very heavy and hard substances, having a kind of brassy appearance, and hence they are called brasses by the workmen. A very large quantity of these is collected, and spread out upon a bed of stiff clay, to the depth of three feet. After being some time exposed to the air, the uppermost ones lose their metallic appearance, split, and fall to powder. The heaps are then turned, the under-part uppermost, so as to expose fresh pyrites to the air. When they are all reduced to powder, (which generally requires three years) the liquor, which is formed by the rain-water running from such a large mass, becomes very acid, and has likewise a styptic vitriolic taste. It is now conveyed into large cisterns lined with clay, whence it is pumped into a very large flat vessel made of lead. This vessel, which contains about fifteen or twenty tons of liquor, is supported

by cast-iron plates, about an inch thick, between which and the lead a bed of clay is interposed. The whole rests upon narrow arches of brick, under which the fire is placed. Along with the liquor, about half a ton or more of old iron is put into the evaporating vessel. The liquor, which is very far from being saturated with acid, acts upon the iron, and, by repeated filling up as it evaporates, dissolves the whole quantity. By the time this quantity is dissolved, a pellicle is formed on the surface. The fire is then put out; and, as such a large quantity of liquor does not admit of filtration, it is left to settle for a whole day, and then is let off by a cock, placed a little above the bottom of the evaporating vessel, so as to allow the impurities to remain behind. It is conveyed by wooden spouts to a large leaden cistern, five or six feet deep, sunk in the ground, and which is capable of containing the whole quantity of liquor. Here the copperas crystallizes on the sides, and on sticks put into the liquor. The crystallization usually takes up three weeks. The liquor is then pumped back into the evaporating-vessel, more iron and fresh liquor from the pyrites are added, and a new solution takes place.

There is copperas of England, Germany, Cyprus, Hungary, and Italy; which only differ from each other in colour, richness, and perfection, being all the same mineral.

White copperas is that of Germany; which, before whitening, is of a blueish green, clear and transparent.

Copperas is used in dyeing, for procuring a black colour; in tanning and dressing of leather; and is an ingredient in making common ink. It likewise affords an oil, and a kind of Spanish brown for painters; and is used in medicine, as a corroborant.

**CORAL.** (F. *Corail*; G. *Korallen*; D. *Korallen*; I. *Corale*; S. *Coral*; P. *Coral*; DA. *Koraller*; SW. *Koraller*; POL. *Koralki*, *Koralii*; R. *Korallii*; L. *Corallina*.)

The corals were formerly believed to be vegetable substances, hardened by the air. Those parts which were supposed to be the flowers, are now discovered to be insects inhabiting the coral. The organs of the animal are contained in the tubes, and the glandules are the extremities of its feet; the milky liquor is the blood and juice. The animal inhabiting the coral is of the polype kind, and the coral has the same relation to the polypes united to it, as there is between the shell of a snail and the snail itself.

The coral grows in the caverns of the sea, exposed to every injury; and it grows sometimes perpendicularly downwards, sometimes horizontally, and sometimes upwards. The colour is either red, white, or black; the latter is the rarest.

The principal coral-trade is fixed at Genoa, Leghorn, Marseilles, and Messina. The coral-fishery is carried on in the Mediterranean, on the shores of Provence, from Cape de la Couïronne, to that of St. Tropez, about the isles of Majorca and Minorca, and on the coast of Sicily; on the coasts of Africa, particularly in the Ethiopic Ocean, about Cape Negro, in the Persian Gulph, and the Red Sea. The immense banks of coral bordering and almost filling up the Arabic Gulph, rise sometimes ten fathoms above the surface of the sea; and, being soft under water, and hence easily wrought, they are preferred to all other stones for the purpose of building. Very fine branchy coral is found along the coast, east of the city of Taranto. There was, some time back, such abundance of coral near these shores, that a boat's crew was once known to draw up, in one day, as much as sold for five-hundred ducats.

The manner of fishing coral being nearly the same every where, it will suffice to mention the method

used by the company at Marseilles. Seven or eight men go in a boat, commanded by the patron or proprietor; and when the net is thrown by the caster, the rest work the boat, and help to draw the net in. This is composed of two rafters of wood tied crosswise, with leads fixed to them: to these they fasten a quantity of hemp, twisted loosely round, and intermingled with some loose netting. In this condition the machine is let down into the sea, and when the coral is pretty strongly embarrassed in the hemp and the nets, they draw it out with a rope, which they unwind according to the depth, and which sometimes requires half a dozen boats to draw. If this rope happen to break, the fishermen run the hazard of being lost. Before the fishers go to sea, they agree for the price of the coral, and the produce of the fishery is divided, on their return, into thirteen parts; of which the proprietor has four, the caster two, and the other six men one each; the thirteenth belongs to the company for payment of the boat furnished them.

**CORDOVAN** leather, a sort of leather brought to this country from Cordova in Spain, used in making boots and shoes; it is also imported from South America: it is leather made from the horse hide, and is often substituted for calf skins.

**CORIANDER.** (F. *Coriandre*; G. *Koriander*; D. *Koriander*; I. *Coriandro*, *Curiandolo*; S. *Cilantro*, *Culantero*; P. *Coentro*, *Coriandro*; DA. *Koriander*; Sw. *Koriander*; POL. *Koryander*; R. *Koriander*; I. *Coriandrum sativum*.)

Coriander is an umbelliferous plant, producing pale, yellowish or brownish, striated, hemispherical seeds, which are joined by the flat sides, two together. It is annual, growing in abundance in the southern parts of Europe.

These seeds, when fresh, have a very unpleasant

flavour, which however by drying is altered, and becomes tolerably grateful. Their taste, in this dry state, is moderately warm and slightly pungent. Besides the confections made of coriander-seed, it is sometimes employed in medicine as a stomachic and carminative; it is also used by brewers, both in England and Holland, to give a flavour to the strongest beer. They should be chosen new, sound and firm, of an aromatic smell and pleasant taste.

CORK. (F. *Liege*; G. *Kork*; D. *Kork*; I. *Sughero*, *Suvero*; S. *Corcho*; P. *Cortica*; D $\Delta$ . *Kork*; Sw. *Korkträ*; Pol. *Korek*; R. *Korkowoe derewo*; L. *Suber*.)

Cork is the bark of a species of oak, called *Quercus Suber*. It grows thirty or forty feet high, having a thick, rough, fungous, cleft bark. To take off this bark, they make an incision from the top to the bottom of the cork-tree, and at each extremity another round, perpendicular to the first. The old bark being detached for use, the tree still lives, and, in six or seven years, the succeeding young bark is again fit for use. The bark, when stripped from the tree, is piled up in a pond or ditch, and loaded with heavy stones to flatten it; hence it is taken to be dried, and, when sufficiently dry, put in bales for carriage. The cork-tree is not injured by the operation of peeling off the bark; for, if not performed, it splits and peels off from itself, being pushed up by another bark formed underneath.

The bark of cork is of some use in medicine, but the chief use of it is for making soles, heels, and stoppers for bottles, &c. The Spaniards burn it, to make that kind of light black, we call *Spanish black*, used by painters. They also line stone walls with cork, which not only renders them very warm, but corrects the moisture of the air. Cork is likewise used for making cork jackets for swimming.

The cork-tree grows in great plenty in Spain and

Portugal, and from these countries we receive the bark. It should be chosen in fine boards, all of a piece, of a moderate thickness, yellowish without and within, not full of knots, and even when cut.

CORN. (F. *Bleds, Grains* ; G. *Getreide, Korn* ; D. *Graanen, Koren* ; I. *Grani, Biadi* ; S. *Granos* ; P. *Graos* ; DA. *Korn* ; SW. *Süd, Spanmal* ; POL. *Zboze* ; R. *Chljeb* ; L. *Frumentum*.)

Corn is a general name for several grains or seeds, used for the nutriment of man ; such as wheat, buck-wheat, rye, barley, oats, millet, maize, lentils, pease, &c. ; for which see under the respective heads. Europe, in every part of it, Egypt, the Cape of Good Hope, the coasts of Barbary, and some other cantons of Africa, with some parts of America cultivated by the Europeans, are the places which produce corn.

Egypt and Sicily were formerly the most fertile of all other countries in corn. Poland, France, the coasts of the Black Sea, and North America, now with their superfluities supply a great part of Europe.

The best method of preserving corn, is to move and air it frequently for the first six months: after that time, it will require less labour, if kept in a dry place. When the corn has been preserved from all impurities for the space of two years, and has exhaled all its fires, it may be kept for fifty, or even a hundred years, by lodging it in pits, covered with strong planks closely joined together: but the safer way is to cover the heap with quick lime, which should be dissolved by sprinkling it over with a small quantity of water: this causes the grains to shoot, to the depth of two or three fingers, and incloses them with an incrustation, through which neither air nor insects can penetrate.

It has been computed with certainty, that the balance paid by Britain for corn imported, after deducting the value of exportation, stood thus :



In 1771; - - 105,200*l.* In 1773, - - 569,820*l.*

1772, - - 84,400*l.* 1774, - - 1,022,230*l.*

and considerably more in 1775.

Much larger sums than the above, have been expended by Great Britain during the last war, for purchasing corn, and bounties on the importation of the same.

**CORNELIAN.** (F. *Cornaline, Saïde*; G. *Karneol*; D. *Karneol*; I. *Cornalina*; S. *Cornerina*; P. *Cornelina, Corneirina*; DA. *Karneol*; Sw. *Karneol*; POL. *Sardyk*; R. *Seredolik*; L. *Carneolus, Sardus*.)

The cornelian is a precious stone, of which there are three kinds; the red, the yellow, and the white. The red cornelian is very well known among us; of a fine, compact, and close texture, glossy surface, and of all degrees of red, from the palest flesh-colour to the deepest blood red; it is found in roundish or oval masses, much like our common pebbles. It is generally free from spots, clouds, or variegations, but sometimes veined very beautifully with an extremely pale red or with white.

The cornelian is tolerably hard, and capable of a very good polish. The antients have recommended it in medicine; but at present it is only used for seals, trinkets, &c.

The finest cornelians are those of the East Indies; but there are very handsome ones found in the rivers of Silesia and Bohemia; and we have some not despicable ones also in England.

**CORTEX SIMAROUBÆ.** (F. *Simarouba*; G. *Ruhrwurzel*; D. *Roodenloop wortel*; I. *Simaruba*; S. *Simaruba*; P. *Simaroba*; DA. *Simaruba*; Sw. *Simaruba*; L. *Cortex simaroubæ*.)

Cortex Simaroubæ is the bark of the root of a species of terebinthus, or birch-tree, not yet sufficiently described. This bark is thick, and transudes a clear transparent resin, very odoriferous, and resembling

mastich; it yields also a more fluid resin by incision, which has much the smell and appearance of turpentine.

This article comes from Guiana, and is the most effectual remedy hitherto known in bloody-fluxes.

**CORTEX WINTERANUS**, or *Cortex Winteri*. (F. *Ecorce de Winter*, *Écorce sans pareil ou sine pari*; G. *Wintersrinde*, *Amerikanische gewürzrinde*; D. *Wintersbark*; I. *Scorza Magellanica*; S. *Corteza Winterana*, o *Magellanica*; P. *Canella de Winter*; DA. *Vintersbark*; Sw. *Vintersbark*; L. *Cortex Winteranus*, vel *Magellanicus*.)

This is the bark of a tree, first brought from the Straits of Magellan, by Captain Winter, in his voyage with Sir Francis Drake. It is aromatic, and found of good use against the scurvy. It also invigorates the blood, and is carminative and stomachic.

The bark of the Canella Alba, wild cinnamon, or bastard Cortex Winteranus, usually sold under the name of Cortex Winteranus, consists of two parts, the outer and inner; the outward bark is as thin as a milled shilling, of a whitish ash or grey colour, with light spots here and there interspersed upon it, and several shallow furrows of a darker colour, running variously through it, and making it rough; the inward bark is much thicker than cinnamon, and twice as thick as the outer coat, smooth and of a lighter complexion, of a much more biting and aromatic taste, somewhat like that of cloves, not glutinous like cinnamon, but dry and crumbling between the teeth. It is cured without any difficulty, by drying in the shade. What is taken from the branches, is thinner, and rather milder than that from the body of the tree; more nearly approaching to the true cinnamon.

This bark very much resembles cassia lignea, and, though different in appearance from the true Cortex Winteranus, is yet so like it in taste and virtue, that it may very well serve as a substitute.

**COTTON-WOOL.** (F. *Coton en laine*; G. *Baumwolle*; D. *Katoen, Boomwol*; I. *Cotone, Bambagia*; S. *Algodon*; P. *Algodao*; DA. *Bomuld*; Sw. *Bomull*; POL. *Bawelna*; R. *Chlobtschataja bumaga*; L. *Gossypium, Bombax*.)

Cotton-wool is a soft, downy substance, found on the gossypium or cotton-plant, which is of the shrubby kind, and, when full grown, resembles the raspberry-shrub.

There are different species of gossypium, all of them natives of warmer climates. 1. The common herbaceous cotton, which creeps along the ground, has yellow flowers, succeeded by large oval pods, furnished with seeds and cotton-wool. 2. The hairy American cotton has hairy stalks, two or three feet high. 3. The Barbadoes shrubby cotton has a shrubby stalk, branching four or five feet high. 4. The tree cotton has an upright woody stalk, branching six or eight feet high. The flowers and pods of the three latter species are like those of the first. The three species first enumerated, are annual; but the fourth is perennial, both in stalk and root; and the common herbaceous cotton, is the plant most generally cultivated.

The cotton-wool shrub is propagated by the seed, which in the West-India islands is sown in regular lines, about five feet asunder, at the latter end of September, or beginning of October; and at first but slightly covered, but after it springs up, and becomes a plant, the root is well moulded, and the ground hoe'd frequently. It grows from four to six feet high, and produces two crops annually, the first in eight and the second in twelve months, from the time of sowing; and the produce of each tree is about one pound weight. When the pods are come to maturity, they burst open, and disclose their seeds, intermixed with the flock or wool. When great part of the pods are thus expanded, the crop begins. The wool is picked, and afterwards cleared from the seeds by a

convenient machine, of very simple contrivance, called a gin, composed of two or three wooden rollers, ranged horizontally, close and parallel to each other, in a frame; at each extremity they are toothed, or channelled longitudinally, corresponding one with the other; and the central roller being moved with a treadle, makes the other two revolve in a contrary direction. The cotton-wool is laid, in small quantities at a time, upon these rollers, whilst they are in motion, and readily passing between them, drops into a sack, placed underneath to receive it, leaving the seeds behind, which are too large to pass with it. The wool thus discharged from the seeds, comes afterwards to be hand-picked, and cleansed thoroughly from any little particles of the pods, or other substances which may be adhering to it. It is then stowed in large bags, where it is well trodden by a negro, whilst it is thrown in, that it may lie close and compact: and, the better to answer this purpose, some water is every now and then sprinkled upon the outside of the bag. The weight of a marketable bag of West-India cotton, is usually three hundred pounds; and that weight *per acre* may be expected in the most productive plantations; but for an average of rich and poor land, only two hundred and seventy pounds weight can be reckoned in Jamaica.

The finest sort of cotton-wool comes from the island of Bourbon; then follow the growths of the Brazils, Berbice, Surinam, Tobago, &c. That of Surat in the East Indies, is the most inferior kind.

The Cyprus cotton-wool, on account of its whiteness, softness, and the length of its filaments, is accounted the best of the Levant cotton. They reckon it a good crop, when the produce of the whole island amounts to five thousand bags: under the government of the Venetians, it produced thirty thousand bags.

No small quantity of cotton-wool is gathered in the Terra di Bari, and the districts of the cities of Tursi

and Gravina in the kingdom of Naples; but the best Neapolitan cotton-wool grows in the province of Lecce.

The season for sowing the cotton-plant in the Levant and Italy, and particularly in the island of Cyprus, is the month of April, or earlier. The ground for that purpose is prepared in the same manner as the corn-fields of Italy. Furrows being formed in the earth, the seeds are cast into them in a similar way with French beans. The young plants come up with two yawning lobes, exactly like the cotyledones of the common bean; and as soon as they appear above ground, the weakest are pulled up, and none left but those which are strong and vigorous. In the months of June and July, great care is taken to hoe the earth gently around them, and the crop is collected in the months of October and November. As some little time is requisite before the seed can be freed from its cover or husk, the first exportation does not take place till February or March, the year following.

It is supposed that no fewer than 120,000 persons are constantly employed in Great Britain, in different branches of the manufacture of this single staple.

**COWRIES**, *Coris*, *Cauris*. (F. *Coris*, *Cauris*, *Bouges*; G. *Kauris*, *Schneckenköpfe*; D. *Kauris*, *Slangenhoofdjes*; I. *Cori*, *Porcellanc*; S. *Bucios*, *Siqueyes*; P. *Bucios*, *Zimbos*; DA. *Kauris*; Sw. *Kauris*; R. *Kauris*.)

Cowries are small, and exceedingly white shells, brought from the Maldivia islands, and used as money in the greatest part of the East Indies, particularly in the states of the Great Mogul. These shells, though in all appearance a production of the sea, are however found on land, and dug for pretty deep in the ground.

The cowries are used also in the trade which the Europeans carry on along the coast of Guinea. The Dutch, for the most part, furnish such European na-

tions, as trade for slaves, with cowries : and the vast quantities they sell will be no matter of surprise, when it is considered, that the French give sometimes eighty pounds weight of cowries for a negro ; and for gold, ivory, wax, and other commodities, in proportion.

The negroes not only use the cowries for money, but also for collars and bracelets to adorn themselves.

**CREAM OF TARTAR.** (G. *Weinstein* ; D. *Wynsternoom* ; F. *Crema de Tartar* ; I. *Crema di Tartaro*.)

Is a preparation of tartar, and comes to us from Italy. It is a gentle purge ; attenuates and resolves tough humours ; and is good against obstructions of the viscera.

**CUBEBS.** (F. *Cubebes* ; G. *Kubeben* ; D. *Koebeben* ; I. *Cubebi* ; S. *Cubebas* ; P. *Cobebas* ; DA. *Cubeber* ; SW. *Kobeber* ; POL. *Kubeby* ; R. *Kubebü* ; L. *Cubebæ*.)

Cubebs are small dried fruit, resembling a grain of pepper, but often somewhat longer, brought into Europe from the island of Java, &c. They are to be chosen large, fresh, and sound. Cubebs are of an aromatic, though not very strong smell ; acrid and pungent to the taste, though less so than pepper. They abound in a fine, thin, essential oil, which may be separated from them by distillation.

Cubebs are used in the kitchen as well as in medicine.

**CUMMIN.** (F. *Cumin* ; G. *Kumin*, *Langer Kummel* ; D. *Komyn* ; I. *Comino*, *Cumino* ; S. *Comino* ; P. *Cuminho*, *Cominhos* ; DA. *Kummen* ; SW. *Kumin*, *Cumin*, *Spiskumin* ; POL. *Kmin*, *Kmin kramny* ; R. *Kmin*, *Timon* ; L. *Cuminum*, *Cuminum semine longiore*.)

Cummin is an umbelliferous plant, resembling fen-

nel, but much smaller. It is annual, a native of Egypt and Ethiopia, and cultivated in the islands of Sicily and Malta, whence we are supplied with the seeds, which are accounted good carminatives and stomachics; but their principal use is in external applications.

**CURRANTS.** (F. *Raisins de Corinthe*; G. *Korinthen*; D. *Kornten, Krenten*; I. *Uve passe di Corinto*; S. *Pasas de Corinto*; P. *Passas de Corinto*; POL. *Rozinki mete, drobne*; R. *Korinka, Opoek*; L. *Passulæ Corinthiaccæ*.)

By the name of currants, we not only understand the fruit of a species of grossularia, growing in our gardens, but particularly a smaller kind of dried black grapes, brought principally from Zante and Cephalonia. They were formerly imported also from the Morea, or isthmus of Corinth, whence their name currants or Corinthians: this plantation, however, now produces no more, the Turks not allowing large vessels to enter the gulph, to take them off the hands of the cultivators.

They gather the currants in the Archipelago in August, and dispose them in couches on the ground till they dry; then clean and lay them up in magazines, pouring them in at a hole, till the magazine is full: when they cling so fast together, by their own weight, that they are forced to be dug out with iron instruments.

To cask them for exportation, they have people who grease their feet and legs, and tread them close, that they may keep the better.

Zante annually produces a sufficiency to load five or six vessels, Cephalonia three or four, and the other islands one; by far the greatest part being imported into England.

Currants are also brought from the Lipari Islands; but this kind is larger, and less esteemed, than those of the Zante and Cephalonia growth.

Currants should be chosen small, new, and in large masses. When packed close, they will keep sound for two or three years.

## D.

**DATES.** (F. *Dattes*; G. *Datteln*; D. *Dadels*, *Daayen*; I. *Datteri*; S. *Datiles*; P. *Tamaras*; DA. *Dadeler*; Sw. *Dadlar*; POL. *Daktyle*; R. *Finike*; L. *Dactyli*.)

The date is a fruit, somewhat in the shape of an acorn. It is composed of a thin, light, and glossy membrane, containing a fine, soft, and pulpy substance, which is firm, sweet, and somewhat vinous to the taste, esculent and wholesome; and within this is enclosed a solid, tough, and hard kernel, of a pale grey colour on the outside, and finely marbled within, like the nutmeg.

This fruit is the produce of the *Phœnix Dactylifera*, or Date-tree; a native of Africa, and the eastern countries, where it grows to the height of fifty, sixty, and one hundred feet. It is produced also in many parts of Europe, but never ripens perfectly there. The best are brought from Tunis; they are likewise very fine and good in Egypt, and in many parts of the East.

The date-trees are planted in the neighbourhood of rivulets or waters; for they require much moisture. To propagate them, shoots of the best trees are taken, and planted at a small distance from one another. At the end of three or four years, these shoots begin to bear fruit; but this fruit is yet dry, without sweetness, and even without kernels; and they never reach the highest degree of perfection of which they are susceptible, till they are about fifteen to twenty



years old. This tree is also propagated from seeds; but in that case never produces such good fruit, as when raised from shoots.

Those dates are esteemed the best, which are large, soft, yellowish, with few or no wrinkles, and full of pulp; either of a good white throughout, or else reddish towards the surface, and white towards the kernels.

Dates are preserved in three different ways; some pressed and dried, others pressed more moderately, and others not pressed at all, only moistened with the juice of other dates as they are packed up; which is done in baskets or skins. Those preserved in this last way, are much the best.

In regard to their medicinal virtues, dates are said to strengthen the stomach and intestines; they are also recommended in diseases of the breast, &c.

In Upper Egypt, many families subsist almost entirely upon this fruit. The stones are as hard as horn, and nobody would imagine that any animal could eat them, but the Egyptians break, grind, and, for want of better food, give them to their camels to eat. In Barbary, they turn handsome beads for paternosters of these stones. Of the leaves they make baskets, or rather a kind of short bags, which are used in Turkey, on journeys and in the houses. In Egypt they make fly-flaps of them, and brushes to clean their sofas and clothes. The hard boughs they use for fences about their gardens, and cages to keep their poultry in. The trunk or stem, when split, is used for the same purposes, and also for timber and fire-wood. The web-like integument covering the tree, between the boughs, has threads, which run perpendicularly and horizontally crossing each other, in the same manner as the cocoa-nut tree: this is of considerable use in Egypt, where they make all their ropes and rigging of the smaller vessels with it. It is esteemed strong and lasting.

DEALS. (F. *Planches*; G. *Dielen*; D. *Deelen*; I. *Tavole, Piane*; S. *Tablas*; P. *Taboinhas*; DA. *Dæler*; Sw. *Tiljor*; POL. *Tarcice*; R. *Doski*.)

Deals are thin fir-planks, formed by sawing the trunk of a tree into a great many longitudinal divisions, of more or less thickness, according to the purposes they are intended to serve.

A very good method of seasoning deals, is to throw them into salt water, as soon as they are sawed, and keep them there three or four days, frequently turning them.

Deals are imported into this country, from Christiana, and other ports of Norway; from Dantzic and various parts of Prussia; and red and white wood deals, from St. Petersburg, Archangel, Narva, Memel, &c.

Deals are sold, either by the piece, like Dantzic deals; or by the reduced or standard hundred, like the Russia and Memel deals; or by the long hundred, of one hundred and twenty deals, like the Norway Deals.

A standard, or reduced deal, is one inch and a half thick, eleven inches wide, and twelve feet long. A standard, or reduced hundred, is one hundred and twenty times that quantity.

DIAMOND. (F. *Diamant*; G. *Diamant*; D. *Diamant, Demant*; I. *Diamante*; S. *Diamante*; P. *Diamante*; DA. *Diamant*; Sw. *Demant, Diamant*; POL. *Dymant*; R. *Almas*; L. *Adamas*.)

This is the most valuable and hardest of all gems. It is, when pure, perfectly clear, and pellucid as the purest water; and eminently distinguished from all other substances, by its vivid splendour, and the brightness of its reflections, never fouled by any admixture of earthy or other coarse matter; susceptible of elegant tinges from metalline particles, giving fire with steel, not fermenting with acid menstruums,

scarcely calcinable by any degree of fire, and of one simple and permanent appearance in all lights.

The finest diamonds are those of a complexion like a drop of pure water. If they be tintured yellow, blue, green, or red, in a high degree, they are next in esteem; but if tintured with these colours only in a low degree, the value of them is greatly diminished. There are also diamonds of other complexions; such as brown, resembling the brownest sugar candy; or of a dark hue, like dusky iron. In the Philosophical Commerce of Arts, we are even told of a black diamond. The first water in diamonds, means the greatest purity and perfection, like the purest water. When they fall short of this perfection, they are said to be of the second and third water, &c. till the stone may be properly called a coloured one.

The diamond is extremely various in shape and size; being found in the greatest quantity very small, and the larger ones very seldom met with. The proper and determinate figure into which it must concrete, when not impeded by any accident in its formation, is an inequilateral octohedron; and often its several surfaces in this figure, are as bright as if polished by art. The diamond is likewise often thrown into two other figures, both seeming also regular ones; the one a prismatic columnar one of six angles, the other an oblong quadrilateral column, with two truncated ends. Besides these regular figures, it is every day found in numberless other misshapen forms.

This gem is found only in the East Indies, and in Brasil in South America. In the East Indies there are two mines and two rivers, whence it is drawn. The mines are, that of Raolconda, in the province of Carnatica; and that of Gani or Coulour, seven days' journey from Golconda eastwardly. The two rivers are that of Gonal, near the town of Soumelpour, in Bengal; and that of Succudan in the island of Borneo.

Diamonds, like other gems, are divided into oriental and occidental; the finest and hardest being called

oriental, whether produced in the east or west; as the diamonds of Brasil equal the finest oriental ones.

The art of cutting these precious stones, was invented in 1476, by Louis de Berquen, a native of Bruges. They are cut and polished by means of a mill, which turns a wheel of soft iron, sprinkled over with diamond-dust, mixed with oil of olives. The same dust, well ground, and diluted with water and vinegar, is used in the sawing of diamonds, which is performed with an iron or brass wire, as fine as a hair.

The value of diamonds among jewellers is thus calculated. Supposing the value of a rough diamond to be two pounds *per* carat; to find the value of those of greater weight, they multiply the square of their weight by two: thus the value of a rough diamond weighing four carats, is equal  $4 \times 4 \times 2 = 16 \times 2 = 32l.$  To find the value of wrought diamonds, they suppose half their weight lost in manufacturing them, and therefore multiply the square of double their weight by two; thus the value of a wrought diamond, weighing three carats, is equal  $6 \times 6 \times 2 = 36 \times 2 = 72l.$

The largest diamond ever known in the world, is that belonging to the King of Portugal, which was found in Brasil, and weighs 1680 carats, and according to the above-mentioned calculation, is worth 5,644,800*l.* sterling, but has been valued by connoisseurs at 224 millions sterling. The famous diamond, which adorns the sceptre of the Empress of Russia, weighs 779 carats.

DITTANY, *White Dittany, Fraxinella.* (F. *Fraxinelle, Dictame blanc*; G. *Weisser Diptam*; D. *Witte Diptam*; I. *Frassinella, Dittamo bianco*; S. *Chitan, Dictamo blanco, Fresnillo*; P. *Fraxinello, Dictamo branco*; DA. *Hvüel Diptamrod*; Sw. *Huit Diptan*; POL. *Dyptan bialy*; R. *Badan*; L. *Fraxinella, Dittamnus albus.*)

This is a medicinal plant, reputed excellent against the bitings of venomous beasts, worms engendered in

the human body, and the like. Its root, wherein all its virtue is lodged, is about the thickness of a finger, and is frequently divided into a number of little branches; its colour is white, its taste bitter, and its smell strong, somewhat like the scent of a he-goat. It must be chosen white, both inside and outside, not fibrous, and well cleaned. There are several other kinds of dittany; as the bastard dittany, and the wild dittany.

**DOWN.** (F. *Duuet*; G. *Dunen, Flaumfedern*; D. *Dons*; I. *Penna matta, Piumini*; S. *Flojel, Plumazo*; P. *Frouxel*; DA. *Duun*; Sw. *Tjan*; POL. *Puchy*; R. *Puch*; L. *Plumæ.*)

Down, are the shortest, smoothest, softest, and most delicate feathers of birds, particularly geese, ducks, and swans; growing on their neck and part of their stomach.

Down is a commodity of most countries: but that in most repute, for fineness, lightness, and warmth, comes from Denmark, Sweden, and other northern countries. (See **EDERDON.**)

*Ostrich's down*, called otherwise ostrich's hair, and sometimes wool, is of two sorts; that called the fine of ostrich, is used by hatters, in the manufacture of common hats: and that called coarse of ostrich, serves for the making of list for fine white cloth.

**DRAGON'S-BLOOD.** (F. *Sang de dragon*; G. *Drachenblut*; D. *Draakenbloed*; I. *Sangue di drago*; S. *Sangro de drago*; P. *Sangue de drago*; DA. *Drageblod*; Sw. *Drakblod*; POL. *Smocza krew*; R. *Drakonowa krow*; L. *Sanguis draconis.*)

Dragon's-blood is a gummi-resinous substance, brought from the East Indies, either in oval droops wrapped up in flag leaves, or in large masses, composed of smaller tears. It is said to be obtained from the palmijuncus draco, the calamus rotang, the dra-

cena draco, the pterocarpus draco, and several other vegetables.

The writers on the materia medica, in general give the preference to the former, though the others are not unfrequently of equal goodness. The fine dragon's-blood of either sort, breaks smooth, free from any visible impurities, of a dark red colour; which changes, on being powdered, into an elegant bright crimson.

Several artificial compositions, coloured with the true dragon's-blood, or brasil wood, are sometimes sold instead of this commodity. Some of these dissolve like gums in water, others crackle in the fire, without proving inflammable; whilst the genuine dragon's-blood melts, catches flame, and is not acted on by watery liquors. This drug in substance has no sensible smell or taste; when dissolved, it discovers some degree of warmth and pungency.

Dragon's-blood is principally used as a pigment; in medicine, it is very rarely employed in the present practice.

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## E.

**EBONY.** (F. *Bois d'Ebène*; G. *Ebenholz*; D. *Ebbenhout*, *Ebbehout*; I. *Ebano*; S. *Ebano*; P. *Ebano*, *Evano*; DA. *Ebentræe*, *Ebenholt*; Sw. *Ebentræd*, *Ebenholts*; POL. *Heban*; R. *Ebenowoe derewo*; L. *Ebenus*.)

Ebony is an exceedingly hard and heavy kind of wood, susceptible of a very fine polish, and on that account used in mosaic and inlaid works, for toys, &c. It is of divers colours, most usually black, red, and green; produced chiefly in the island of Madagascar, and the Mauritius.

Travellers give very different accounts of the tree that yields the black ebony; some say that it is a sort of palm tree, others a cytisis, &c. M. Flacourt tells us, that it grows very high and big, its bark being black, and its leaves resembling those of the myrtle, of a deep, dusky, green colour.

Black ebony is much preferred to that of other colours. The best is a jet black, free of veins and rind, very massive, astringent, and of an acrid pungent taste. It yields an agreeable perfume, when laid on burning coals: when green, it readily takes fire, from the abundance of its fat.

Green ebony, besides Madagascar and the Mauritius, likewise grows in the Antilles, especially in the isle of Tobago. The tree that yields it is very bushy; its leaves are smooth, and of a fine green colour. Beneath its bark is a white rind, about two inches thick; all under which, to the very heart, is a deep green, approaching towards a black, though sometimes streaked with yellow veins. Its use is not confined to inlaid work, it is likewise good in dying, as yielding a fine green tincture.

Of red ebony, called also Grenadilla, we know little more than the name.

Ebony is now less used than antiently, since the discovery of giving other hard woods a black colour.

There is a sort of ebony coming from the West Indies, which is either black or white. This bears a flower resembling that of the English broom; seldom rises above eighteen feet, and in the largest part of the stem, does not exceed five inches diameter. It is a fine timber wood, has a smooth even grain, which takes a good polish, and is very proper for bed-posts, and a variety of turnery ware: for which purposes the black is generally preferred, the heart of which is the complexion of jet. There is likewise a bastard ebony, growing in the West-India islands, called mountain ebony, which is of a dark brown.

**EIDER-DOWN**, *Ederdon*. (F. *Ederdon*, *Edredon*, *Egledon*; G. *Eiderdunen*; D. *Eiderdons*; I. *Piumini del Norte*; S. *Ederdon*, *Edredon*; P. *Edredon*; D.A. *Edderduun*; Sw. *Aderdun*, *Dun*; POL. *Puch bialozorowy*; R. *Agatschiï puch*.)

Eider-down, is a kind of very fine down, coming from Denmark, Norway, and Iceland. It is the produce of a species of wild-duck, called Eider. To collect this down, the inhabitants, at the risk of their lives, by means of cords, let themselves down the steepest precipices, where these birds have their nests.

The down is made up in balls, about the size of a fist, and weighing from three to four pounds. It is so fine and soft, that if a ball be opened, and the down cautiously held over red-hot coals, to warm, it will completely fill a bed for two people.

This costly article, when fine and picked, costs in Denmark, twelve shillings sterling the pound, and upwards.

**ELEPHANT'S TEETH**; see **IVORY**.

**EMERALD**. (F. *Emeraude*; G. *Smaragd*; D. *Smaragd*, *Esmeraud*; I. *Smeraldo*; S. *Esmeralda*; P. *Esmeralda*; D.A. *Smaragd*; Sw. *Smaragd*; POL. *Szmaragd*; R. *Isumrud*; L. *Smaragdus*.)

The emerald is a genus of precious-stones, of a green colour.

Like other gems, this is divided into oriental and occidental. The oriental emerald, is of the hardness of the sapphire and ruby, and is second only to the diamond in lustre; it is very scarce, and at present only found in the kingdom of Cambay. The American emerald is of the hardness of the garnet, and the European somewhat softer than that, yet considerably harder than crystal.

The genuine emerald, in its most perfect state, is perhaps the most beautiful of all the gems. It is



found of various sizes, but usually small ; great numbers of the sixteenth of an inch in diameter, and some as large as a walnut.

The emerald is of different figures, sometimes of a pebble-like form, but much more frequently of a columnar one, resembling common crystal.

The emeralds of the East Indies are evidently finer than those of any other part of the world ; but our jewellers seldom meeting with these, call the American emeralds the oriental, and usually sell crystal, accidentally tinged with green, under the name of the occidental emerald.

EMERY, *Emeril*. (F. *Emeril*, *Emeri* ; G. *Schmergel* ; D. *Ameril*, *Smergel* ; I. *Smeriglio*, *Smeregio* ; S. *Esmeril* ; P. *Esmeril* ; DA. *Smergel* ; Sw. *Smirgel* ; POL. *Szmergiel* ; R. *Nashdak* ; L. *Smiris*.)

Emery is a sort of metallic stone, of which three kinds are usually distinguished ; the Spanish, red, and common emery.

The first sort is found in the gold-mines of Peru, and being judged a kind of marcasite of that rich metal, is prohibited to be exported. The red emery is found in copper-mines, and the little there is of it in England, comes from Sweden and Denmark. The common emery is taken out of iron-mines, and almost the only sort used in England ; it is of a brownish colour, bordering a little on red, exceedingly hard, and in consequence difficult to pulverize.

The English are the only people who have the art of reducing common emery into powder, and thus send it to their neighbours. Of the powder, the most subtle and impalpable is the best ; as to the stone, it should be chosen of a high colour, and as free of the rock as possible.

The consumption of emery is very considerable among the armourers, cutlers, locksmiths ; glaziers, lapidaries, masons, and other mechanics ; some of whom use it to polish and burnish iron and steel.

works ; others, to cut and scallop glass, marble, and precious stones, which is done with emery paper.

**EPSOM SALT.** (F. *Sel d'Epsom* ; G. *Epsom salz* ; D. *Epsom zout* ; I. *Sale di Epsom* ; S. *Sal de Epsom* ; P. *Sal de Epsom* ; D<sub>A</sub>. *Epsom salt* ; Sw. *Epsom salt*.)

Epsom salt is the result of a combination of the vitriolic acid, with the earthy substance called magnesia. The vitriolic acid is found combined with magnesia in great plenty, in the bitter liquor which remains after the crystallization of common salt. If this liquor be set by for some time in a leaden vessel, a large quantity of salt shoots, very much resembling Glauber's salt, and frequently sold in lieu of it. If, after the first crystallization of the bittern, the remainder be gently evaporated further, a fresh quantity of the same salt will shoot : and if the liquor be then hastily evaporated, a salt will still be crystallized ; but instead of large regular crystals, it will concrete into very small ones, having something of the appearance of snow when taken out of the liquid. This salt, shot into small crystals, is termed Epsom salt, from its being first produced from the purging water at Epsom in England. The bittern yielding this salt in such great plenty, these waters were soon neglected, as they afforded it but very sparingly.

**ESSENCES.** (F. *Essences* ; G. *Essenzen* ; I. *Essenze* ; S. *Esencias* ; P. *Essencias*.)

Essence, in chemistry, denotes the purest, most subtile, and balsamic part of a body ; extracted either by simple expression, or by means of fire, from fruits, flowers, and the like. Of these there are great varieties used on account of their agreeable smell and taste, by apothecaries, perfumers, and others. Those extracted by means of fire, with more propriety are to be counted among the essential oils.

*Essence of bergamot* is a fragrant essence, extracted

from a fruit which is produced by ingrafting a branch of lemon-tree, upon the stock of a bergamot pear. It is imported from Italy and Sicily, particularly from Reggio and Messina. This spirit is extracted, by paring off the rind of the fruit with a broad knife, pressing the peel between wooden pincers against a sponge, and as soon as the sponge is saturated, the volatile liquor is squeezed into a phial.

*Essence of orange*, and *essence of lemon*, are prepared in a similar manner, and come from the same countries.

The *essences of lavender, of thyme, of rosemary, of anise, of cloves, of cinnamon, &c.* are obtained by means of fire.

ESSENCE OF NEROLI ; see ORANGES.

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## F.

FEATHERS, *Bed-feathers.* (F. *Plumes, Plumes a lit* ; G. *Federn, Bettfedern* ; D. *Bedveern, Pluimen* ; I. *Piume* ; S. *Plumas* ; P. *Plumas* ; D<sub>A</sub>. *Fiere, Sengefiere* ; Sw. *Fjädrar* ; POL. *Piora* ; R. *Pera*.)

The feathers of birds make a considerable article of commerce, particularly those of the ostrich, heron, swan, peacock, goose, and other poultry ; for plumes, ornaments of the head, filling of beds, and writing pens. (See QUILLS.)

There are scarcely any birds, but what bed-feathers may be procured from, particularly those of the domestic kind ; yet swans, geese, and ducks, are those that furnish most, and the best.

Geese are plucked three times a year ; towards the end of May, about Midsummer, and at the latter end of August ; but chiefly when the feathers are ripe, that is, when they are perceived to fall off of them-

selves. The feathers of dead birds are in the least esteem, on account of the blood imbibed by the quill; which putrifying, communicates an offensive smell to the feather, and takes some time to evaporate; for which reason, live birds should not be stripped, till their feathers are ripe.

Feathers are imported in this country, from Poland and Germany. They are divided into white, half grey, and grey, and valued accordingly. The best feathers should be white, downy, void of large stems, fresh, and sweet. Care should be taken that no sand be intermixed, which is frequently practised to increase the weight.

*Ostrich Feathers* are dyed and dressed by the feather-dressers, to serve as ornaments. They are a very costly article, brought to us from Africa, and particularly the coast of Barbary. See DOWN.

FENNEL-SEED. (F. *Fenouil*; G. *Fenchelsamen*; D. *Venkel*; I. *Finocchio*; S. *Hinojo*; P. *Funcho*; DA. *Fennikel*; Sw. *Fänkol*; POL. *Kopr wlofsky*; R. *Woloskoi Ukrop*; L. *Feniculum*.)

There are two very different sorts of anethum fœniculum, or fennel-seed; the common and the sweet.

The sweet fennel is annual, a native of the warmer climates, and cultivated in our gardens. We commonly receive a supply from Germany, France, and other parts, superior to our own growth. Common fennel is perennial, a native of the southern parts of Europe, and cultivated in our gardens. The seeds of this species are warmer and more pungent, but less sweet, and of a less grateful flavour than those of the preceding.

Fennel-seed enters into many officinal preparations, and is used in the kitchen, as well as for confectionery. Distilled waters, oil, and spirituous extracts, are also made of it.

FENUGREEK. (F. *Fenu-grec*; G. *Bockshorn*, *Foenum graecum*; D. *Bokshoornzaad*; I. *Fienogreco*; S. *Alforva*, *Atholva*; P. *Alforvas*, *Fenogreggo*; D.A. *Fonugrek*; Sw. *Fenugrek*; L. *Fœnum Græcum*.)

This is a medicinal plant, thus called, because antiently brought from Greece; though now cultivated in several parts of Europe. Its stem is about a foot high, its leaves small, and disposed somewhat like those of trefoil, yielding a little white flower, whence arises a long pointed pod, not unlike the horn of a bullock in shape; the grain or seed is inclosed in this pod, which bears the name of the plant, is smaller than mustard-seed, very hard and solid, of a triangular form, and a strong disagreeable smell; being of a yellow gold colour when new, but turning ruddy or brown when kept. The good choice of it consists in being new, plump, and of a high gold colour.

This seed is principally cultivated in France, and exported thence in considerable quantities.

French dyers use it for the scarlet dye; and physicians order it in decoctions and cataplasms; given to cattle, particularly horses, it creates an appetite and fattens them.

FIGS. (F. *Figues*; G. *Feigen*; D. *Vygen*; I. *Fichi*; S. *Higos*; P. *Figos*; D.A. *Figen*; Sw. *Fikon*; Pol. *Fiki*; R. *Winnüajagodi*; L. *Fici*, *Caricæ*.)

The *figus carica*, or fig-tree, has an upright stem, branching fifteen or twenty feet high, and garnished with large palmated or hand shaped leaves. Of this there are several varieties; as the common fig, a large, oblong, dark purplish, blue fruit, which ripens in August; the brown, or chesnut fig, a large globular, chesnut-coloured fruit, ripening in July and August; the black, the green, and the brown Ischia figs; the Malta fig; the round brown Naples fig; the long brown Naples fig; the great blue fig; the black Genoa fig.

Dried figs are a considerable article, amongst groceries as well as medicaments. The best are those from Turkey; the Faro or Sicily figs, are smaller and worth considerably less. Many figs are also brought from the South of France, where they prepare them in the following manner. The fruit is first dipped in scalding hot lye, made of the ashes of the fig-tree, and then dried in the sun. Hence these figs stick to the hands, and scour them like lixivial salts; and for the same reason, they excite to stool, without griping. They are moderately nutrimental, grateful to the stomach, and easier to digest, than any other of the sweet fruits.

FISH. (G. *Fishe*; D. *Vischer*; DA. *Filk*; F. *Poisson*; I. *Pisci*; S. *Pescudos*.)

Innumerable are the various species of fish; the commercial importations are however but very limited: the cod from Newfoundland and Norway, anchovies from the Mediterranean, and sardanias from the island of that name, form nearly all that is drawn from foreign parts.

FLAX. (F. *Lin*; G. *Flachs*; D. *Vlasch*; I. *Lino*; S. *Lino*; P. *Linho*; DA. *Hör*, *Hærr*; Sw. *Lin*, *Hör*; POL. *Len*; R. *Len*, *Lon*; L. *Linum*.)

The flax-plant has a slender hollow stem, usually about two feet high. Its bark consists of fibres, much like those of hemp; which being dressed and worked, are manufactured into linen.

The ground for sowing flax seed upon, ought to be rich, neither too wet nor too dry, laid flat, and reduced to a fine garden-mould by much harrowing, and all stones and sods carried off.

The time for sowing linseed, is from the middle of March to the end of April. Late-sown linseed may grow long, but the flax upon the stalk will be thin and poor.

When the crop grows so short and branchy, as to

appear more valuable for seed than flax, it ought not to be pulled till it be thoroughly ripe; but if it grow long and not branchy, the seed should be disregarded, and all the attention given to the flax. In the last case, it ought to be pulled after the bloom has fallen, when the stalk begins to turn yellow; and before the leaves fall, and the balls turn hard and sharp pointed.

When the stalk is small, and carries few balls, the flax is fine; but the stalk of coarse flax is gross, rank, branchy, and carries many balls.

Few persons who have seen pulled flax, are ignorant of the method of laying it in handfuls across each other; which gives the flax sufficient air, and keeps the handfuls separate and ready for the rippler. After pulling, the operation of rippling should by no means be neglected, whether the flax be regarded more than the seed, or the seed more than the flax. In the latter case, it is a matter in course, to preserve and collect the seed; but even in the former case it is necessary, as the balls, if put into the water with the flax, breed vermin there, and otherwise spoil the water. In Lincolnshire and Ireland, they think that rippling hurts the flax, and therefore, instead of it, they strike the balls against a stone.

The flax being rippled, must then be watered, and a canal of standing soft water, deserves the preference for this operation. The water should be exposed to the sun, but the flax in it, protected from its rays by divots. The flax is sufficiently watered, when it feels soft to the gripe, and the hazle parts easily with the boon or show; which last is then become brittle and looks whitish. When these signs are found, it is taken out of the water, and spread thinly upon a dry ground of short heath or short grass, to dry.

For the purpose of separating the boon, or core, from the flax, which is the bark of the plant, the stalks in small parcels are broke in a hand-machine, called

the break ; and for clearing it of the broken boon, the flax is held over the stock, and struck or threshed with the scutcher. These methods of breaking and scutching the flax, being slow and very laborious, a water-mill has been invented in Scotland, which makes great dispatch, but is generally complained of, as wasteful.

The next operation that flax undergoes is heckling ; which consists in striking the flax upon the teeth of the heckle, and drawing it through the teeth.

The principal sorts of flax imported into this country are, St. Petersburg, Narva, Riga, Reval, Pernau, Liebau, Memel, Oberland, and Dutch flax.

The St. Petersburg and Narva flax, are nearly of the same quality, and the latter but little inferior to the former. Both sorts come to us in bundles of twelve, nine, and six heads.

The Riga flax seems to deserve the preference of any imported from the Baltic. It is the growth of the provinces of Marienburg, Druania, Thiesenhausen, and Lithuania. The best Marienburg is called simply *Marienburg* (M), or *Marienburg clean*; the second quality *cut* (CM); and the third, *risten dreyband* (RD); of the three other provinces, the first quality carries the name of *rakitzer*; as *Druania rakitzer* (DR), *Thiesenhausen rakitzer* (TR), and *Lithuania rakitzer* (LR). The cut flax of these three provinces, is the second quality, and to the third quality belong the *badstub*, and *badstub cut* (B and BG); the *paternoster* (PN); and *hafs three band* (HD). *Badstub* and *paternoster*, is the refuse of the *rakitze* flax, and the *three band*, again, the refuse of the former sorts, and consequently very ordinary.

The Reval and Pernau flax consists of Marienburg, cut, *risten*, *hafs three band*, and *three band*.

The Liebau and Memel growths are distinguished by the denomination of four and three band. These



two sorts, as well as the Oberland flax, coming from Königsberg, Elbing, &c. are little esteemed in the British markets.

The Flanders, or Dutch flax, is well dressed, and of the finest quality; whereof the fine thread and lace made in those countries, are the strongest evidence.

The good and even quality of all flax coming from the Russian ports, proceeds from the institution of public bracks; that is to say, the flax passes the examination of sworn inspectors, who do not suffer it to be shipped, if inferior to the usual quality of the mark, which it is to bear.

Flax is much cultivated in Egypt, especially in the island of Delta, and near Damietta. A considerable quantity of it is yearly exported to Venice and Leghorn. It is soft and good, but not better than the European. It grows very high in that country, and stems may be seen four feet high, and as thick as the common rush. It flowers in winter. The cloth they make of it is coarse and thin, and only purchased on account of its cheapness.

FLAX-SEED; see LINSEED.

FLOUR. (F. *Farine*; G. *Mehl*; D. *Meel*; I. *Farina*; S. *Harina*; P. *Farinha*; DA. *Meel*; Sw. *Mjöl*; POL. *Maka*; R. *Muka*; L. *Farina*.)

Meal is the powder of various sorts of grain, or pulse, ground: and flour the meal of wheat-corn, finely ground, and sifted from the bran.

Wheat being very apt to get heated and damaged in long voyages; the Americans to prevent this inconveniency, and to diminish the expence of freight, reduce it into flour, and send it to the European markets, made up in barrels; and this made a very important branch of commerce between them and Great Britain, during the last war.

The finest flour, particularly when stale or ill prepared, is most liable to be destroyed by a number of little animals, which are so small, that they can only be distinguished with a microscope. When they once have taken possession of a parcel of this valuable commodity, it is impossible to drive them out; and they increase so fast, that the only means of escaping a total loss, is to use it as soon as possible. The way to prevent their breeding in the flour, is to preserve it from damp, as it cannot be kept too dry.

**FOSSIL BEZOAR**, is a kind of figured stone, formed like the animal Bezoar, and supposed to have the same virtues. It is of a purple colour, the size of a walnut, and light. When broken, it is found to be an iron crust, containing in its hollow a fine greenish white earth, which is used, and not the shells. It is called *Sicilian earth*, because the Fossil Bezoar is chiefly found in Sicily.

**FRANKFORT BLACK.** (F. *Noir d'Allemagne*; G. *Frankfurter Schwärze, Kupferdrucker Schwärze*; I. *Nero di Germania*; S. *Negro di Germania*; P. *Negro di Germania*.)

This black is made of the lees of wine, burnt, washed in water, and ground in mills, together with ivory or peach-stones burnt.

It is usually brought from Frankfort on the Mayn, Mentz, and Strasburg; either in lumps or powder. That of France, on account of the difference in the lees of wine, is less valued than that of Germany.

This black makes the principal ingredient in the rolling-press printers ink.

**FRANKINCENSE, Incense.** (F. *Encens, Encens fin ou mâle, Oliban*; G. *Weihrauch*; D. *Wierook*; I. *Incenso, Olibano*; S. *Incienso, Incienso macho,*

*Olibano* ; P. *Incenso*, *Incenso macho*, *Olibano* ; DA. *Virog*, *Virak* ; Sw. *Veirauch*, *Virack* ; POL. *Kadzidlo* ; R. *Ladon prostoi* ; L. *Thus*, *Olibanum*.)

Frankincense, or Olibanum, is a gummy resin, the product of the *Juniperus Lycia*; consisting of about equal parts of a gummy and resinous substance; the first soluble in water, and the other in rectified spirit.

It is brought from Turkey and the East Indies, but is principally collected in both the Arabias, whence it is brought to Jodda, the harbour of Mecca. It usually comes to us in drops or tears, like those of mastich, but larger: of a pale yellowish, and sometimes reddish colour; a moderately warm pungent taste, and a strong, not very agreeable smell. When brought to us, it is so full of small stones, that one hundred and fifty pounds weight will not yield above fifty to seventy pounds of pure frankincense.

The Arabians hold their own incense in no estimation, and make use only of that which comes from India. Probably the appellation of Arabian incense, among the antients, proceeds from the Arabians trading in it, and conveying it from India to the ports of Egypt and Syria.

The principal staple place for frankincense is Marseilles; whence it chiefly goes to Russia, where it is used in making the Russian leather. A large quantity is likewise burnt by the Russians, and Roman-Catholics, in their churches.

This article differs greatly in price and goodness. The best is in tears of a fragrant smell, pellucid, and of a yellowish white colour, brittle and easily pulverized. Of this quality, however, little is to be found in the common frankincense, and it is usually selected on purpose for the apothecaries' shops.

The dealers count different sorts of this gum resin: namely, *olibanum masculum*, or the best frankincense, in large, round, palish-yellow pieces; *olibanum*

mammosum, in soft, yellow, and rather long tears ; olibanum orobæum, in small round grains ; olibanum manna thuris, or the broken dust ; and the Indian, or Moccha frankincense, which is the most impure of any.

FRUIT, in natural history, signifies the last production of a tree or plant, for the propagation of its kind : in commerce, fruit denotes the production of a fruit-tree ; as the apple, pear, plumb, peach, apricot, cherry, grape, orange, lemon, currant, raisin, fig, almond, olive, and others, both foreign and domestic.

FULLERS' EARTH. (F. *Terre à foulon* ; G. *Walkererde* ; D. *Vollärde* ; I. *Terra da' purgatori* ; S. *Tierra de batan* ; P. *Greda de Pizoerio* ; D.A. *Vulkejord* ; Sw. *Valklera, Valkjord* ; R. *Schiffernaja glina* ; L. *Terra fullonum*.)

The true fullers' earth of England, is a kind of clay, of a greyish ash-coloured brown, in all degrees ; from very pale, to almost black, and it has generally something of a greenish cast. When dry, it feels as fat and slippery as soap, but is not wholly diffusible in water. When mixed with this fluid, it falls to pieces, either in large or smaller masses, so as to assume the appearance of curds. In the fire, it readily melts into a white or reddish frothy slag ; which in consequence of its internal vacuities, is then of a larger volume than it formerly was. In the mass, it breaks into irregular scaly pieces.

The greatest quantity, and the finest earth of this kind in the world, is dug in the pits of Wavedon, near Woburn, in Bedfordshire. The Hampshire fullers' earth, is of a dusky brown, inclining to green, with veins of a feint yellow.

Every fine clay that does not communicate a colour, is in general fit for the business of fulling ; even

the excrements of hogs, mixed with human urine, are used for this purpose, in various woollen-manufactories.

The properties required in good fullers' earth are, that it shall carry off the oily impurities of the woollen cloth, and at the same time thicken it, by causing the hairs or fibres to curl up. The best is composed of fine siliceous earth with clay, and a little calcareous earth.

The real fullers' earth is found not only in England, but in Sweden, Crim Tartary, and Austrian Flanders.

FURS, *Furskins*. (F. *Fourure*; G. *Pelzwerk*, *Rauchwerk*; D. *Bout*, *Boutwerk*; I. *Pellice*; S. *Pellesteria*; P. *Pelleteria*; DA. *Foervark*, *Pelsverk*; Sw. *Federwerk*, *Pelsverk*; POL. *Futro*, *Futrowizna*, *Kosmacizna*; R. *Mächkaja ruchläd*.)

Before the discovery of Canada, the forests with which it was overrun, were little more than the extensive haunt of wild beasts, which had multiplied prodigiously. The few men, who lived in those deserts, having neither flocks of tame animals, nor any husbandry, fed and clothed themselves entirely with the wild beasts they destroyed. As soon as luxury had led us to make use of their skins, the natives waged a perpetual war against them; which was the more active, as it procured them plenty, and a variety of gratifications, which they were unaccustomed to; and the more destructive, as they had adopted the use of our fire-arms. This caused a great quantity and prodigious variety of furs to be brought into the ports of Europe.—We shall content ourselves with giving some account of those that are still in request.

The OTTER is a voracious animal, which runs or swims along the banks of the lakes or rivers, commonly lives upon fish, and when that fails, will feed upon grass, or the rind of aquatic plants. He is found in all those countries which abound in water and are temperate, but is more common and much

larger in the northern parts of America, and his hair no-where else so black or so fine. He much resembles the beaver; but the hair of the former is not half so long as that belonging to the latter, nor is the colour exactly the same; for the hair of an otter, under the neck, stomach, and belly, is more greyish than that of the beaver, and it varies in many other respects.

The **POLE-CAT** is in equal estimation with the otter, among the Canadian huntsmen. There are three species of this animal; the first is the common pole-cat; the second is called the mink; and the third the stinking pole-cat, because his urine, which he voids in his fright when pursued, is so offensive, that it infects the air to a great distance. Their hair is darker, more glossy, and more silky, than in Europe. The stinking pole-cat, also called skunk, has a long and shining fur, of a dirty white, mixed in some places with black; so that it appears to be shaded in particular parts with black, without being either spotted or striped. The skin of the mink is blacker than that of an otter, or almost any other creature; "as black as a mink," being a proverbial expression in America. It is not, however, so valuable; though this greatly depends on the season in which it is taken. Its tail is entirely without hair.

**SQUIRRELS.** There are five sorts of squirrels in North America; the red, the grey, the black, the variegated, and the flying. The two former are exactly the same as those of Europe; the black are somewhat larger, and, as to the rest, differ from them only in colour. The variegated also resemble them in shape and figure, and are very beautiful; being finely striped with white or grey, and sometimes with red or black. The American flying squirrel is much less than the European, being not above five inches long, and of a russet, grey, or ash colour on the back, and white on the under-parts.

Even the RAT, in North America, is valuable for his skin. There are two sorts especially, whose skin is an article of trade. The one, which is called the opossum, is twice as large as an European rat. His hair is commonly of a silver grey, sometimes of a clear white. The female has a bag under her belly, in which, when pursued, she puts her young ones. The other, which is called the musk-rat, because his testicles contain musk, has all the characteristic qualities of the beaver, of which he seems to be a diminutive; and his skin is employed for the same purposes.

The ERMINE, which is about the size of a squirrel, but not quite so long, has the same lively eyes and keen look; and his motions are so quick, that the eye cannot follow them. The tip of his long and bushy tail, is as black as jet. His hair, which, in summer, is as yellow as gold, turns as white as snow in winter. This lively and light animal, is one of the beauties of Canada; but, though smaller than the sable, is not so common.

The MARTIN, is only to be met with in cold countries, in the centre of the forests, far from all habitations. It is a beast of prey, and lives upon birds. Its fur is much esteemed, though far inferior to the species distinguished by the name of the sable. The whole body is covered with fur of a brownish sallow colour, and there are some in the more northern parts, which are black. The skins of the latter are of much greater value than the others; and the finest among them are those that have the fur extending along the back, quite to the tip of the tail.

The animal which the antients called LYXX, known in Siberia by the name of the *Ounce*, is only called the *wild-cat* in Canada, where it is smaller than in our hemisphere. This animal lives upon what game he can catch; his flesh is known to be very white and well-flavoured, but he is hunted chiefly for the sake of his skin; the hair of which is very long, and of a

fine light grey, but less esteemed than that of the fox.

The Fox is a carnivorous and mischievous animal, a native of the frozen climates, where nature, affording few vegetables, seems to compel all animals to eat one another. In warmer climates, he has lost much of his original beauty, and his fur is not so fine. In the north, it has remained long, soft, and full; sometimes white, sometimes brown, and often red or sandy. The finest of any, is that which is black; but this is more scarce in Canada than in Muscovy, which lies further north, and is not so damp. There is a species of fox, found near the river Mississippi, having a fur of a fine silver grey, which is extremely beautiful.

The BEAR, in a cold and severe climate, is most commonly black. As he is rather shy than fierce; instead of a cavern, he chooses for his lurking-place the hollow rotten trunk of an old tree. There he fixes himself in winter, as high as he can climb, and seldom goes abroad in quest of food. He is forced out of his retreat, by its being set fire to; and as soon as he attempts to come down, he falls under a shower of arrows, before he can reach the ground. The Indians feed upon his flesh, rub themselves with his grease, and clothe themselves with his skin. Bearskins make a fur in great esteem, used in housings, on coach-boxes, &c. Of the skins of bears' cubs, are made gloves, muffs, and, in some countries, cloths.

The WOLF. The wolves of North America are much smaller than those met with in other parts of the world. There are two kinds; one of a sallow colour, the other of a dun, inclining to black.

The BEAVER is a harmless animal, and one which the savages hunt after with the greatest eagerness and cruelty. He is about three or four feet long, and weighs from forty to sixty pounds. His head, which he carries downwards, is like that of a rat, and his back raised in an arch above it, like that of a mouse.



He has webs at his hinder feet, with which he swims. The toes of his fore-feet are separate, and answer the purpose of hands; the tail, which is flat, oval, and covered with scales, he uses to carry loads, and to work with; he has four sharp incisors or cutting-teeth, which serve him instead of carpenter's tools. It is the common want of subsistence and propagation, that brings the beavers together in summer, to build their towns against winter; and this is the time for attacking them. The beaver gradually decreases, and disappears in America, since the Europeans have been in quest of its skin. The skins vary, with the climate, both in colour and quality. In the same district, however, where the colonies of civilized beavers are found, there are some that are wild and solitary, called Earth-Beavers, many of which disclaim all communication with their natural element, and live entirely on land. Their coat is dirty, and the hair on their backs is worn off, by rubbing against the cave which they dig for their habitation. These wild beavers have not such sleek hair as those that live in societies; their furs are answerable to their manners. Beavers are found in America, from the thirtieth to the sixtieth degree of north latitude. There are but few towards the south; but they increase in number, and grow darker, as we advance towards the north. In the territory of the Illinois, they are yellow and straw-coloured; higher up the country, they are of a light chesnut; to the north of Canada, of a dark chesnut; and some are found that are quite black, which are reckoned the finest. Yet in this climate, the coldest that is inhabited by this species, some among the black tribes are quite white; others, white speckled with grey; and sometimes with sandy spots on the rump. The value that is set upon them, depends upon the colour of their skins. Some of them are so little in esteem, that it is not thought worth while to kill them; but these are not commonly found. Beaver-skins are chiefly divided into three sorts; the

new, the dry, and the fat. The new beaver, also called the white or Muscovy beaver, because it is generally exported to Russia, is that caught by the Indians in North America, in their winter hunting. It is the best for making fine fur, because it has lost none of its winter-hair by shedding. The dry beaver, sometimes called lean beaver, comes from the summer-hunting, which is the time when these animals lose part of their hair. Though this sort of beaver be much inferior to the former, it may also be employed in furs, but is chiefly used in the manufacture of hats. The fat beaver, is that which has contracted a certain gross and oily humour, by the sweat exhaling from the body of the Indians, who wear it for some time. Though this sort be better than the dry beaver, yet it is used only for making hats.

When the hair has been cut off from the beavers' skins, to be used in the manufacturing of hats, those skins are still employed by several workmen; for instance, by the trunk-makers, for coverings; by the shoemakers, to put into slippers; and by turners, to make sieves for sifting grain and seeds.

Besides these smaller furs, North America supplies us with skins of the deer, the mooze-deer, and the elk; the strong, soft, and warm skins of which animals, make excellent garments, which are very light.

The DEER of North America is higher and of a slimmer make than that of Europe. Its colour is of a deep fallow.

The MOOZE-DEER is nearly about the size of the elk, and its horns almost as enormous as that animal's. Its tail is not above an inch long, and it has feet and legs like a camel. The hair of the mooze is a light grey, mixed with a blackish red. It is very elastic, for, though it be beaten ever so long, it will retain its original size. Its hide makes very good leather, being thick and strong, yet soft and pliable.

The ELK is shaped like a deer, but in bulk equal to a horse. Its hair, the colour of which is grey, and

not unlike that of a camel, but of a more reddish cast, is nearly three inches in length, and as coarse as that of a horse. Its skin will dress as well as that of a buck.

The fur-trade was the first which the Europeans carried on in Canada. It was begun by the French colony at Tadousac, a port situated thirty leagues below Quebec. About 1640, the town of Les Trois Rivières, at the distance of twenty-five leagues above the capital, became a second mart. In process of time, all the fur-trade centered in Montreal. The number of Indians who resorted to that place, increased as the name of the French spread further. Whenever they returned with a fresh supply of furs, they always brought a new nation along with them. Thus, a kind of fair was opened; to which the several tribes of that vast continent resorted. The English grew jealous of this branch of wealth; and the colony they had founded at New York, soon found means to divert the stream of this great circulation. They had infinite advantages, to give them the preference over their rivals the French; so that they soon engrossed most of the trade, that had rendered Montreal so famous.

The Hudson's Bay, is now the most considerable mart for the fur-trade. In 1670, the Hudson's Bay Company received a grant from Charles II. to carry on this trade exclusively. Throughout the whole of this extensive coast, there are only about a hundred soldiers, or factors, who live in four indifferent forts, of which York Fort is the principal. Their business is, to receive the furs, brought by the neighbouring savages, in exchange for merchandize. Though these skins be much more valuable than those found in more southern countries, yet they are cheaper. The savages give ten beaver-skins for a gun, two for a pound of powder, one for four pounds of lead, one for a hatchet, one for six knives, two for a pound of glass beads, six for a cloth coat, five for a petticoat,

one for a pound of snuff, &c. As the beaver is the common measure of exchange, two otter-skins and three martins, are required instead of one beaver.

The fur SEAL-SKIN, a species of which is caught on the coast of South Georgia, and of the islands near the Antipodes, was discovered, about the year 1796, to produce a fur nearly equal to the beaver, so as almost to supersede the use of it. This discovery has been claimed by Mr. Thomas Chapman, who has established his pretensions before a committee of the House of Commons, where it was proved to be available for the manufacture of hats, shawls, and even superfine cloths. Previous to this discovery, the fur seal-skin sold for little more than half a-crown, which is now sold from seven to thirty-two shillings *per* skin; and, in consequence of the increased value, more ships are fitted out for the southern fishery.

The skins most esteemed, are those whose fur is glossy, and as free as possible from hair or grease.

FUSTICK. (F. *Bois jaune*; G. *Gelbholz*; D. *Geelhout*, *Stockvischhout*; I. *Legno giallo*; S. *Palo amarillo*; P. *Jataiba*; DA. *Guulholt*; Sw. *Gelbholts*; POL. *Farbierskie drzewko*; R. *Sheltoe dereve*.)

Fustick is a yellow wood, that grows in all the Caribbee islands, in Brasil, and other parts. It is used in dying yellow. It makes one of the most valuable trees of the island of Jamaica; the excellence of its timber considered, as well as its use in dying. Its fruit, in size, colour, and shape, resembles the white mulberry; it is in perfection in March and April. The leaves of this shrub bear some resemblance to those of the elm-tree, but are something smaller, and more green.

Fustick is used for the dying of gold and olive colours; which, however, are not durable.

## G.

**GALANGAL.** (F. *Galanga*; G. *Galgant*; D. *Galinga*; I. *Galanga*; S. *Galanga*; P. *Galanga*; DA. *Galange*; Sw. *Gulgarot*; POL. *Galgan, Kalkan*; R. *Kalgan*; L. *Galanga*.)

Galangal is the name of two roots, a greater and a smaller; of which the smaller is by far most esteemed.

The lesser Galangal is a small and short root, of an irregular figure, and of the thickness of a man's little-finger, seldom met with more than an inch or two long. It should be chosen full and plump, of a bright colour, very firm and sound, and of an acrid and insupportably hot taste.

The larger Galangal is brought to us in pieces of two inches or more in length, and of nearly an inch in thickness, and has a much less acrid and pungent taste than the smaller kind. It is to be chosen in the largest, soundest, and heaviest pieces.

The lesser Galangal is esteemed an excellent stomachic, cephalic, cardiac, and uterine. The greater Galangal possesses the same virtues, but in a less degree.

**GALLS, Gall-Nuts.** (F. *Galles, Noix de Galles*; G. *Gallüpfel*; D. *Galnooten*; I. *Galle, Galluzze*; S. *Agallas*; P. *Galhas, Bugathos*; DA. *Galdæbler*; Sw. *Galläpplen*; POL. *Galas*; R. *Tschernilnue oreschki*; L. *Gallæ*.)

Gall, in natural history, denotes any protuberance, or tumour, produced by the puncture of insects, on plants and trees of different kinds. These galls are of various forms and sizes, and no less different with regard to their internal structure. Some of them are as hard as the wood of the tree they grow upon, whilst others are soft and spongy; the first being

termed gall-nuts, and the latter berry-galls, or apple-galls.

The general history of the gall is this. An insect of the fly-kind, is instructed by nature to take care for the safety of her young, by lodging her eggs in a woody substance, where they will be defended from all injuries: she for this purpose wounds the leaves or tender branches of the tree; and the lacerated vessels, discharging their contents, soon form tumours about the holes thus made. The external coat of this excrescence is dried by the air, and grows into a figure which bears some resemblance to the bow of an arch, or the roundness of a kernel. This little ball receives its nutriment, growth, and vegetation, as the other parts of the tree; and is what we call the gall-nut. The worm hatched under this vault, draws its subsistence from the gall, till it becomes a nymph; from which state of existence it changes into a fly, and then disengages itself from its confinement.

Oak-galls, put, in a very small quantity, into a solution of vitriol in water, though but a very weak one, give it a purple or violet colour: which, as it grows stronger, becomes black; and on this property depends the art of making our writing-ink, as also the art of dying, dressing leather, and other manufactures.

The best oak-galls come from Aleppo; these are neither quite round nor smooth like the other sorts, but have several tubercles on the surface. Galls have an austere, styptic taste, without any smell: they are very strong astringents, and, as such, have been sometimes made use of, both internally and externally.

**GAMBOGE.** (F. *Gomme gutte*; G. *Gummigutt*; D. *Gutte gom*, *Gutta gamba*, *Gitte gom*; I. *Gomma gutta*; S. *Gommaguta*, *Guta gamba*; P. *Goma rom*, *Goma guta*, *Gutta gamba*; POL. *Gummi gotta*;

R. *Gummi gut*; L. *Gummi gutta*, *Gutta gamba*, *Cambogia*.)

Gamboge is a concreted vegetable juice, partly of a gummy, and partly of a resinous nature; obtained from the cambogia gutta, a tree which is a native of India. It is chiefly brought to us in large cakes or rolls from Cambaja, in the East Indies. The best sort is of a deep yellow or orange colour, breaks shining, and free from dross: it has no smell, and very little taste, unless kept in the mouth for some time, when it impresses a slight sense of acrimony.

As a pigment, it makes a beautiful yellow water-colour, and is chiefly used for maps. Dr. Lewis says, that it makes a beautiful and durable citron yellow stain upon marble, whether rubbed in substance on the hot stone, or applied, as dragon's blood sometimes is, in form of a spirituous tincture. When it is applied on cold marble, the stone is afterwards to be heated, to make the colour penetrate.

As a medicine, gamboge evacuates powerfully both upwards and downwards.

GENEVA, *Gin.* (F. *Genève*; G. *Genever*; D. *Genever*.)

There was formerly sold in the apothecaries' shops, a distilled spirituous water of juniper; but the vulgar being fond of it as a dram, the distillers supplanted the apothecaries, and sold it under the name of Geneva.

The common kind, however, is not made from juniper berries, but from oil of turpentine. Two ounces of oil of turpentine, and three handfuls of bay-salt, are mixed with ten gallons of ordinary malt spirits, and drawn off by a gentle fire. To make the best kind, the distillers take three pounds of juniper berries, ten gallons of proof-spirit, and four gallons of water, and draw it off by a gentle fire.

The best geneva, called Hollands geneva, is imported from Holland, and is chiefly manufactured at

Schiedam, a village near Rotterdam. It is supposed they use the same ingredients as prescribed in the last-mentioned recipe; only, instead of malt spirits, they use French brandies.

They have also manufactories of geneva, at Ostend, Antwerp, and other parts of Flanders and Brabant; but the geneva of these countries is greatly inferior to that coming from Rotterdam, and worth nearly one-third less in this market.

The geneva most in estimation, is that which is of a pale colour, and bears the nearest resemblance to water.

**GENTIAN.** (F. *Gentiane*; G. *Enzian*, *Gentian*; D. *Gentiaan*; I. *Genziana*; S. *Jenciana*; P. *Genziana*; DA. *Entian*, *Södrod*; SW. *Bagsöta*; POL. *Goryczka*; R. *Enzian*; L. *Gentiana*.)

The gentiana lutea, or common gentian of the shops, is a plant that affects most places, but more commonly found in Burgundy, the Alps, Pyreneans, and the mountainous districts of Germany: and the roots, the only part used in medicine, are generally brought to England from the latter country.

They are of a yellowish brown colour, and a very bitter taste, sometimes as thick as the arm, but more commonly divided into branches, no bigger than the thumb of a man. They should be chosen dry, new, of a moderate thickness, and free from earth. That which is dried by the air, ought to be held as far preferable to that dried in the oven; and the two sorts are easily distinguished by the colour; the former being of a golden yellow within, and the latter somewhat blackish.

This root stands at the head of the stomachic biters. Infusions of gentian, flavoured with orange-peel, are sufficiently grateful.

**GINGER.** (F. *Gingembre*; G. *Ingwer*, *Ingber*; D. *Gember*; I. *Zenzero*, *Zenzovero*, *Zinzibo*, *Gen-*



*giovo*; S. *Jenjibre, Agengibre*; P. *Gengibre*; D.A. *Ingesaer*; Sw. *Ingefara*; Pol. *Imbier*; R. *Jubir*; L. *Amomum zingiber.*)

Ginger is the dried root of the *amomum zingiber*, or ginger-plant, which is a native of the East, but also of the West India islands. The Indians who were found by the Europeans in the American islands, most generally made use of it; but their consumption in this, as in every other article, was so small, that nature afforded them a sufficient quantity, without the assistance of cultivation. The usurpers grew passionately fond of this spice: they ate it in the morning to sharpen their appetite; they served it up at table, preserved in different ways; they used it after meals to facilitate digestion, and at sea as an antidote against the scurvy. The old world adopted the taste of the new, and this lasted, till the price of pepper, which had for a long time been extremely high, was reduced. Ginger then fell into a kind of contempt, and its culture was dropped almost everywhere, except at Jamaica and Barbadoes.

When the roots of the ginger-plant are jointed and spread in the ground, they put out many green, red-like stalks in the spring, which arise to the height of two feet and a half, with narrow leaves. The flower-stems are naked, ending with an oblong scaly spike. From each of these scales is produced a single blue flower. It attains its full height, and flowers about August or September, and fades about the close of the year. When the stalk is entirely withered, the roots are in the state proper for digging. This is generally performed in the months of January and February. After being dug, they are picked, cleansed, and gradually seethed or scalded in boiling water; they are then spread out, and exposed every day to the sun, till sufficiently dry, when they are packed in bags for the market: this is called black ginger. The manner of scalding the roots is as follows: a large pot or copper is fixed in the field, or some convenient

place, and kept full of boiling water; the picked ginger, being divided into small parcels, is laid in baskets, and plunged alternately in the water, where it is suffered to stay for a space of ten or fifteen minutes; it is then spread on a platform for drying; but care is taken during the process, to change the water, as soon as it becomes much impregnated with the juices of the root.

White ginger differs but little from the black sort; the difference arising wholly from the methods of curing. The white ginger is never scalded, but, instead of this easy process, the roots are picked, scraped, and washed, one at a time, and then dried; all which requiring much pains and time, and being made more agreeable to the eye, the price of the white is much higher at market, though not superior in its properties to the black.

When the root is intended for a sugar-preserve, it is dug while tender, and full of juice; the stems at this time rarely exceed five or six inches in height; the root is carefully picked and washed, and afterwards scalded, till sufficiently tender: it is then put into cold water, and peeled and scraped gradually. This operation may last three or four days, during which it is commonly kept in water, and the water frequently shifted, as well for cleanliness, as to extract more of the native acrimony. After this preparation, it is laid in unglazed jars, and covered with a thin syrup, which in two or three days is shifted, and a richer put on, which is sometimes again removed for a third.

In the year 1738, Jamaica exported 20,933 bags, and 817 casks of ginger, which is the greatest quantity ever shipped from it in one year. At present, the export is very small, the consumption of this article having very materially decreased, in Great Britain as well as in the foreign markets, to which it used to be re-exported.

**GINSENG.** (F. *Ginseng* ; G. *Kraftwurzel*, *Ginseng* ; D. *Ginseng*, *Ginsem* ; I. *Ginseng* ; S. *Jin-seng* ; P. *Ginsao* ; D $\Delta$ . *Ginseng* ; Sw., *Ginseng* ; L. *Ginseng*, *Panax*.)

Ginseng is the root of a plant, growing upon the confines of Tartary and China, near the great wall; it is also found in Virginia, Pennsylvania, Louisiana, and Canada. It is like a small carrot, but not so taper at the end; sometimes single, sometimes divided into two branches. It has then some resemblance to the inferior parts of man, whence it has acquired the name of *ginseng* in China, and that of *garrentoguen* among the Iroquois. The taste of the root is bitterish.

Its stem, which is renewed every year, leaves as it falls off, an impression upon the neck of the root; so that the number of these impressions indicate the age of the plant; and its value increases, in proportion to the age.

The ginseng root, is generally allowed to be a strengthener of the stomach, and a purifier of the blood. Its transparency is given to it, nearly by the same process which the orientalist employ for the salop. This prepared ginseng is in such high estimation among the Chinese, that they never find it too dear.

The government sends out ten thousand Tartar soldiers every year, to gather this plant; and every one is obliged to bring home two ounces of the best ginseng gratis, and for the rest they are paid its weight in silver.

**GLAUBER'S SALT.** (L. *Sal mirabile Glauberi*.)

Is a neutral salt, which will be produced when the vitriolic acid is saturated with the salt of soda. It dissolves easily in water, and shoots into long and beautiful crystals, which contain a large quantity of water; in consequence of which, they undergo the aqueous fusion, when exposed to heat. This kind of

salt was, some years since, universally recommended as a purgative, and from its manifold virtues, was intitled by its inventor *sal mirabile*; but of late its use has much decreased in many places.

GLUE. (F. *Colle forte*; G. *Leim*; D. *Lym*; I. *Colla*; S. *Cola*; P. *Cola, Colla, Grude*; D<sup>A</sup>. *Lim, Liim*; Sw. *Lim*; POL. *Kley*; R. *Klei*; L. *Gluten, Colla*.)

Glue is a tenacious viscid matter, which serves as a cement, to bind or connect things together.

The common or strong glue, is chiefly used by carpenters, joiners, cabinet-makers, &c. It is made of skins of animals, as oxen, cows, calves, sheep, &c.; and the older the creature is, the better is the glue made of its hide. Indeed, whole skins are rarely used for this purpose, but only the shavings, parings, or scraps of them, or the feet, sinews, &c. That made of whole skins, however, is undoubtedly the best; as that made of sinews is the very worst.

In making glue of parings, they first keep them two or three days in water: then, washing them well out, they boil them to the consistence of a thick jelly; which they pass, while hot, through ozier baskets, to separate the impurities from it; and then let it stand some time, to purify it further. When all the filth and ordures are settled to the bottom of the vessel, they melt and boil it a second time. They next pour it into flat frames or moulds, whence it is taken out pretty hard and solid, and cut into square pieces or cakes. They afterwards dry it in the wind, in a sort of coarse net; and at last string it, to finish its drying.

Glue is considerably improved in quality, by keeping after it is made; and it is of prime quality, if it swell considerably without melting, when steeped for three or four days, and then resumes its former dryness, when taken out of the water.

Of this commodity there is a very large exporta-

tion from England: the English glue being universally allowed to be the best in Europe; partly from the excellency of the materials, and partly from the skill of the manufacturers. Next to this is the Flanders glue. In both countries it is made by the tanners. In France it is a separate trade, and the glue generally of an inferior quality.

**GOATS' HAIR.** (F. *Poil de Chèvre*; G. *Ziegen-haar*; I. *Pelo di Capra*; S. *Pelote*; P. *Pelo de Capra*.)

In Anatolia, the capital of which is Angora, they breed the finest goats in the world; and their hair, which is of a dazzling white, is almost as fine as silk, and nine inches in length. The mohair yarn is made of it, and it is worked into very fine stuffs, particularly camblets.

This hair is imported into England, from Smyrna and Aleppo.

**GOATS' SKINS**; see **SKINS**.

**GOLD.** (F. *Or*; G. *Gold*; D. *Goud*; I. *Oro*; S. *Oro*; P. *Ouro*; D. *Guld*; Sw. *Guld*; Pol. *Złoto*; R. *Soloto*; L. *Aurum*.)

Gold is the most valuable, perfect, and indestructible of all metals; when pure, it is of a bright yellow colour. Platina excepted, it is also the heaviest of all known bodies, its gravity being to that of water, as 19,280 and 19,290 to one. Gold is unalterable by air or water. It never contracts rust, like other metals. The action of the fiercest furnace-fires occasions no alteration in it. Kunckel kept gold in a glass-house furnace for a month, without the loss of a single grain. Its ductility can be brought to such a degree, that, according to Cronstedt, one grain of it may be stretched out, so as to cover ninety-eight Swedish ells, equal to 63.66 English yards of silver wire. But Gallerius asserts, that a grain of gold may

be stretched in such a manner, as to cover five hundred ells of wire. Its malleability is not inferior to its ductility. Magellan tells us, that its surface may be extended by the hammer 159,092 times.

Europe is principally supplied with gold from Chili and Peru in South-America. A smaller quantity is likewise imported from China, the island of Sumatra, and the coast of Africa. The principal gold-mines of Europe are those of Hungary, and, next to them, the mines of Saltzburg.

The value of gold to that of silver, varies, as gold is more or less plentiful. It was antiently as twelve to one; and, in the times of Cæsar, as seven and a half to one, on account of the quantity of gold he brought to Rome.

Glauber, an eminent chemist, says, that there is not any sand or stone, but gold may be procured from, lime-stone only excepted: the misfortune is, that the expense of separating it much surmounts the profits.

Gold is chiefly found in mines; though there is some also found in the sand of rivers, which is in form of a dust, and called gold-dust. It is distinguished by the variously coloured substances wherewith it is mixed; but it is also found separate from any matrix. It is particularly dispersed through such masses of sand as are of a yellowish red, or violet colour; and in this state it is so universally diffused through every kind of earth, that Bergman thinks it the most common of all the metals, iron alone excepted. If one hundred pounds of sand contain twenty-four grains of gold, the separation is said to be worth attending to. In Africa, five pounds of sand often yield sixty-three grains of gold, or even more; and the heaviest sand, which is often black or red, contains the most. Gold is brought down with most of the large rivers, even those which do not take their rise in mountains where gold is found.

Gold is soluble by aqua regia, being a composition

of the nitrous and marine acids. This solution is corrosive. It gives a violet colour to the fingers, or any animal matter. If the solution be evaporated and cooled, yellow transparent crystals will be formed; but if the evaporation be carried too far, the acids with which the gold is combined, may be driven from it by heat alone, and the gold will be left in the state of a yellow powder, called calx of gold. All the metallic bodies which dissolve in aqua regia, precipitate gold from it. Mercury and copper throw down the gold in its bright metallic form; the other, in that of calx or powder. Vitriol of iron, though it precipitate gold, yet has no effect upon any other metal; hence it affords an easy method of separating gold from all other metals.

GRAIN; see CORN.

GRAINS OF PARADISE, *Grains of Guinea*. (F. *Graines de Paradis*, *Maniguette*, *Maniquette*, *Malaguette*; G. *Paradieskörner*; D. *Guinees grein*; I. *Meleghetta*; S. *Malagueta*, *grana del paraíso*; P. *Malaguetta de Guiné*, *Graa do paraizo*; DA. *Paradiskorn*; Sw. *Paradiskorn*; R. *Raiskie ziarnka*; L. *Amomum grana paradisi*.)

Ginger, cardamoms, and Grains of Paradise, are produced only by different species of the same genus of plants.

The grain of Paradise species, is a native of the East Indies, but grows also on the coast of Guinea. The fruit containing the grains, is about the size of a fig, divided into three cells, in each of which are contained two roots of small seeds, of a reddish brown colour without, and white within, like cardamoms, only larger. They are somewhat more grateful, and considerably more pungent than cardamoms.

GRANATES, *Garnets*. (F. *Grenats*; G. *Granaten*; D. *Granaaten*; I. *Granati*; S. *Granadas*; P. *Granadas, Granates*; DA. *Granater*; Sw. *Granater*; POL. *Granatki*; R. *Granatnoi-kamen*; L. *Granati*.)

The granate is a genus of fossils, ranked among the siliceous earths; but, according to Magellan, analogous to gems. The two principal species are, the coarse-grained and the crystallized garnet.

The coarse-grained garnet, is a heavy hard stone, crystallizing in form of polygonal balls, mostly of a red and reddish brown colour. It is found of a reddish brown, and whitish or pale yellow, in different parts of Sweden.

The crystallized garnet is reckoned among the precious-stones; but varying in colour, and the form of its crystals, more than any of them. Sometimes it is of a deep and dark red colour; sometimes yellowish and purplish; sometimes brown, black, or opaque. It is inferior both in lustre and hardness to the other gems. When pure, and free from blemishes, it is little inferior in appearance to the Oriental ruby, though only of a middling degree of hardness, between the sapphire and common crystal. It is found of various sizes, from that of a pin's head to an inch in diameter.

The most esteemed is the Syrian garnet, which is of a fine red, inclining to purple, very transparent, but less beautiful than the Oriental amethyst.

Sometimes the garnets have a yellow colour; in which case they obtain the name of hyacinths. Like other gems, they are divided into Oriental and Occidental; though this means, in fact, nothing else but more or less valuable; the finest stones being always called Oriental, wherever they come from. Some very fine ones are found in Bohemia; they are also met with in Hungary, at Pyrna in Silesia, S. Sapho in the Canton of Bern, in Spain, and in Norway.



**GRANITE.** (F. *Granit*; G. *Granit*; D. *Granitsteen*; I. *Granito*; S. *Granites*; P. *Granites*; DA. *Granitsteen*; Sw. *Granit*; *Grasten*; L. *Granita*.)

The granite is a stone of great hardness, giving fire with steel, not fermenting with acids, and slowly and imperfectly calcinable in a great fire.

There are three species of granite: 1. The hard white granite, with black spots, commonly called Moor-stone; this is a very valuable kind, consisting of a beautiful congeries of very variously constructed coloured particles. It is much used for the steps of public buildings, and on other occasions, where great strength and hardness are required. 2. The hard red granite, variegated with black and white, and found in immense quantities in Arabia, and particularly in Egypt, along the coast of the Red-Sea. 3. The pale whitish granite, variegated with black and yellow.

**GREEN VITRIOL**; see **COPPERAS**.

**GUAJAC WOOD**; see **LIGNUM VITÆ**.

**GUINEA PEPPER.** (L. *Capsicum*.)

This genus of plants has various species, of which the capsicum tetragonum, commonly called *bell-pepper*, produces fruit fit for pickling. The pods are from an inch, to an inch and a half, and two inches long; very large, swelling, and wrinkled. They must be gathered before they arrive at their full size, while their rind is tender. To get out the seeds, they must be slit down on one side; after which, they should be soaked two or three days in salt water, then taken out, drained, boiling vinegar poured on them, and closely stopped down for two months. Then, to make them green, they should be boiled in the vinegar. They are the wholesomest, and best

pickle in the world, and require no addition of any spice.

The *capsicum frutescens*, commonly called *Barbary pepper*, is used for making *cayan butter*, *cayenne pepper*, or *pepper-pots*, chiefly used by the inhabitants of America, and esteemed by them as the best spice. The following is a recipe for making pepper-pot. Take the ripe seeds of this sort of capsicum, and dry them well in the sun; then put them into an earthen or stone pot, mixing flour between every stratum of pods, and put them into an oven, after the baking of bread, that they may be thoroughly dried; after which, they must be well cleansed from the flour, and reduced to a fine powder: to every ounce of this, add a pound of wheat flour, and as much leaven as is sufficient for the quantity intended. After this has been properly mixed and wrought, it should be made into small cakes and baked, then cut into small parts, and baked again, that they may be as hard and dry as biscuits; which, being powdered and sifted, is to be kept for use. This spice is prodigiously hot and acrimonious, setting the mouth as it were on fire.

GUM. (F. *Gomme*; G. *Gummi*; D. *Gom*, *Gomme*; I. *Gomma*; S. *Goma*; P. *Gomma*, *Goma*; DA. *Gummi*; Sw. *Gummi*; POL. *Gummi*; R. *Gummi*; L. *Gummi*.)

Gum is a concreted vegetable juice, which transudes through the bark of certain trees, and hardens upon the surface. The chemists allow only those to be properly gums, which are dissolvable in water; those which dissolve only in spirits, they call resins; and those of a middle nature, gum-resins.

GUM-AMMONIAC, is a concrete resinous substance, usually in large masses, composed of little lumps or tears of a milky colour, but, on being exposed to the air, soon changes to a yellow hue.

We have no certain account of the plant which produces this juice; but the seeds usually found among the tears, resemble those of the umbelliferous class. It has been alleged, that it is an exudation of a species of the ferula, growing in Nubia, Abyssinia, and the interior parts of Egypt: another species of which produces the assafœtida. It is brought to Great Britain from the Red Sea, by some of the ships belonging to the East-India Company, trading to those parts.

Gum-Ammoniac has a nauseous sweet taste, followed by a bitter one, and a smell somewhat like that of galbanum. It is in some measure soluble in water and vinegar, with which it assumes the appearance of milk; but the resinous part, amounting to about one half, subsides on standing. In medicine it is used as a deobstruent.

GUM ANIME, is a kind of gum-resin, distinguished by the names of Oriental and Occidental.

The *Oriental*, or Ethiopian gum-anime, is brought to us in large, dry, and solid masses of irregular figure, and very uncertain colour; some greenish, some reddish, some brown, and some of the colour of myrrh, but all moderately pellucid, of a tolerably compact texture, light and easily powdered, of a fragrant smell, very inflammable, and of a resinous and somewhat bitter taste. This is the true gum-anime, and now very rare.

The *Occidental* gum-anime, which now is universally sold instead of the Oriental sort, is of a fine yellow whitish, or red colour, between frankincense and mastich; and, in the purest pieces, transparent. It is moderately heavy, friable, and somewhat oleaginous to the touch; extremely fragrant, especially when burnt, and of resinous acrid and somewhat bitterish taste. It is brought to us from many parts of America, particularly New Spain and the Brasils.

The Occidental gum exudes between the principal roots of the hymenæa, or locust-tree, and makes the

finest varnish that is known, superior even to the Chinese lacca. It is likewise used as an article of the materia medica. It is not certain, whether the Ethiopian Gum-anime comes from the same tree.

GUM ARABIC, is the name of a gum, which distils from a species of acacia, called *Mimosa Nilotica*, growing in Arabia and Egypt. It is very common among us, but little is to be met with genuine. That is accounted the best, which is in largish white globular pieces, and almost of a white colour.

This gum is gathered in vast quantities from the trees growing in Upper Egypt, and in Arabia Petraea, near the north bay of the Red Sea, and at the foot of Mount Sinai, whence they bring the *gum Thus* or *frankincense*, so called from Thur or Thor, a harbour in the north bay of the Red Sea, near Mount Sinai; thereby distinguishing it from the gum-arabic, which is brought from Suez, another port of the Red Sea, not far from Cairo. These two gums, though coming from the same tree, are different, in so far as the gum Thus is more pellucid, white, or of no colour at all; the gum-arabic is less pellucid, and more of a brown or dirty yellow colour.

Some inferior gum-arabic is also brought from the East Indies.

As an example of the nutritive quality of gum-arabic, the following instance may serve. The Abyssinian caravans, on their journey to Cairo, in which they travel over terrible deserts, so that their progress is as uncertain, and depends as much on the weather, as a voyage at sea; having, in 1750, consumed their provisions, when they had still two months to travel, were obliged to search for something among their merchandize, wherewith to support life in their distress. In this extremity, they had recourse to gum-arabic; upon which, above one thousand persons lived for two months, and the caravan arrived safe at Cairo, without any great loss of people.

Gum-arabic is one of the most considerable articles

of commerce that pass through Egypt. Every year, in the month of October, two or three small caravans of the Arabs, from the neighbourhood of Par and Mount Sinai, arrive with about 70,000 pound weight of the gum. Those Arabs are very much in the way of debasing their goods, with an intermixture of extraneous matters. Many caravans arrive from different parts of Africa in the months of June and July, with three different sorts of this same gum. A quantity comes also from Habbesch, by the way of Djidda and Suez, which, though inferior in quality, passes all into Europe, where annually 500,000 pounds weight of this article are imported.

GUM BENJAMIN, or BENZOIN, is a brittle, brownish gum-resin, of an exceedingly fragrant smell; it is obtained from the styrax benzoin, a tree which is a native of the East Indies, particularly of Siam and Sumatra. At the age of six years, or when its trunk acquires about seven or eight inches in diameter, it is deemed sufficient for affording the benzoin. The bark is then cut through longitudinally, or somewhat obliquely, at the origin of the principal lower branches, from which the drug exudes in a liquid state, and by exposure to the sun and air soon concretes; when it is scraped off from the bark with a knife or chissel. The quantity of benzoin which one tree affords, never exceeds three pounds, nor are the trees found to sustain the effects of these annual incisions, longer than ten or twelve years. The benjoin which issues first from the wounded bark is the purest; being soft, extremely fragrant, and very white; that which is less esteemed, is of a brownish colour, very hard, and mixed with various impurities. In Arabia, Persia, and other parts of the East, the coarser kinds of Benjamin are consumed for fumigating and perfuming the temples, and for destroying insects.

The benzoin commonly brought to us, is in large brittle masses, composed partly of white, partly of yellowish or light brown.

This resin has very little taste, impressing on the palate only a slight sweetness; its smell, especially when rubbed or heated, is extremely fragrant and agreeable. Its principal use is in perfumes, and as a cosmetic; and it approaches much in virtue and fragrance to storax and balsam of Tolu.

**GUM COPAL**, is a gum of the resinous kind, brought from New Spain; being the concrete juice of a tree, called rhus copallinum, which grows in these parts. It comes to us in irregular masses, some of which are transparent, and of different shades as to colour, from a light yellow to a deep brown. Some pieces are whitish and semi-transparent. To the smell, it is more agreeable than frankincense, but has not, in water, the solubility common to gums; so that it is improperly called gum. It chiefly serves for making a beautiful transparent varnish, when dissolved in linseed oil, and the solution diluted with spirit of turpentine.

*Gum-elastic; see India-rubber.*

**GUM GALBANUM**, is a gum issuing from the stem of an umbelliferous plant, growing in Persia and many parts of Africa.

The juice, as brought to us, is semipellucid, soft, and tenaceous, of a strong, and to some, unpleasant smell, and a bitterish warm taste. The better sort is in pale coloured masses, which, on being opened, appear composed of clear white tears.

Galbanum agrees in virtue with gum ammoniacum, but is generally accounted less efficacious in asthmas, and more so in hysterical complaints. It is an ingredient in several officinal compositions.

*Gum Gamboge; see Gamboge.*

**GUM GUAJACUM**, **POCKWOOD GUM**, improperly called a gum, is a solid, but very friable resin, much resembling common resin, except that it is of a dusky greenish hue, and sometimes of a reddish colour. It is very acrid and pungent to the taste, and, when burnt, of a fragrant smell. It is procured from the

guajacum, or lignum-vitæ tree, by jagging the body of the tree in May. It exudes copiously from the wounds, though gradually; and when a quantity is found accumulated upon the several wounded trees, hardened by exposure to the air and sun, it is gathered and packed up for exportation. This gum has been suspected, sometimes, to have been sophisticated by the negroes, with the gum of the manchineal tree, to which it bears some similitude; but it is easily distinguished, by dissolving a little in spirit of wine, or rum. The true gum imparts a whitish or milky tinge; but the manchineal gives a greenish cast: and this is still further distinguishable, by pouring a little of the same tincture into fair water, which takes from the guajacum, almost immediately, the complexion of milk.

This gum is in demand for its virtues in venereal taints, rheumatisms, &c.

*Gum Lac*; see *Lac*.

*Gum Mastich*; see *Mastich*.

*Gum Myrrh*; see *Myrrh*.

*Gum Olibanum*; see *Frankincense*.

GUM OPOPANAX, is a gum-resin, of a tolerably firm texture, usually brought to us in granules or drops, and sometimes in large masses, formed by a number of these, connected by a quantity of substance of the same kind; but these are usually loaded with extraneous matter, and greatly inferior to the pure loose kind. The drops or granules of the fine opopanax, are on the outside of a brownish red colour, and of a dusky yellowish or whitish colour within: they are of a somewhat unctuous appearance, smooth on the surface, and are to be chosen in clear pieces, and of a strong smell and acrid taste.

This gum is obtained from the pastanaca opopanax, a plant which grows spontaneously in the warmer countries, and bears the cold of this. It is obtained by means of incisions made at the bottom of the stalk of the plant, whence the juice gradu-

ally exudes; and, by undergoing spontaneous concretion, assumes the appearance under which we have it imported from Turkey and the East Indies. Its virtues are those of an attenuating and aperient medicine.

**GUM SAGAPENUM.** (D. D. A. Sw. *Sagapen*; F. *Gomme Segápin*; P. *Sagapine*.) A concrete juice brought from Alexandria, either in distinct drops or run together in large masses. It is outwardly of a yellowish appearance, internally somewhat paler, and clear like an herb, grows soft on being handled, and sticks to the fingers: its taste is hot and biting, and the smell disagreeable: this gum is of considerable use in pharmacy.

**GUM SANDARAC**, is a dry and hard resin, usually met with in loose granules, of the bigness of a pea, a horse-bean, or larger; of a pale whitish yellow, transparent, and of a resinous smell; brittle, very inflammable, of an acrid and aromatic taste, and diffusing a very pleasant smell when burning. It is produced from a species of the juniper, and the *cedrus baccifera*. It flows spontaneously from these trees in hot countries; but the natives promote its discharge, by making incisions in the bark.

What is obtained from the cedar is more fragrant, especially when burnt; but it is seldom to be met with separate, both being mixed together under the common name of Sandarac.

Sandarac is used in medicine. A powder, called pounce, is also made of it; and, dissolved in oil of turpentine or linseed, or in spirit of wine, it is used as a varnish.

**GUM SENEGAL**, is a gum extremely resembling gum arabic. It is brought to us from Egypt, and from the country through which the river Senegal runs, in loose or single drops, but these are usually much larger than those of the gum-arabic: sometimes it is of the bigness of an egg, and sometimes much larger; the surface is very rough and wrinkled, and appears



much less bright than the inner substance, where the masses are broken. It has no smell, and scarcely any taste. It is probably produced from a tree called by Dale, *mimosa senegal*.

The virtues of it are the same with those of the gum-arabic; but it is rarely used in medicine, unless mixed with the latter: the dyers and other artificers consume the great quantities of it that are annually imported hither. The negroes dissolve it in milk, and in that state make it a principal ingredient in many of their dishes, and often feed on it thus alone.

*Gum Thus*; see *Gum Arabic*.

**GUM-TRAGACANTH, or GUM-DRAGON.** The tragacanth-plant grows in the East Indies; it has a thick short ligneous stalk, greatly branched out on every side. The young branches are woolly, and closely garnished with winged leaves, the foot-stalks of which terminate in acute thorns. The roots creep over the surface of the ground, and, when wounded, yield a gum, which is called tragacanth. The best sort ought to be clear and sweet; the inferior sorts have a reddish cast.

Gum-tragacanth possesses all the virtues of gum-arabic, and in a higher degree.

**GUM HEDER.** (*G. Ephubarz*; *D. Vielkars*; *DA. Vandelscharf*; *F. Vesin hedere ou de la Lienne*; *I. Gomme cedera*; *SP. Gomme Yedra*; *F. Gomme dera*.) This gum exudes from the ivy-tree, whence it is collected by the peasants in Languedoc, Italy, and Provence. When genuine, this gum is of a bright transparent colour, deeper than hyacinth, and approaching to garnett; when reduced to powder it is of a saffron yellow, and its taste and smell are agreeably aromatic: the gum is of a caustic nature, and is therefore employed as a depilatory.

## H.

**HAIR.** Those small fine threads, that grow out of the skin of human beings, and most four-legged animals, are called hair; but upon the latter, they frequently bear the denomination of shag and wool.

**HUMAN HAIR;** (F. *Cheveux*; G. *Haare*, *Menschenhaar*; D. *Hair*; I. *Capelli umani*; S. *Cabellos*; P. *Cabellos*; DA. *Haar*; Sw. *Har*; POL. *Wlosy*; R. *Wolossü*; L. *Capelli*.)

Human hair, makes a considerable article of commerce, the goodness of which consists in its being neither too coarse, nor too slender. Flaxen hair is particularly valuable. The scarceness of white hair, has put the dealers in that commodity upon a method of reducing other colours thereto; which is done by spreading the hair to bleach on grass, like linen; and afterwards washing it out in lixivious water; which ley, with the force of the sun and air, brings the hair to so perfect a whiteness, that the most experienced person may be deceived therein. There is also a method of dying hair with bismuth, which renders such white hair as borders too much upon the yellow, of a bright silver colour.

Hair which does not curl or buckle naturally, is made to do so, by first boiling and then baking it.

The hair of the growth of the northern countries, is valued much beyond that of the more southern ones: as Italy, Spain, and the South of France; the latter being generally of a darker colour than the former.

Great quantities of hair are imported in Great Britain, from France, Spain, Germany, and South America.

There are many frauds in the hair-trade, human

hair being frequently adulterated with the hair of camels, goats, and horses.

HAIR OF ANIMALS; F. *Poil*; G. *Haare von Thieren*; D. *Hair*; I. *Pelo*; S. *Pelo*; P. *Pello*; DA. *Haar*; Sw. *Har*; R. *Scherst*.

The hair of several animals also make an article of commerce; as horse, cow, and ox, buffalo, camel, goats, elks, deer, beaver, hare, coney, &c. Hair used by upholsterers, ropemakers, saddlers, bricklayers, plasterers, hatters, &c. The hair of cattle, left to putrify on cornlands, proves a good manure. See *Furs, Hides, Skins, Goutshair, Mohair*.

Camel-hair comes from several parts of Asia and Africa, and is fit, when spun, for the making of stuffs, or mixed with other hair, for making of hats, and particularly for pencils in painting.

HELLEBORE. (F. *Hellebore*; G. *Nieswurz*; D. *Nieswortel*; I. *Elleboro*; S. *Vedegambre*; P. *Helleboro*; DA. *Nyserod*; Sw. *Prustrot*; POL. *Ciemierzyca*; R. *Tschemeriza*; L. *Helleborus*.)

There are two sorts of hellebore, the black and white. Black hellebore, called in England, Christmas rose, has a dark-coloured root, furnished with abundance of little fibres; its stem green, its leaves dented, and its flowers of a carnation hue. White hellebore, called in England, neesewort, has a whitish root, beset with fibres of the same colour; its leaves being broad, at first green, and afterwards of a yellowish red. From the middle of the leaves rises a stem two or three feet high, which separates into branches, bearing a considerable number of small flowers, like stars.

In each kind, the roots only are used, which are to be chosen large and fair, furnished with big filaments: those of the white, tan-coloured without, and white within; and those of the black, blackish without, and brownish within; dry, clean, and of a sharp disagreeable taste.

They act as purgatives ; but so violently, that they are now only retained for the farcy in horses, and for the scab in sheep : but the chief use of white hellebore, is in form of a sternuatory powder.

HEMP. (F. *Chanvre* ; G. *Hanf* ; D. *Hennip*, *Kennip* ; I. *Canape* ; S. *Canamo* ; P. *Canhamo* ; DA. *Hamp* ; Sw. *Hampa* ; POL. *Konop* ; R. *Konapli*, *Konopel* : L. *Cannabis*.)

The *cannabis sativa*, or hemp plant, is cultivated on account of its external filaments, which constitute the hemp, used for cordage, canvass, cloth, &c. and the seeds abound with oil.

This plant is annual ; it rises quick, into a tall, slender sort of shrub ; its leaves, growing by fives or sixes from the same pedicle, are a littled jagged, and yield a strong smell, which affects the head.

The culture and management of hemp, makes a considerable article in agriculture, requiring divers operations, as pulling, watering, beating, and swingling. It is sown in May, in a warm, sandy, rich soil ; and is of itself sufficient to destroy weeds, on any ground.

The first season for pulling hemp is usually about the middle of August, when they begin to pull the male plants, called *finble hemp*. But the safer method is to pull it a fortnight or three weeks later, when the male plants have fully shed their farina or dust, without which the seeds will prove only empty husks. At the second pulling, a little after Michaelmas, the female plants, called *karle hemp*, are taken out of the ground. This *karle hemp* is laid in the sun to dry, and then housed, for the seed to be thrashed out. The female hemp alone produces seed, to perpetuate the kind.

The operations of harling, watering, breaking, swingling, and heckling hemp, are very much like those practised in the dressing of flax.

The hemp imported in this country, chiefly comes

from Russia. Amongst it, the Riga hemp deserves the preference, which according to the quality, is divided in rhyne, outshot, pass, and codilla hemp. Next follows the importation from St. Petersburg, consisting of clean, outshof, half-clean, and codilla. There is also an inferior kind of hemp coming from Konigsberg, and divided in rhyne and schoken hemp. The Italian, known in this country by the name of Bologna hemp, is of very prime quality, but comes too dear for the consumption of the northern parts of Europe.

The best hemp should be clean, soft, tender, of long staple, and a sound palish yellow colour, neither green nor red.

**HERRINGS.** (F. *Harengs*; G. *Heringe*; D. *Haringen*; I. *Aringhe*; S. *Arenques*; P. *Arénques*; DA. *Sild*; SW. *Sill*; POL. *Sledzie*; R. *Seldi*.)

The clupea harengus, or common herring, has the upper jaw furnished with a serrated mystache, and it is shorter than the under jaw; the branchiostege membrane has eight rays; a scaly serrated line runs along the belly, from the head to the tail. The name of herring, comes from the German heer, "an army," to express their numbers.

The meat of the herring is every where in great esteem, being fat, soft, and delicate, especially if it is dressed as soon as caught; for then it is incomparably better than on the next day.

Herrings are found from the highest northern latitudes, yet known as low as the northern coasts of France. They are met with in vast shoals on the coast of America, as low as Carolina. In Chesapeak Bay is an annual inundation of those fish, which cover the shore in such quantities, as to become a nuisance. We find them again in the seas of Kamtschatka, and probably they reach Japan. The great winter rendezvous of the herring, is within the arctic circle:

there they continue for many months, in order to recruit themselves after the fatigue of spawning; the seas within that space swarming with insect food in a far greater degree, than those of our warmer latitudes. This mighty army begins to put itself in motion in spring. They begin to appear off the Shetland Isles in April and May; these are only the forerunners of the grand shoal, which comes in June: and their appearance is marked by certain signs, such as the numbers of birds, like gannets and others, which follow to prey upon them: but when the main body approaches, its breadth and depth is such, as to alter the appearance of the very ocean. It is divided into distinct columns of five or six miles in length, and three or four in breadth; and they drive the water before them, with a kind of rippling: sometimes they sink for the space of ten or fifteen minutes, and then rise again to the surface; and in fine weather reflect a variety of splendid colours, like a field of the most precious gems.

The first check this army meets in its march southward, is from the Shetland isles, which divide it into two parts; one wing takes to the east, the other to the western shores of Great Britain, and fill every bay and creek with their numbers; the former proceeds towards Yarmouth, the great and ancient mart of herrings: they then pass through the British Channel, and after that in a manner disappear. Those which take towards the west, after offering themselves to the Hebrides, where the great stationary fishery is, proceeds to the north of Ireland, where they meet with a second interruption, and are obliged to make a second division: the one takes to the western side, and is scarcely perceived, being soon lost in the immensity of the Atlantic; but the other, that passes into the Irish sea, rejoices and feeds the inhabitants of most of the coasts that border on it. These brigades, as we may call them, which are thus

separated from the greater columns, are often capricious in their motions, and do not shew an invariable attachment to their haunts.

This instinct of migration was given to the herrings, that they might deposit their spawn in warmer seas, that would mature and vivify it more assuredly, than those of the frozen zone. It is not from defect of food that they set themselves in motion, for they come to us full of fat, and on their return are almost universally observed to be lean and miserable. What their food is near the pole, we are not yet informed; but in our seas, they feed much on the *oniscus marinus*, a crustaceous insect, and sometimes on their own fry.

They are full of roe in the end of June, and continue in perfection till the beginning of winter, when they deposit their spawn. The young herrings, begin to approach the shores in July and August, and are then from half an inch to two inches long. Though we have no particular authority for it, yet as very few young herrings are found in our seas during winter, it seems most certain, that they must return to their parental haunts beneath the ice. Some of the old herrings continue on our coast the whole year.

The Dutch are most extravagantly fond of this fish when it is pickled. A premium is given to the first buss that arrives in Holland, with a cargo of herrings. There is as much joy among the inhabitants on its arrival, as the Egyptians shew on the first overflowing of the Nile. Flanders had the honour of inventing the art of pickling herrings. One William Beauklen, of Biverlet, near Sluys, hit on this useful expedient: from him was derived the name pickle. Beauklen died in 1397. The Emperor Charles V. held his memory in such veneration, for the service he did to mankind, as to do his tomb the honour of a visit.

Anderson, in his History of Commerce, gives to

the Scots a knowledge of great antiquity in the herring fishery. It appears that the Dutch, as early as the year 836, were in the habit of purchasing salt fish from the natives; but these imposing upon the strangers, the Dutch learned the art, and took up the trade, afterwards of such immense emolument to them. Numerous have been the attempts, at different periods, by bounties to secure this treasure to ourselves, but without much success.

This fishery is so valuable to the Dutch, that according to Sir William Monson, who lived in the reign of King James I. they vended annually,

	Lasts	L. sterling.
At Konigsberg, Elbing, Stetin and Dantzic, between 30 and - - - - -	40,000	worth 620,000
In Denmark, Norway, Sweden and Livonia, - - -	10,000	— 160,000
In Russia, - - - - -	1,500	— 27,000
At Stade, Hamburg, Bremen and Embden, - - - - -	6,000	— 100,000
In Germany, - - - - -	22,000	— 440,000
In the Spanish Netherlands,	9,000	— 160,000
At Rouen, - - - - -	500	— 10,000

making together 89,000 — 1,517,000 at twelve barrels the last, containing twelve thousand herrings; independent of a vast quantity consumed in Holland itself, to the amount of several hundred thousand pounds more.

Herrings are cured either white or pickled, or they are cured red or smoked. For curing the white or pickled herring, one of the ship's crew appointed for this office, as soon as the fish are taken, cuts them open; taking out the guts, and every thing but the milts and roes: then washing them in fresh water, they are left for the space of twelve or fifteen hours, in a strong brine, made of fresh water and sea salt. When taken out, they are well drained, and put in



barrels; taking care to dispose them evenly in layers, pressing them well down, and strewing a layer of salt both at top and bottom.

In the curing of red herrings, they lay them in brine as the pickled herring; only they let them lie therein double the time, because they are to take all their salt here, whereas the other kind takes half its salt in the barrel. When taken out of the brine, they string them by the head on little wooden spits, and thus hang them in a kind of chimney, made for the purpose, exposing them to the smoke of brushwood until sufficiently smoked and dried; which commonly takes twenty-four hours.

The goodness of red herrings consists in being large, fresh, fat, oily, soft, and pliable, their outside of a yellow gold colour, their roes or milts within them, and well salted, smoked, and barrelled. The white herrings cured by the Dutch, were, till lately, in the greatest repute. The goodness of this commodity consists in its being fat, fleshy, firm, white, salted the same time it is taken, with good salt, and well barrelled. The Irish herrings, and principally those of Dublin, are scarcely inferior to the best herrings of Rotterdam or Enchuyzen. The Scotch herring is not so well prepared, gutted, salted, and barrelled as the Dutch, and yet its taste is excellent. A considerable number of herrings are also fished on the coasts of England and Wales, particularly off Yarmouth, and the coast of Cardigan; but they are not so proper for exportation as the others; the fish being too dry and fresh for the market.

HIDES. (F. *Peaux, Cuirs*; G. *Häute*; D. *Huiden*; I. *Cuoia*; S. *Pollejos, Picles*; P. *Pelles*; DA. *Huder, Hauder*; Sw. *Hudar*; POL. *Skory*; R. *Koshi*.)

Hides are the skins of beasts; but the denomination is particularly applied to those of large cattle, as

bullocks, cows, buffaloes, horses, &c. See SKINS; also BUENOS AYRES and BUFF HIDES.

Raw hides are still a considerable object in the Egyptian and South American trade: about 80,000 hides of buffaloes, camels, cows, and oxen, are exported yearly. Nearly 10,000 go to Marseilles, and a still greater number to Italy. The buffaloe hides being thicker and heavier than the others, are chiefly transported to Syria. As the pastures of Lower Egypt are excellent, the hides of its cattle, in consequence of their being so well fed, are of the very best quality.

Great numbers of buffaloes are also in North America. They are larger than an ox, and their head is so full of hair, that it falls over their eyes, and gives them a frightful look. There is a bunch on their back, which begins at the haunches, and increasing gradually to the shoulders, reaches on to the neck. The whole body is covered with long hair, or rather wool, of a dun or mouse colour, which is exceedingly valuable, especially that on the fore-part of the body; being proper for the manufacture of various articles. The hide makes a considerable article of exports from South America.

There are hides of several denominations, according to their state and quality.

*Raw* or *green* hide, is that which has not undergone any preparation; being in the same condition as when taken off the carcase. There are also hides dried in the hair, and dry salted hides generally.

*Salted* hide, is a green hide, seasoned with sea-salt and alum, or salt-petre, to prevent its corruption. Most of the hides imported from Holland and France, are so prepared.

*Tanned* hides are further prepared by the tanner, by paring off the hair, and steeping them in pits of lime and tan.

*Curried* hides, are those which, after tanning, have passed through the curriers' hands, and have thus received their last preparation, so as to be fit for use.

HONEY. (F. *Miel*; G. *Honig*; D. *Honig*, *Honning*; I. *Mele*; S. *Miel*; P. *Mel*; D<sup>A</sup>. *Honning*; Sw. *Honing*; Pol. *Miod*; R. *Med*; L. *Mel*.)

Honey is a sweet sort of juice, sucked from vegetables by the bees, and repositied in their combs.

Every swarm of bees consists of three different insects; the queens or females, the drones or males, and the working bees. The latter are by far the most numerous; they are neither male nor female; and it is their business to gather the honey and wax.

With regard to the honey, there are parts in flowers, called the nectarium, full of a sweet fluid; it is to these the bees resort, to gather the liquor, which afterwards becomes honey. They make use of their trunks, to conduct the fluid to their mouths, and from the gullet it falls into the first stomach, which, while it is filled with honey, is in shape like an oblong bladder. When a bee has sufficiently filled its first stomach, it returns back to the hive, where it throws up the honey into a cell. There is reason to believe, that the honey does not return out of the body unchanged, because the first stomach is capable of contraction, in the same manner as that of ruminating animals. Some of the honey-combs are always left open for common use, but many others are stopped up, till there is a necessity of opening them. Each of these are covered carefully with wax, so close, that the covers seem to be made at the same time. This practice tends to preserve the honey in the some degree of fluidity as they design it should have.

In the frost of winter the bees are benumbed, and lie in heaps, as close to each other as possible. But as soon as it thaws, and especially when the sun shines, they are rouzed out of their lethargy. However, with the return of their activity, they are also under necessity of returning to take nourishment. Hence the milder the winter is, the more honey they consume, and they are sometimes in danger of a fa-

mine. A very severe winter, and one that is too mild, are therefore equally dangerous.

In France, a good swarm of bees, in two years, will yield nearly thirty pounds of honey; and they are still more profitable, in countries that are covered with flowers the greatest part of the year.

There are two sorts of honey, the white and the yellow. The white or virgin honey, trickles out spontaneously from the comb. These they break, soon after they are made, and lay them upon hurdles or mats of osier, or on linen cloth, fastened at the four corners to as many posts, and then an excellent white honey will fall from the combs, and grow hard in a short time. Afterwards they put it into glazed earthen pots. Some press this honey out; but then it is not so agreeable, for it will taste of the wax. The best sort of French virgin honey, is that of Languedoc, called honey of Narbonne. It should be new, thick, granulated, of a clear transparent white colour, of a soft and somewhat aromatic smell, and of a sweet and lively taste. If it be very pure, it is almost as hard as sugar-candy; and what renders it so superior, are the many aromatic flowers which grow in those parts, and from which the bees gather their honey. It is always observable, that the honey made in mountainous countries, is more highly flavoured than that of low grounds. The honey made in the spring, is more esteemed than that gathered in the summer; that of the summer, more than that of the autumn. There is also a preference given to that of young swarms.

Yellow honey is obtained, by pressure, from all sorts of honey-combs, old as well as new; and even of those whence the virgin honey has been extracted. They break the combs, and heat them with a little water in basons or pots, keeping them continually stirring; then they put them into bags of thin linen cloth, and these they put in a press, to squeeze out the honey. The wax stays behind in the bag, though

always some small particles of it pass through with the honey.

Honey is the production of most countries; yet more abundant in the island of Candia, and in the greater part of the islands of the Archipelago, than any where else. The Sicilian honey seems to be particularly high-flavoured, and, in some parts of the island, even to surpass that of Minorca; which, no doubt, is owing to the quantity of aromatic plants with which that country is overspread. This honey is gathered three times in the year; in July, August, and October. It is found by the peasants, in the hollows of trees and rocks. The country of the lesser Hybla is still, as formerly, the part of the island that is most celebrated for this article. Considerable quantities of honey are produced by the wild bees in the woods of North America.

The bee is an insect, supposed to have been carried from the old to the new world. The Indians, in North America, call it the English fly; and it is only found near the coasts. Their numbers are continually increasing in these climates; and their honey and wax become daily a more considerable branch of trade.

To judge from Niebuhr's travels, great attention is paid in Egypt to the rearing of bees. Below Mansura, he met on the Nile, twenty boats laden with beehives, which they were bringing up, to make honey on the banks of the river: in each boat were two hundred hives; four thousand in all.

The ancients made much more use of honey than we do at present, because sugar was not then known; but in some cases, it is still preferred in medicine.

HOPS. (F. *Houblon*; G. *Hopfen*; D. *Hoppe*; I. *Luppoli*, *Bruscandoli*; S. *Oblon*; P. *Luparo*, *Lupulo*; DA. *Humle*, *Humble*; Sw. *Humla*; POL. *Chmiel*; R. *Chmel*; L. *Humulus*, *Lupulus*.)

Hops are of the reptile kind of plants; the flowers

of which form a principal ingredient in malt liquors. They are of a greenish yellow, resembling the flowers of the female elm, and grow in a kind of bunch; they contain a blackish bitter grain, which is the seed of the hop.

Neither the male nor female flower of the hop-plant has any corolla; the cup of the former is composed of five leaves; that of the latter, of only a single leaf, very large, and of an oval figure.

They reckon four kinds of hops: 1. The wild garlic hop; 2. The long and square hop; 3. The long white; and 4. The oval hop. The first of these is not worth cultivating. The second is a good hop, but, looking generally red towards the stalk, it will not fetch so good a price. The long white hop is the finest and most productive of all, and will grow very well together with the oval hop.

Hops delight in a deep, rich, light ground. Some plant them in March and April; but the month of October seems preferable, because they will then be strong and vigorous against summer. Plants about eight or ten inches long, with three or four joints or buds each, should be chosen. The land must be dug or plowed well, and laid very even. A thousand hills may be made in an acre of ground, and six or seven plants set on every hill. If planted in October, the plants may be covered over an inch deep: but in spring they must not be buried.

Every winter or spring, the hops ought to be dressed; which consists in pulling down the hills, and cutting away all the new and superfluous roots.

The time for poling the hops, is when they appear above ground; and to receive more of the sun's rays, they ought to lean towards the south. When the hops have got two or three feet above the ground, the next business is to tie them to the proper poles; two or three strings being sufficient for a pole.

Hops blow in the latter end of July; in the beginning of August they bell; and they are sometimes

ripe at the beginning of September, sometimes later. When they begin to change colour, are easily pulled to pieces, and their seeds look brown within them, they are ripe; and they are then to be gathered as quickly as possible, for the least blast of wind will hurt them at this time.

Care should be taken, to dry the hops as fast as they are picked; for, in lying undried, they are apt to heat and change colour. The drying of the hops is the most material part of their manufacture; for if ill-dried, they lose their appearance and agreeable flavour. It is performed in a kiln; or if the quantity be but small, they will dry better, by being laid thin upon a floor, and turning them often.

Hops are packed either in bags or pockets; the latter are always higher in price than the former, partly on account of the better hops being generally packed in pockets, partly on account of the real tare or weight of the linen, which, in bags of two and a half cwt. weighs twenty-five, and in pockets of one and a half cwt. five pounds; whereas in trade there is no allowance made for tare.

**HORNS.** (*G. Des; Sw. Horn; D. Hoorn; F. Corne; I. Cuerno.*)

A hard substance growing on the heads of quadrupeds. Horns make a considerable article in the arts and manufactures. Ox and cow horns, softened by the fire, serve to make lanthorns, combs, handles for knives, ink-horns, tobacco-boxes, &c. Those most esteemed are the mottled. They are sold, large and small together, 120 for one hundred.

## I. &amp; J.

JALAP. (F. *Jalap*; G. *Jalapwurzel*; D. *Jalappe*; I. *Sciarappa*; S. *Jalapa*; P. *Jalappa*; DA. *Jalaprod*; Sw. *Jalaprot*, *Purggerrot*; POL. *Jalapa*; R. *Jalap*; L. *Jalappa*.)

Jalap is the root of the *Convolvulus Jalappa*. It derives its name from Xalapa, a town of Mexico, in the environs of which it grows plentifully. It is also found among the sands of Vera-Cruz. This plant resembles, in appearance, the convolvulus of our hedges. Its stem is climbing, angular, and covered with a slight down. Its leaves, alternately disposed, are rather large, sometimes entire and cordiform, sometimes divided into several lobes, more or less distinct. The flower is campaniform, whitish on the outside, and of a dark purple within. Its root, which is the only part in use, is tuberose, large, lengthened out into the form of a French turnip, white on the inside, and full of a milky juice. The weight of the roots is from twelve to twenty pounds. They are cut into slices, in order to dry them. They then acquire a brown colour, and a resinous appearance. Their taste is rather acrid, and excites a nausea.

The best Jalap is close, hard, weighty, not easily broken, inflammable, brown, and abounding mostly with black circular striæ. Slices of bryony root, are said to be sometimes mixed with those of Jalap, but may easily be distinguished, by their whiter colour, and less compact texture.

Jalap is an active and violent purgative, and is given only in small doses.

There are seven thousand five hundred quintals of Jalap consumed annually in Europe; which cost 45,000*l.* sterling.



**JAPAN EARTH, Cachou.** (F. *Cachou, Terre du Japan*; G. *Japanische Erde, Katechu*; D. *Japaan-sche aarde*; I. *Cacciu, Catto, Terra cattu, Terra Japonica*; DA. *Japonish jord*; Sw. *Japanisk jord*; L. *Terra Japonica*.)

This is a medicinal and aromatic substance, of a dark purple colour; very austere upon the palate, seeming to melt, like bole, in the mouth, and leaving somewhat of a sweetish taste behind it. It is much esteemed as a strengthener of the stomach, and sweetener of the breath, after having been reduced to an impalpable powder, and mixed with ambergris and gum-draganth, and so made up into pastils.

The nature of this drug is not yet ascertained; some giving it a place among medicinal earths, others reckoning it among gums, and others again considering it a composition of several drugs.

The best cachou should be of a dark red colour on the outside, and a clear red within, not burnt, and very glossy.

**JAPAN WOOD.** (G. *Japanholtz*; D. *Japanhout*; DA. *Japanholtz*; Sw. *Jappan*; F. *Bois de Japan*; I. *Legno de Japan*; S. *Japan*; P. *Japan*.)

A species of wood, similar in every respect to the Brasil wood, and employed for the same purposes. The tree which produces it, is found in South America, Japan, and Cochin-China.

The japan and cyprus tree are more commonly met with in Japan than any other part, and are employed not only in the construction of edifices and ships, but in the lesser articles of cabinets, chests, and boxes.

**JASPER.** (F. *Jaspe*; G. *Jaspis*; D. *Jaspis*; I. *Diaspro*; S. *Jaspe*; P. *Jaspe*; DA. *Jaspis*; Sw. *Jaspis*; POL. *Jaspid kamien*; R. *Jaschma*; L. *Jaspis*.)

Jasper is a sort of precious-stone, chiefly opaque, but sometimes transparent in certain parts, not very

different from the agate, excepting that it is more soft, and does not take so good a polish.

This stone is of various colours; as red, green, white with blue stripes, purple, &c. What is now most valued, is the green spotted with red. It is found in all parts of the East-Indies, likewise in America, and several parts of Europe. In Misnia and Bohemia, it is met with of a red colour, in such quantities, and such large pieces, that they manufacture it into images.

JESUIT'S BARK ; see PERUVIAN BARK.

JEW'S PITCH ; see BITUMEN JUDAICUM.

ICELAND MOSS. (G. *Islandisches Moos* ; D. *Yslandich Mos* ; DA. *Islands Mos* ; F. *Lichen ou Mousse d'Island*.)

A species of lichen, or liverwort, which grows on many mountains in Iceland: it consists of erect leaves of about two inches high, of a stiff substance when dry, but soft and pliant when moist.

INDIAN ARROW-ROOT ; *Maranta*. It has a stalk and leaf, exactly like the plant called Indian shot; but the flower differs; that of the latter being a beautiful scarlet, and that of the former milk white. The leaves fall in December, and the root is fit to dig in January. It is mealy, but may be kept perfectly sound for many years, as no insect will meddle with it.

Indian arrow-root, of any opaque or dark particles, that will adhere to any metallic substance, is not esteemed equal with that which is of a pure white.

INDIAN CORN, *Maize*. (F. *Bled de Turquie* ; G. *Türkisch Korn, Mays* ; D. *Turksch koorn* ; I. *Grano Turco o Siciliano, Grano d'India* ; S. *Trigo de Indias, Trigo de Turquia* ; P. *Trigo de Turquia* ; DA. *Turkish hvede* ; Sw. *Turkiskt hvede* ; R. *Tureskoi chljb*.)

Before the discovery of America, the Indians in New England, and many other parts of America, had no other vegetable besides the *zea mays*, or maize, for making their bread: and at this time, there is much of the bread of the country made of this corn. In Italy and Germany also, they cultivate maize as a food for the poor inhabitants.

The ear of the maize yields a much greater quantity of corn than any of our corn-ears; one ear or spike generally consisting of about six hundred grains, which are placed closely together in rows, to the number of eight or ten, and sometimes twelve. The grains are usually yellow, but sometimes they are red, blueish, greenish, or olive-coloured, and sometimes striped and variegated. There are three or four varieties of maize in different parts of America. That of Virginia is very tall and robust, growing to seven or eight feet high; that of New England is shorter and lower; and the Indians further up the country, have a still smaller sort in common use. The stalk of the maize is joined, like the sugar-cane; it is very soft and juicy, and the juice is so sweet and saccharine, that a syrup, as sweet as that of sugar, has been often made of it; and things sweetened with it, have been found not distinguishable from those done with sugar. It has not yet been tried, whether it will crystallize like sugar; but in all probability it will.

The stalk of this plant, if cut up before too much dried, is an excellent winter fodder for cattle. The husks, about the ear, are usually separated from the rest, and make a particular sort of fodder, not inferior to our hay.

To reduce the grain into flour, it is carefully parched in an oven, and then put into mortars, and sifted. The English have contrived in America, by mixing the flour into a stiff paste, either by itself, or with rye or wheat meal, fermenting it with leaven or yeast, and baking it in a hot oven, to make good bread of it. They have likewise found out a method

of making good beer, either of the bread, or by malt-  
ing the grain.

INDIAN RUBBER, *Lead Eater*, *Gum elastic*.  
(F. *Gomme élastique*, *Caoutchou*; G. *Gummi Elasticum*; D. *Veerkrachtig hars*; I. *Gomma o Resina elastica*; S. *Resina elastica*, *Ule*, *Ulce*; P. *Borracha*, *Resina do Para*, *Resina elastica das borrachinhas*; DA. *Fiergummi*, *Elastisk Gummi*; Sw. *Elastisk kada*; L. *Gummi elasticum*.)

The syringe tree, from which the resinous substance, called gum elastic, is procured, has not yet been fully examined by the botanists; the younger Linnæus calls it *Jatropha Elastica*. It is a tree of moderate size, the trunk of which is smooth and yellowish, the leaves pretty large, the flowers white, and the fruit yellow and rather round, but angular; within it there are kernels as large as filberts, which have a bitter taste.

This substance oozes out, under the form of vegetable milk, from incisions made in the tree, and is gathered chiefly in time of rain, because it then flows most abundantly. It first is white and viscous, afterwards becomes yellow, and lastly of a leaden colour, though rather blacker, which it always remains. The means employed to indurate and inspissate this juice, are kept a profound secret. Some affirm, that it thickens and hardens gradually, by being exposed to the air; and that as soon as it acquires a solid consistence, it manifests a very extraordinary degree of flexibility and elasticity. By means of moulds of clay, they give the juice any desired figure. They first spread it over the mould, and as fast as one layer is dry, another is added, till the vessel be of a proper thickness: the whole is then held over a strong smook of vegetables, or fire, whereby it hardens into the texture and appearance of leather; and before the finishing, while yet soft, it is capable of having any impression made on the outside, which remains ever

after. When the whole is done, the inside mould is picked out.

Among us, gum elastic is used, by surgeons, for injecting liquids, and by painters and others, for rubbing out black-lead pencil marks, &c. Gum elastic may be dissolved in ether; which solution daubed over moulds, is used among us, for making tubes, catheters, and other instruments. Dissolved in spirit of turpentine, and mixed with nut or linseed oil, it is fit for the purposes of varnish, or the like. The Indians manufacture it into boots, bottles, flambeaux, a variety of figures for use and ornament, and also a kind of cloth.

**INDIGO.** (F. *Indigo*; G. *Indigo*; D. *Indigo*; I. *Indaco*; S. *Anil*; P. *Anil*; DA. *Indigo*; Sw. *Indigo*; Pol. *Indych*; R. *Krutik, Indigo*; L. *Indigo*.)

Indigo is a blue dye, prepared from the leaves and small branches of the *Indigofera Tinctoria*. This plant is a native of Indostan, and was first transplanted to Mexico, afterwards to the Antilles, and lastly to South Carolina, and Louisiana. It rises in a single ligneous brittle stem, about two feet high, covered with a grey, ash-coloured bark towards the bottom, green in the middle, and reddish at the extremity. The leaves, ranged in pairs around the stalk, are oval, smooth, soft to the touch, furrowed above, and of a deep green on the under side. At the extremity of each branch arise clusters of reddish flowers, succeeded by a small rounded pod, full of cylindrical, shining, and brownish seeds. It is commonly sown in spring, and moisture causes this plant to shoot up in three or four days. It is ripe at the end of about two months, when it begins to flower: it is then cut, and cut again at the end of every six weeks, if the weather is a little rainy. It lasts about two years, after which term it degenerates. It ought to be gathered in with great precaution, for fear of making the farina that lies on the leaves, and is very valuable, fall off by shaking it.

The plant, when gathered, is first thrown into the steeping vat, till that is three parts full. A number of rails are then laid the whole length of the vat, and strongly wedged down, by means of timbers, which are made to press upon them, to prevent the plants from buoying up, when water is put upon them. The softest water answers best for the purpose, and as much is let in as the plants will imbibe, covering it with a surface of four or five inches. In this state it is left to ferment. In twenty-four hours it grows so hot, that no one can bear the hand in it; and if the process goes on well, it will bubble like water in a pot upon the fire, and shew a tinge of a very dusky blue. Great nicety is required in drawing off the water at the critical moment, for if drawn too soon, great part of the pulp will be lost: if too late, the whole may be spoiled.

From the steeping-vat, the liquor is drawn off into the second vat, called the beater or mortar. It is then found impregnated with a very subtile earth, which alone constitutes the blue substance, and which must be separated from the useless salt of the plant; to effect which, the water is forcibly agitated, for the space of fifteen or twenty minutes, and if then it appears curdled, or as if full of small grains, a quantity of clear lime-water is gradually let in, to augment and precipitate the colouring particles; the stirring and beating the liquor being still continued, until the grain by degrees passes from a greenish cast into a fine blue. If the dye should be agitated too long, the parts would form a new combination, and the salt re-acting on the dregs, would excite a second fermentation, which would alter the dye, spoil its colour, and make what is called burnt indigo. When the dye has been sufficiently agitated, the dregs must be left to settle at the bottom of the tub, which they will do in eight or ten hours. The clear water is then very gently drawn off out of the beating vat, through the plug-holes, fixed for that purpose, a few inches above the bottom.

The blue dregs remaining at the bottom, having acquired the consistence of a thick muddy liquid, cocks are then opened, which draw it off into the third vat, called the settler. After it is still more cleared, of much superfluous water, in this last tub, it is then carefully strained through a horse-hair sieve, to render the indigo perfectly clean, and then put into coarse linen bags, eighteen inches long, and twelve wide, which, for the space of five or six hours, are suspended in the shade, to drain out the water. The mouths of the bags are then well fastened, and put into a press, to be entirely freed from any remains of water. The press is a box of five feet in length, two and a half in width, and two in depth, having holes at one end, to let off the drained water. In this press the indigo becomes a fine stiff paste, and when taken out of the bags, it is spread upon a plank, and cut into squares of two inches each, which are ranged under cover, in a free air, and when thoroughly dry, it is packed for exportation.

Indigo may be tried, by dissolving a little in a glass of water; if pure, it will mix equably with the liquor, but if otherwise, it will separate, and fall to the bottom. By fire, the pure indigo will be entirely consumed, while the extraneous particles will remain. The small, or dust of indigo, is most subject to adulteration.

The principal faults in indigo arise; first, from too long a putrefaction in the steeping-vat, which gives it a black, dirty hue; secondly, from too little beating, and then it has a coarse grain, and a greenish colour; thirdly, from too much beating, which always imbues it with a black cast; fourthly, from a mixture of the particles of lime, when the lime-water has not been sufficiently depurated, or when too large a quantity of this water has been let in, which renders it greyish and hard; fifthly, for want of lime-water, or when none is used, by which neglect it never comes to a due granulation, nor settles well, and deposits only an inconsiderable part of the substance.

The antients procured all their indigo from the East Indies; but in modern times, the cultivation of it seems to be principally fixed, besides the East Indies, in Mexico, St. Domingo, Louisiana, Carolina, &c. The indigo shrub is cultivated also through all Arabia, and several wild species thereof grow over that country.

The Spanish indigo, known under the name of Guatimala, a province of Mexico, is the most perfect of all the different kinds of indigo; then comes the growth of Caraccas, a Spanish town in Terra Firma. The East India indigo stands next to it in goodness, and that coming from the British possessions is superior to the productions of Manilla, Java, &c. After the East India indigo, follows the growth of St. Domingo, then that of Louisiana, and lastly the produce of Carolina.

About the year 1620, only 350,000 lbs. of indigo were computed to be consumed annually in Europe. In later times, Great Britain and Ireland alone, have consumed 800,000 lbs. *per annum*, and were reckoned to pay France 200,000 l. stg. yearly, for what they bought from her. The face of this trade has now totally changed. Jamaica, about the year 1672, furnished a considerable supply of indigo, but a duty of 3s. 6d. *per* pound being laid on, the planters were obliged to drop it, and the French islands, particularly St. Domingo, supplied not only Great Britain, but the greater part of Europe. A wiser parliament, after the manufacture began to thrive in Carolina, took off the duty, and granted a bounty of 6d. *per* pound, on all indigo raised in the American colonies, and imported into Great Britain; so that about 1747 the Carolinians remitted about 200,000 lbs. to Great Britain, and the culture of this production has since continued to increase. The culture of indigo has in later times been so wonderfully increased, and the quality so improved in the British East Indies, that now seven-eighths of all the indigo brought into the



European market, come from the East Indies ; and is found in quality fully equal, and in some respects superior, to Spanish indigo.

There are four descriptions of indigo, viz. blue, purple, violet, and copper. The best, or blue indigo, should be of a fine clean texture, and of a bright blue colour, especially when broken : it should also be very light and soft, should break easily, swim on water, and burn freely. Purple is known by the deepness of its colour, and should be free from sandy or pale pieces. Violet is of a dark colour, approaching to red ; the best has a rich appearance. Copper, or red indigo, is chiefly used in our own manufactories : very little is exported.

The manner in which the Guatimala and Caraccas indigo is procured, is worthy of remark. In these beautiful countries, where every estate is from fifteen to twenty leagues in extent, a part of this large space is annually devoted to the culture of indigo. For this purpose, it is sufficient to burn the shrubs which cover the grounds, and carelessly to pass the plough once over them. This is done in the month of March, a season when it very seldom rains in these delightful climates. A man on horseback then scatters the seed of the plant, in the same manner as we sow corn in Europe ; after which, no one pays any attention to this valuable production, till the time of gathering it. As great quantities of indigo are in this manner choaked by the weeds, the Spaniards accordingly gather less indigo from an extent of three or four leagues, than others do from a few acres of ground carefully managed ; and this indigo, though superior to any other, is not so perfect as it might be. Europe receives thereof annually about 6000 cwt.

**IPECACUANHA.** (F. *Ipecacuanha* ; G. *Amerikanische Brechwurzel*, *Ruhrwurzel* ; D. *Braakworstel*, *Roodenloopwortel* ; I. *Ipecoacanna* ; S. *Ipecacuana* ;

P. *Cipó de camaras*, *Ipecacuanha*; D.A. *Brækrod*; Sw. *Kräkrot*; L. *Radix Ipecacuannæ*.)

*Ipecacuanha* is the root of a species of *psychotria*. Of this root there are principally two kinds, the one is ash coloured or grey, and brought from Peru; the other is brown, and brought from the Brasils. The former is a small wrinkled root, bent and contorted into a great variety of figures, with a small white woody fibre, that runs in the middle of each piece. The cortical part is compact, brittle, looks smooth and resinous upon breaking, has very little smell, and the taste is bitterish and subacid.

The brown sort is smaller, and somewhat more wrinkled than the former; of a brown or blackish colour without, and white within.

The ash-coloured or grey *ipecacuanha*, is that usually preferred.

A third sort, called the white *ipecacuanha*, from its colour, has also been distinguished. It is woody, has no wrinkles, and no perceptible bitterness in taste. This, though taken in a large dose, has scarcely any effect at all; and is therefore by some called *bastard ipecacuanha*.

*Ipecacuanha* was first brought into Europe about the middle of the last century; but it did not come into general use till about the year 1686, and is now used as one of the safest emetics, and frequently prescribed in dysenteries.

The roots of a kind of *apocynium* (*dogs-bane*), are too frequently sold instead of *ipecacuanha*; but if the marks above laid down, particularly the ash colour, brittleness, deep wrinkles, and bitterish taste, be carefully attended to, all mistakes may be prevented.

**IRON.** (F. *Fer*; G. *Eisen*; D. *Yzer*; I. *Ferro*; S. *Hierro*; P. *Ferro*; D.A. *Iern*; Sw. *Iern*; POL. *Zelazo*; R. *Sheleso*; L. *Ferrum*, *Mars*.)

Iron is one of the hardest and most useful, as well

as the most plentiful metals; of a livid whitish colour inclining to grey, susceptible of a fine polish, and capable of having its hardness more increased or diminished by chemical processes, than any other metal. Next to tin, it is the lightest of all metals, losing between a seventh and eighth part of its weight, when immersed in water. When very pure, it may be drawn into wire, as fine as horse-hair; but it is much less capable of being beaten into thin leaves, than the other metals, excepting only lead. Iron grows red-hot much sooner than any other metal, and this not only from the application of actual fire, but likewise from strong hammering, friction, or other mechanic violence. It nevertheless melts with greater difficulty than any other metal, except manganese and platina. When perfectly malleable, it is not at all fusible by the heat of furnaces, without the addition or the immediate contact of burning fuel: all the common operations which communicate one of these qualities, deprive it at the same time of the other, as if fusibility and malleability were in this metal incompatible.

It is very generally diffused throughout the globe, being frequently found mixed with sand, clay, chalk, and being likewise the colouring matter of a great number of stones and earth. It is found also in the ashes of vegetables, and in the blood of animals, in such abundance, that some authors have attributed, both the colours of vegetables, and the vital fluid itself, to the iron contained in them.

In consequence of this abundance, the iron-ores are extremely numerous. It is found: 1. Native iron, in Siberia, Senegal, &c. 2. Calciform ores, composed of the blackish, blackish brown, brown, or red calx of the metal; whereof there are a great many species, all mixed with different minerals. 3. The magnet, which is a muddy iron ore. 4. Magnetic sand; of this kind is the blackish sand of Virginia, producing above 60 *per cent.* in iron and steel. 5.

Ochres of different kinds; here belong the blood-stone, found in great abundance in Galicia, in Spain, and sold by the inhabitants for the burnishing of gold leaves; various ochres are also used as paint. 6. Emery, found in large quantities in the islands of Jersey and Guernsey, and used in polishing glass and metals; for which purpose it must first be ground. 7. Martial pyrites; to which belongs the blueish grey pyrites or marcasite, consisting of iron mineralized by sulphur and arsenic. 8. Native Prussian blue, consisting of clay mixed with iron, and coloured with some unknown tinging substance, generally found in swampy grounds or bogs. 9. The terre-verte, or green-earth of Verona and Normandy: this is used as a pigment, and contains iron in some unknown state, mixed with clay.

Iron is employed in three different states, each having its peculiar properties. The first is cast iron; the second wrought or malleable iron; and the third is called steel. According to Bergman, cast iron, which may be called unripe or raw iron, contains the smallest share of phlogiston: the malleable iron contains the greatest quantity; and the steel a middling share between both. This last is called also pig-iron, and yetlin in England.

The richest ores of iron, are the compact and ponderous; of a brownish, reddish brown, or red colour: some yielding no less than seventy or eighty *per cent.* of iron.

The British iron is made from three different kinds of ores. 1. From the iron ore called the Lancashire ore, from the country where it is found in the greatest abundance. This ore is of a fibrous and lamellated texture, and of a dark purple. 2. The bog ore, which resembles a deep yellow ochry clay, and seems to be the deposition of some ferruginaceous rivulets, the currents of which had formerly been over the flat marshy plains, where it is found. 3. The iron stones; they do not resemble a metal in their external surface,

and lie often in beds of great extent, like other stony matters.

The ores of iron are commonly calcined previously to the fusion, in order to render the masses soft enough to be easily broken into fragments of a convenient size for melting. After the metal is duly prepared, it must be smelted in furnaces of large capacities, from sixteen to twenty-five feet high, and ten to fourteen wide, below which is a square cavity to contain the melted metal. Near the bottom is an aperture, for the insertion of the pipe of a large bellows, worked by water, or by other machines, that may produce a strong current of air. Two or more holes are left, ready to be occasionally opened at the bottom of the furnace, to permit at a proper time the scoria and the metal to flow out, as the process may require. Charcoal, or coke, with lighted brushwood, is first thrown in; and when the inside of the furnace has acquired a strong ignition, the ore is thrown in by small quantities at a time, with more of the fuel. The ore gradually subsides in the hottest part of the furnace, where it becomes fused; and the metallic parts being revived by the coal, pass through the scoria, and fall to the lower part or bottom of the furnace, where a passage is open for taking off the scum or dross. The metal now in strong fusion, is let out by a tap-hole, into furrows made of a bed of sand: the large mass, which sets in the main furrow, is called by the workmen a sow, and the lesser ones pigs of iron. Chimney-backs, stoves, garden-rollers, &c. are formed of this rough metal, taken out of the receiver with ladles, and cast into moulds made of fine sand.

The best cast-iron is not at all malleable, and so hard, as perfectly to withstand the file; when broken, it has the appearance of being composed of grain; whereas forged, wrought, malleable, or bar iron, appears to consist of plates. Forged iron, has long been procured, by bringing a mass of cast iron

nearly to the melting point, and placing it under large hammers, to undergo violent and repeated compressions. Cast iron has also of late been brought into a malleable state, by passing it through rollers, instead of forging it. Indeed this seems to be a real improvement in the process. The squeezing it between the rollers, forces out the melted flags from the metallic pores, and brings its metallic fibres into complete contact. By a few repetitions, of either the process with the hammers, or with the rollers, cast iron becomes completely malleable, and is at length formed into bars for sale.

A still more simple process has recently been brought into use, for converting cast iron into forged : this is by heat alone. The cast iron is placed into an air furnace, and kept for several hours in a degree of heat, by which it is brought near to the fluid state. It is then allowed to cool gradually, and is found to be converted into forged iron. To explain this, it will be necessary to observe, that cast iron is brittle, because it has not had the opportunity of crystallizing regularly. When it is exposed to cold, while fluid, the surface becoming solid, prevents the inner parts from expanding and arranging themselves into regular crystals. When cast iron is nearly brought to a melting point, and continued for a sufficient time in that degree of heat, the particles have the opportunity of arranging themselves into that form of crystals by which forged iron is distinguished, and by which it possesses cohesion and all its properties.

Iron is applied to numberless purposes in the arts and manufactures ; among others, it serves as the basis of the fine blue pigment, called Berlin or Prussian blue. By cementation with inflammable matters, iron imbibes a larger quantity of phlogiston, and becomes much harder, less malleable, and more fusible. It is then called steel.

Generally speaking, the best iron is that, which is softest and toughest, and when it breaks, is of an even

greyish colour, without any of those glittering specks, or any flaws or divisions like those seen in broken antimony.

There are several kinds of iron, which have properties very different from one another; as, English iron, which is coarse, hard, and brittle, fit for fire bars, and such uses. Swedish iron, which is a fine tough sort, will best endure the hammer, is softest to file, and in all respects the best to work upon. German iron, commonly called, in England, Dort square, because brought thither from Dort, is wrought into bars of three quarters of an inch square; being a coarse iron, and only fit for ordinary uses.

Iron is principally imported into this country from Sweden and Russia; a smaller quantity, but of superior quality, from Sweden. The Russia iron comes from the port of St. Petersburg, and consists of assorted, and common bar iron. - The assorted iron is in squares and flats of particular dimensions. The common bars, are either old, or new sable iron, of various fabrics; as Alex. Greg. Demidoffs, N. N. Demidoffs, Jacoloffs, &c. old sable; and Gurioffs, Twerdichoffs, Gleboffs, &c. new sable iron.

ISINGLASS. (F. *Colle de Poisson*; G. *Hausenblase*; D. *Huisenblaas*; I. *Cola di pesce*; S. *Col-pez*; P. *Cola de peixe*; DA. *Huusblaas*, *Carlock*; Sw. *Husblas*; POL. *Klei-ryby*, *Karluk*; R. *Klei rübüi*, *Karluk*; L. *Ichthyocolla*.)

Isinglass is a preparation from fish, principally from that called *huso*, Linn. *accipenser*. The method of making isinglass, was long a secret in the hands of the Russians, but has lately been discovered, and the following account of it published by Humphrey Jackson, Esq. in the 63d volume of the Philosophical Transactions. He says: "If what is commercially called long or short staple isinglass, be steeped a few hours in fair cold water, the entwisted membranes will expand, and re-assume their original beautiful

hue, and by a dexterous address, may be perfectly unfolded. By this operation, we find that isinglass is nothing more than certain membraneous parts of fishes, divested of their native mucosity, rolled and twisted into the form above-mentioned, and dried in the open air.

“ The sounds, or air-bladders of fresh-water fish in general, are preferred for this purpose, as being the most transparent, flexible, delicate substances. These constitute the finest sorts of isinglass; those called book and ordinary staple, are made of the intestines, and probably of the peritonæum of the fish. The belluga yields the greatest quantity, as being the largest and most plentiful fish in the Muscovy rivers; but the sounds of all fresh-water fish yield, more or less, fine isinglass, particularly the smaller sorts, found in prodigious quantities in the Caspian Sea, and several hundred miles beyond Astracan, in the Wolga, Yaik, Don, and even as far as Siberia.

“ Isinglass receives its different shapes in the following manner.—The parts of which it is composed, particularly the sounds, are taken from the fish while sweet and fresh, slit open, washed from their slimy sordes, divested of every thin membrane which envelopes the sound, and then exposed to stiffen a little in the air. In this state, they are formed into rolls, about the thickness of a finger, and in length according to the size of the intended staple. A thin membrane is generally selected for the centre of the roll, round which the rest are folded alternately, and about half an inch of each extremity of the roll are turned inwards. The due dimensions being thus obtained, the two ends of what is called *short staple* are pinned together, with a small wooden peg; the middle of the roll is then pressed downwards, which gives it the resemblance of a heart-shape; and thus it is laid on boards, or hung up in the air to dry.

“ The sounds which compose the *long staple*, are longer than the former; but the operator lengthens



this sort at pleasure, by interfolding the ends of one or more pieces of the sound with each other. The extremities are fastened with a peg, as the former ; but the middle part is bent more considerably downwards ; and in order to preserve the shape of the three obtuse angles thus formed, a piece of round stick is fastened in each angle. In this state it is permitted to dry, long enough to retain its form, when the pegs and sticks are taken out, and the drying completed.

“ The membranes of the *book* sort, being thick and refractory, will not admit a similar formation ; the pieces therefore, after their sides are folded inwardly, are bent in the centre, in such manner, that the opposite sides resemble the cover of a book, whence its name.

“ That called *cake isinglass*, is formed of the bits and fragments of the staple sorts, put into a flat metal-line pan, with very little water, and heated just enough, to make the parts cohere like a pancake, when it is dried.”

Isinglass is chiefly used for clarifying wine, malt liquors, cyder, coffee, &c. It is likewise reducible into jelly with alkaline liquors, and is also sometimes used in medicine.

The peculiar shapes given to isinglass, might probably be introduced originally with a view to conceal and disguise its real substance ; but as the mask is now taken off, it cannot be doubted to answer every purport more effectually in its native state ; and the sounds of cod and ling, might prove valuable substitutes for the isinglass imported from Russia.

**JUNIPER-BERRIES.** (F. *Baies de Genève*; G. *Wachholder-Beeren*; D. *Dambesien, Geneverbessen*; I. *Cocole di ginepro*; S. *Bayas de enebro*; P. *Bagas de zimbro*; DA. *Enebær*; Sw. *Enbär*; POL. *Jalowiec iagody*; R. *Moshshuchü*; L. *Juniperi baccæ*.)

Juniper-berries, are the fruit of the juniperus shrub. They have a strong, not disagreeable smell, and a warm, pungent, sweet taste; which, if they are long chewed, or previously well bruised, is followed by a bitterish one. The pungency seems to reside in the bark; the sweet in the juice; the aromatic flavour in the oily vesicles, spread through the substance of the pulp, and distinguishable even by the eye; and the bitter in the seeds. The fresh berries yield, on expression, a rich, sweet, honey-like, aromatic juice; if previously pounded, so as to break the seeds, the juice proves tart and bitter. They are to be chosen fresh, plump, and of a strong taste.

These berries are useful carminatives and stomachics; for which purposes a spirituous water, and essential oil are prepared from them. The liquor remaining after the distillation of the oil, passed through a strainer, and gently exhaled to the consistence of a rob, proves likewise a medicine of great utility. In Germany, juniper berries are used frequently in the kitchen, and they also prepare a kind of wine from them. The Laplanders drink infusions of it, as we do tea and coffee. In the geneva manufactories, it is one of the principal ingredients.

Juniper-berries are imported in this country from Germany and Italy.

The whole juniper plant, has a strong aromatic smell. The wood when burnt, emits a fragrant odour, like incense. It is of a reddish colour, very hard and durable, and when large enough, is used in marquetry and veneering, and in making cups, cabinets, &c. The oil of juniper, mixed with that of nuts, makes an excellent varnish for pictures, wood work, and

preserving iron from rusting. The resin, powdered and rubbed into paper, prevents the ink from sinking through it, for which it is frequently used under the name of ponce.

**IVORY.** (F. *Ivoire*; G. *Elfenbein*; D. *Yvoor*; I. *Avorio*, *Avolio*; S. *Marfil*; P. *Marfim*; DA. *Elfenbeen*; SW. *Elfenben*; POL. *Sloniowa Kosc*; R. *Kost slonowja*; L. *Ebur*.)

Ivory is a hard, solid substance, of white colour, and capable of a very good polish. It is the tusks or teeth of the elephant, and hollow from the base to a certain height; the cavity being filled up with a compact medullary substance, seeming to have a great number of glands in it.

Elephants' teeth are brought to us from the East Indies, and from the coast of Guinea. They are valuable in proportion to their size; those that weigh a cwt. or more, are the most costly; the second class comprehends such as require two teeth to make a cwt. or more; the third class, three to the cwt. or more.

The Ceylon ivory, and that of the island of Achem, does not become yellow, as all other ivory does; for which reason the teeth of these places bear a larger price than those of the coast of Guinea. Among the wholesale dealers, this article is divided into elephants' teeth, properly so called, and schrivelli or schrivellos; which last consist of the smallest teeth and fragments. The grand consumption of this commodity is in making ornamental articles, mathematical instruments, cases, boxes, balls, combs, dice, and a great variety of toys.

Ivory laid for twelve hours in aqua-fortis, and then three days in the juice of beets, will become so soft, that it may be worked into any form: strong vinegar will harden it again.

**IVORY-BLACK.** (F. *Noir d'ivoire*; G. *Elfenbein-schwarz*; D. *Fluweelzwart*; I. *Nero d'avorio*; S. *Negro de marfil*; P. *Negro de marfim*; DA. *Elfenbeensvarte*; Sw. *Elfenbensvärta*.)

Ivory-black is prepared from ivory, or bones burnt in a close vessel. This, when finely ground, forms a more beautiful and deeper colour than lamp-black; but in the common methods of manufacturing, it is so much adulterated with charcoal-dust, and so grossly levigated, as to be unfit for use.

## K.

**KELP**; see **POTASHES**.

**KERMES**; **KERMES GRAINS**, **SCARLET BERRIES.** (F. *Kermes de Provence*, *Graines d'écarlate*, *Vermillon*; G. *Scharlach-Beeren*; D. *Grein*, *Scharlakenbessen*; I. *Grana*, *Chermes*, *Cremese*, *Vermiglione*, *Cocchi*; S. *Grana kermes*, *Grana de la coscoja*, *Vermellon*; P. *Graa*, *Alquermes*, *Kermes*; DA. *Kermesbær*; Sw. *Kermesbær*; POL. *Szarlatne jagody*; R. *Berri*; L. *Grana chermes*.)

Kermes grains, are the produce of an insect, called *coccus ilicis*, which inhabits the *quercus coccifera*. It is found in the woods of Vauvert, Vandeman, and Narbonne in France; but more abundantly in Valencia, Murcia, Jaen, Cordova, Seville, Estremadura, La Mancha, and other parts of Spain; also in the Levant and other countries.

Both antients and moderns seem to have had very confused ideas concerning the origin and nature of the kermes; but it is now ascertained, that it is the body of an insect, a species of the cochineal, trans-

formed into a grain, berry, or husk, according to the course of nature.

The progress of this transformation must be considered at three different seasons. First in the beginning of March, an animalcule, no larger than a grain of millet, scarce able to crawl, is perceived sticking to the branches of the tree, where it fixes itself, and soon becomes immoveable: at this period it grows the most, and appears to swell and thrive by degrees, with the sustenance it draws in. At the second stage, in April, its growth is completed; its shape is then round, and about the size of a pea; it has now acquired more strength, and seems to be covered with a dusty husk or capsule, full of reddish juice, not unlike discoloured blood. In its third state, towards the end of May, the husk seems to be replete with small eggs, less than the seed of a poppy. These are placed under the belly of the insect, in the nest of down that covers its body. It dies soon after this, though it still adheres to its position, shielding its progeny from the inclemency of the weather. In a good season, they multiply exceedingly, having from 1800 to 2000 eggs. The poor are then employed to gather the kermes, the women letting their nails grow for that purpose, in order to pick them off with greater facility.

Those who buy the kermes to send to foreign parts, spread it on linen; taking care to sprinkle it with vinegar, to kill the worms that are within. This produces a red dust, which in Spain is separated from the husk. Then they let it dry, passing it through a searce, and make it up into bags; in the middle of each, its proportion of red dust put in a small leather bag. In the kingdom of Seville, they dry kermes on mats in the sun, stirring it about, and separating the red dust, which is the finest part, and being mixed with vinegar, goes by the name of *pastel*. The husks have but half the value of the dust.

Kermes was a dye well known to the Greeks and

Romans, and it was procured then chiefly from Asia and Africa. In the middle ages, we meet with kermes under the name of *vermiculus* or *vermiculum*. Hence the French word *vermeil*, and its derivative *vermilion*; the latter of which originally signified the red dye of kermes, but is now used for any red paint, and also for fine pounded cinnabar. The kermes was known in Germany, as early as the twelfth century; but when the American cochineal, on the discovery of that country, came to Europe, the French and Spanish kermes were almost, and the German entirely forgotten. At present, the kermes is chiefly used on the coast of Barbary, for dying red: principally at Tunis, for dying those scarlet caps so much used in the Levant. The Spanish kermes is preferred to the French.

Kermes is also used in medicine.

KID AND LAMB SKINS; see SKINS.

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## L.

LAC; GUM-LAC. (F. *Gommelacque*; G. *Gummilake*; D. *Gomlak*; I. *Gommalacca*; S. *Goma laca*; P. *Laca em páos*; DÁ. *Guñmilak*; Sw. *Gummilak*; POL. *Gumalaka*; R. *Gummilak*; L. *Gummi laccæ*.)

The *Coccus Lacca*, or gum-lac animal, is a native of the East Indies. The head and trunk form one uniform, oval, compressed, red body, of the shape and magnitude of a very small louse, consisting of twelve transverse rings. Of this size it is, when it sallies forth from the womb of the parent, in November or December. By the middle of January they are all fixed in their proper situations, upon the succulent extremities of the young branches. Their edges are

enviored with a spissated, subpellucid liquid, which seems to glue them to the branch: it is the gradual accumulation of this liquid, which forms a complete cell for each insect, and is what is called gum-lac. About the middle of March, the cells are completely formed, and the insect is in appearance an oval, smooth, red bag, without life, about the size of a small cucanical insect, emarginated at the obtuse end, and full of a beautiful red liquid. In October and November we find about twenty or thirty oval eggs, or rather young grubs, within the red fluid of the mother. When this fluid is all expended, the young insects pierce a hole through the back of their mother, and walk off, leaving their exuviae behind, which is that white membranous substance, found in the empty cells of the stick-lac.

These insects are the inhabitants of four trees: 1. The *Ficus Religiosa*, and 2. The *Ficus Indica*, Linnæi; 3. The *Plaso*, Hortus Malabarici; and 4. The *Rhamnus Jujuba*, Linnæi.

The gum-lac of this country is principally found upon the uncultivated mountains on both sides the Ganges, where nature produces it in such abundance, that, were the consumption ten times greater, the market might be supplied with this minute insect. The best lac is of a deep red colour; if it be pale and pierced at the top, the value diminishes, because the insects have left their cells, and therefore can be of no use as a dye or colour; but probably they are better for varnishes.

Lac is used among us in various arts; being employed in the preparation of spirit-varnishes, for the making of sealing-wax, and as a colouring material for dying scarlet. The colour given by lac is less beautiful, but more durable, than that given by cochineal. Lac is likewise employed for medicinal purposes, and stick-lac is the sort used.

Besides the gum-lac, which is the cell of the insect, coloured red by its dead body contained in it, there is

the *stick-lac*, which is the white membranous substance found in the empty cells, or the wax adhering to some of the small branches of the tree, being the exuviae of the young insect. This lac, when separated from the adhering sticks, and grossly powdered, is called *seed-lac*; when the stick-lac is freed from impurities, by melting over a gentle fire, and formed into cakes, it is called *lump-lac*; and, lastly, that called *shell-lac*, is the cells liquified, and formed into thin transparent laminæ.

A red medicinal gum is procured by incision from the Plaso tree, so similar to the gum-lac, that it may readily be taken for the same substance. Hence it is probable, that those insects have little trouble in animalizing the sap of these trees, in the formation of their cells.

**LAMPBLACK.** (F. *Noir de Fumée*; G. *Kienruss*; D. *Zwartzel*; I. *Nero di fumo, Negrofumo*; S. *Negro de humo*; P. *Ferrugem de chamminé*; DA. *Könrog*; SW. *Kimrök*; POL. *Sadz*; R. *Sasha*; L. *Fuligo*.)

Lampblack is the finest of the soot blacks, and more used than any other. Its preparation is dependent on the making of common rosin: the impure resinous juice, collected from incisions made in pine and fir trees, is boiled down with a little water, and strained whilst hot through a bag: the dregs and pieces of bark left in the strainer, are burnt in a low oven, from which the smoke is conveyed through a long passage, into a square chamber, having an opening on the top, on which a large sack made of thin woollen stuff is fixed; the soot, or lampblack concretes partly in the chamber, from whence it is swept out once in two or three days, and partly in the sack, which is now and then gently struck upon, both for shaking down the soot, and for clearing the interstices betwixt the threads, so as to procure sufficient draught of air through it. In this manner lampblack is prepared at



the turpentine houses in England, from the dregs and refuse of the resinous matters which are there manufactured.

**LANGWORT; LUNG Moss.** (G. *Lungenmoss*; D. *Longemos*; DA. *Longuemare*; I. *Palmonaire de Chene*; S. *Palmanaria dos Carvalhos*.)

A plant, of which there are seven species. The most remarkable is the common spotted lungwort, or Jerusalem cowslip. It is a native of woods and shady places in Italy and Germany. The leaves are of a green colour spotted with white, and of a mucilaginous taste, without any smell. They are recommended in phthisis, ulcers of the lungs, &c.

**LAPIS ARMENUS;** see **COPPER.**

**LAPIS CALAMINARIS;** see **CALAMINE.**

**LAPIS LAZULI; AZURE STONE.** This is a very costly stone, of a blue colour, veined and spotted with white and yellow, of which is prepared the fine pigment called ultramarine.

The real Lapis Lazuli is found in the mountains of that part of Tartary called Bucharica, which extends eastward from the Caspian Sea, and particularly at Kalab and Buduckschu. It is sent thence to the East Indies, and from the East Indies to Europe. As large pieces of a fine colour, and pure, are scarce, even in that country, and as they are employed in making ornaments and toys, the rough stone itself is costly; and this high price is increased in the ultramarine, by its laborious preparation; though in later times the process has been rendered much easier.

This stone, to be of good quality, and proper for making ultramarine, should be heavy, little mixed with rock, having veins of copper, and of a deep blue, inclining to that of fine indigo. Care should be taken, of its not being rubbed with oil of olives,

which makes it appear of a deeper blue than it would naturally be; and this imposition may be discovered by breaking it, when, if the colour be found paler within than without, it is a sufficient sign that it has been falsified. Whether the azure stone is of a good quality, may be also known, by heating it in the fire till it reddens; which, far from changing its colour, gives it, on the contrary, a new lustre.

There is a sort of lapis lazuli, very common in France, the colour of which inclines to green, being chiefly found in Provence; but its quality is much inferior to that which comes from Tartary and India, being in no respect proper for the making of good ultramarine.

**LEAD.** (F. *Plomb*; G. *Blei*; D. *Lood, Loot*; I. *Piombo*; S. *Plómo*; P. *Chumbo*; DA. *Bly, Blye*; Sw. *Bly*; POL. *Olow*; R. *Swinez*; L. *Plumbum*.)

Lead is a pale, or livid-white metal, soon losing its brightness in the air, and contracting a blackish or greyish ash colour. It is the softest and most flexible of all metallic bodies; but not ductile to any great degree, either in the form of wire or leaf; coming far short, in this respect, of all other metals. It has also the least tenacity of all metallic-bodies: though it possesses a considerable specific gravity; losing, when immersed in water, between one-eleventh and one-twelfth of its weight. It is of all metals the most fusible, excepting only tin and bismuth.

The plumbers cast thin sheets of lead upon a table or mould, covered with woollen, and above this, a linen cloth, without burning or scorching the cloths.

The melted lead is received in a wooden case without a bottom; which, being drawn down the sloping table by a man on each side, leaves a sheet of its own width, and more or less thin, according to the greater or smaller celerity of its descent. For thick plates, the table is covered over with moistened sand, and the liquid metal conducted evenly over it by a wooden

strike, which bears on a ledge at each side. Some have preferred, for mechanic uses, the milled lead, or flattened sheets.

Lead is put up for sale either in pigs, bars, or sheets. The milled or sheet lead is the dearest, then follow the bars, and the pigs are the lowest sort.

The principality of Wales, and some parts contiguous to it, have very considerable lead-mines: amongst them deserve to be enumerated the very rich mines in the neighbourhood of Holywell; the mine in Llanrwst Vale in North Wales; several lead-mines near the village of Llangynnog, amongst which, the mine called Craig-ymwyn yielded annually about four thousand tons, but, having been filled with water, has but lately been attempted to be drained again. The Styper Stones, a rocky tract between the high road from Shrewsbury to Bishopscastle, and the vale of Montgomery, have also very productive lead-mines. In the island of Anglesey, not three quarters of a yard beneath the common soil, is a bed of yellowish greasy clay, from one to four yards thick, containing lead-ore, and yielding from six hundred to one thousand pounds of lead *per* ton. Derbyshire, Flintshire, and Montgomeryshire, are also very rich in lead-mines; and, on the whole, this metal is found in larger quantities in Great Britain than in any other country.

Lead yields the dullest and weakest sound of all metallic bodies.

Though this metal very soon loses its lustre, and tarnishes in the air, it resists much longer than copper or iron the combined action of air and water, and hence it is exceedingly useful for many purposes.

When just become fluid, lead looks bright like quicksilver, but immediately contracts a variously-coloured pellicle on the surface. If this be taken off, and the fire continued, a fresh pellicle will always be formed, till the metal is by degrees changed into a dusky powder or calx. The injection of a little fat, charcoal powder, or other inflammable matter, pre-

vents this change, and readily revives the calx into lead again.

For the preparation of *black, white, red, and lithurges* of lead, see those respective heads.

In Holland, and perhaps in other places, it has been customary to correct the most offensive expressed oils, as that of rape-seed, and rancid oil of almonds or olives, by impregnating them with lead. This dangerous abuse may be discovered, by mixing a little of that oil with a solution of orpiment, or liver of sulphur, made in lime-water; for, on shaking them together, and suffering them to rest, the oil, if it have any saturnine tint, will appear of an orange red, and, if pure, of a pale, yellowish one. A similar abuse is also practised with sour wines, which dissolve as much of the lead as communicates a sweetish taste. If a few drops of the just-mentioned test-liquor be put in a glass of the suspected wine, it will, if adulterated with lead, exhibit a precipitation like a dark-coloured cloud, which is owing to the attachment of the lead to the sulphur in the orpiment.

Lead unites with most other metals. It cannot, however, be united with iron: but if both be exposed to the fire in a proper vessel, the lead scorifies the iron, by seizing on its phlogiston; after which, it melts with the calx into a dark-coloured glass. This property which lead possesses, of reducing all the imperfect metals to glass, is the reason of its being used in the purification of gold and silver, neither of which can be touched by it, but remain pure in the bottom of the cupel.

Lead is employed in making of various vessels, and frequently mixed with tin by the pewterers; a practice, however, which is very dangerous.

Lead, when taken in the human body, is productive of various disorders, particularly a kind of dangerous cholic, terminating in a palsy; and as all the common earthenware is glazed with minium, the use of it cannot be supposed to be void of danger in all

cases. Fountains, or vessels of lead, which contain water, often communicate a noxious quality to it; when suffered to remain long full. Its vapour is dangerous to the workmen who melt it, and the fumes falling upon the grass, render it poisonous to the cattle who eat it; the fish which inhabit the water near smelting-houses, soon die; nor is it safe for any animal to drink it. Even the external use of lead in surgery, is not altogether safe. Certain it is, that all workmen who deal much in lead, are subject to the cholic above mentioned, from the habitual contact of the metal or its calces, even though they neither take it internally, nor are exposed to its fumes:

LEATHER. (F. *Cuir*; G. *Leder*; D. *Leder*, *Leer*; I. *Cuojo*; S. *Cuero*; P. *Couro*, *Coiro*; DA. *Leder*; Sw. *Lüder*; POL. *Rzemien*; R. *Kosha*; L. *Corium*.)

Leather is the tanned skin or hide of animals. The use of tanning is twofold; first, to preserve the leather from rotting; and then, to render it impervious to water.

An infusion of any strongly astringent vegetable will serve to tan leather, so far as to prevent its rotting: and a considerable house in the tanning trade has recently tanned hides and skins without bark; and by some other chemical process is enabled to render them marketable leather in less than four months, skins particularly; but if this vegetable does not contain a good deal of gum-resin, it will not answer for enabling it to keep out water; and hence it is that oak bark, which is more abundant in the gummy resinous part than any of our common indigenous astringents, is preferred to all other substances for the purpose of tanning.

The tanners prepare their bark, by gently drying it on a kiln, and grinding it into a very coarse powder. They then either use it in the way of infusion, which is called ooze, or they strew the dry powder between

the layers of hides and skins, when these are laid away in the tan pits.

The first operation of the tanner is, to cleanse his hides from all extraneous filth, and remove any remains of flesh or fat, which may have been left behind by the butcher.

The hair is next to be taken off; and this is accomplished, either by steeping the hides for a short time in a mixture of lime and water, or by rolling them up close, and piling them in heaps, where they quickly begin to heat and putrify. This hair being loosened, is scraped off, and the tanner proceeds to the operation called fleshing; which consists in a further scraping, with a particular kind of knife, contrived for the purpose, and cutting away the jagged extremities and offal parts, such as the ears and nostrils.

The raw leather is then put into an alkaline ley, in order to discharge the oil, and render its pores more capable of imbibing the ooze. The tanners of this country, generally make their ley of pigeon's dung; but a more active one may be prepared from kelp, or potash; taking care, however, not to make it too strong of the ashes, nor to allow the leather to remain too long in the ley.

The oil being sufficiently discharged, the leather is ready for the ooze, and at first is thrown into smaller holes, which are termed handlers, because the hides or skins, during this part of the process, are taken up, from time to time, and allowed to drain; they continue to work the leather in those handlers, every now and then stirring it up with the utensil called a plunger, which is nothing more than a pole, with a knob at the end of it, until they think proper to lay it away on the vats. In these holes, which are the largest in the tan yard, the leather is spread out smooth, whereas they toss it into the handlers at random, and between each layer of leather they sprinkle on some powdered bark, until the pit is filled

by the leather and bark, thus laid in stratum superstratum: ooze is then poured on, to fill up the interstices, and the whole crowned with a sprinkling of bark.

In this manner the leather is allowed to macerate, until the tanner sees that it is completely penetrated by the ooze; when this is accomplished, the manufacture is finished, so far as relates to tanning; since nothing now remains, but to dry the goods thoroughly, by hanging them up in airy lofts built for the purpose. Such in general is the process for tanning calf skins, and the lighter sorts of hides: but the large, thick, heavy hides, of which the strongest kind of sole leather is made, require to have their pores more thoroughly opened, before the ooze can sufficiently penetrate them. For this purpose, while the hides are in the putrescent state, from being allowed to heat in the manner already mentioned, and well soaked in an alkaline ley, they are thrown into a sour liquor, generally brewed from rye, in order that the effervescence which necessarily ensues, may open the pores. It seems that the foreign tanners know nothing of this branch of the business; indeed their whole process, according to M. de la Lande, is slovenly, and even more tedious than our method, and makes but indifferent leather.

When this operation is accomplished, the leather is put into the handlers, and worked in them for the requisite time, then laid away in the vats, and there left to macerate, until the tanning is found to be completely finished, which, for this kind of leather, requires, from first to last, full two years.

It is this tediousness of the process which enhances the value of leather; and the returns being so slow, the trade of tanning never can be carried on to advantage, but by people of large capital.

The quantity of leather butts annually exported from this country, to most parts of Europe, is very considerable.

Under the denomination of tanned hides are comprehended sole leather, and upper leather.

Sole leather, consists of butts, backs, bends, clout leather, and crope soles. Butts are generally made of the largest ox or cow-hides, and are tanned whole, except the pates and tails. Backs are made from small, as much as from large hides, and slit down the back in two parts, for the conveniency of tanning and packing. Bends are cut off the best part of the hide, as the back, ribs, shoulders, and buttocks: so that out of one hide, there may be made six, eight, or ten bends. Clout leather are a small sort of bends. Crope soles are cut off the back of good upper leather hides.

Upper leather are roundings, rands, wombs, dippings, and heads; being only the thin part, or offal of the hides.

LEMNIAN EARTH; see TERRA LEMNIA.

LEMONS. (F. *Citrons, Limons*; G. *Limonen, Citronen*; D. *Limoenen, Citroenen*; I. *Limoni*; S. *Limones, Limoes*; DA. *Limoner, Citroner*; Sw. *Limoner, Citroner*; POL. *Limonii*; R. *Limonü, L. Limonia.*)

The Citrus Lima, or Lemon-tree, has an upright smooth trunk, divided at the top into a branchy regular head; from twelve to fifteen feet high; large, oval, spear-shaped, pointed, slightly sawed leaves, on lineal footstalks; and many flowers from the sides of the branches, succeeded by large oval fruit, prominent at the top. The varieties are: the lemon-tree with sour fruit; with sweetish fruit; with very large fruit, called Impèrial Lemon; with pear-shaped fruit; with furrowed fruit; with clustered fruit; with childing fruit: with whitish fruit; with tricolour striped fruit, &c.

The flowering and fruit-setting season for the lemon-tree, is chiefly in June and July. It continues



blowing, and setting fruit, for three months, when a full crop is set. The fruit is of a green colour first, turning yellow as it grows ripe. Its shape is almost oval, and divided into several cells, in which are lodged hard seeds, surrounded by a thick fleshy substance, full of an acrid juice. The best lemons should be large, weighty, and of a thin rind.

In the southern parts of France, Spain, Portugal, and Italy, there are forests full of lemon-trees, and a considerable trade is carried on in transporting them to all the northern parts of Europe. They are for that purpose wrapped in soft paper, and packed up in chests.

The lemon yields a very agreeable acid juice, which, besides its common use, answers considerable purposes in medicine. The yellow peel of the lemon is an agreeable aromatic and excellent stomachic: it is also used by the confectioners to be candied. Considerable quantities of pickled lemons are annually shipped from the Mediterranean for the Baltic. The true, unadulterated oil, obtained from lemon peel, is very valuable.

LIGNUM VITÆ; GUAJAÆUM, POCKWOOD. (F. *Gaiac*, *Bois de Gaiac*, *Bois saint*; G. *Pockholz*; D. *Pokhout*; I. *Guajaco*, *Legno santo*; S. *Guayaco*, *Palo santo*; P. *Guaiaco*, *Pao sancto*; DA. *Pokkentræe*, *Fransostræe*; Sw. *Pockenholts*, *Fransosenholts*; POL. *Gwaiak*; R. *Bakaut*; L. *Guaiacum*.)

The Lignum-vitæ tree is a native of the West Indies, and the warmer parts of America; there is also a species, a native of the Cape of Good Hope. It is a large tree, rising, at its full growth, to the height of forty feet, and measuring from fifteen to eighteen inches in diameter, having a hard, brittle, brownish bark, not very thick.

The wood is firm, solid, ponderous, very resinous, of a blackish yellow colour in the middle, and a hot aromatic taste. It is so hard, as to break the tools

which are employed in felling it, and is therefore seldom used as fire-wood, but is of great use to the sugar-planters, for making wheels and cogs to the sugar-mills. It is also frequently wrought into bowls, mortars, and other utensils. It is imported into England, in large pieces of four or five cwt. each, and, from its hardness and beauty, is in great demand for various articles in the turnery-ware, and for trucks of ship-blocks. The wood, gum, bark, fruit, and even the flowers of this plant, have been found to possess medicinal virtues. This wood was first introduced into Europe as a remedy for the venereal disease, whence the origin of the name Pockwood.

In the choice of the wood, that which is the freshest, most ponderous, and of the darkest colour, is the best; and the largest pieces are to be preferred.

**LINENS.** (G. *Linnen*; D. *Lywant*; DA. *Laerd*; F. *Toile*; I. *Tela*; S. *Liënzo*; P. *Panno de linho*.)

Linens are chiefly imported from Russia, Germany, and Holland. Various are the denominations; but the most important are the damask, tabling, toweling, ravenducks, Silesias, &c.; of which articles, many are re-exported to the West Indies and South America.

**LINSEED; LINTSEED, FLAX-SEED.** (F. *Lin*, *Graine de Lin*; G. *Leinsaat*; D. *Lynzaad*; I. *Linseme*; S. *Linaza*; P. *Linhaca*; DA. *Hörrfröe*; SW. *Linfrö*; POL. *Siemie*, *Iniane*; R. *Semja lenjanoe*; L. *Lini Semen*.)

Linseed, is the seed of flax, and is either sowing or crushing seed: the former of a more clean and superior quality to the latter, which is used for the oil-mills.

The brighter in colour, the cleaner and heavier the seed is, the better. That which, when bruised, appears of a light or yellowish green, and fresh in the heart, oily, and not dry, of sweet taste and smell, not

musty, may be depended upon as a good sowing seed.

The flax being generally preferred, in this country, to the seed, as being more valuable; the latter is sacrificed, and considerable quantities imported in consequence.

Our crushing seed generally comes from Archangel, St. Petersburg, Riga, Königsberg, and other ports of the Baltic. That coming from Königsberg, is of the best sort, and the quality decreases in proportion as the ports lie further to the north.

Of sowing seed, Dutch seed of the preceding year's growth is preferred. Riga sowing seed is also esteemed.

**LINSEED-OIL.** (F. *Huile de Lin*; G. *Leinöl*; D. *Lynöli*; I. *Olio di lino*; S. *Acceite de linaza*; P. *Oleo de linhaca*; DA. *Liinolie, Horrolie*; SW. *Linolja*; POL. *Oley lniany*; R. *Lnjanoe masslo*; L. *Oleum lini*.)

This oil is obtained by expression from linseed; it has most of the qualities of nut-oil, and is accordingly sometimes used instead thereof, by painters, printers, and for burning. In many parts, particularly in Poland, it is also used in the kitchen. That drawn without the assistance of fire, is of much esteem in medicine.

**LIQUORICE; SPANISH JUICE.** (F. *Reglisse*; G. *Süssholzsaft*; D. *Zoethout*; I. *Pasta liquirizia*; S. *Regaliz, Orozuz*; P. *Regoliz, Rogoliz, Alcacuz*; DA. *Lakrizrod*; SW. *Lakritsrot*; POL. *Lakrycia, Slodki korzen*; R. *Koren soledkowi*; L. *Glycyrrhiza*.)

The glycyrrhiza, or common Liquorice-shrub, has a long, thick, creeping root, striking several feet deep into the ground; an upright, firm, herbaceous, annual stalk, three or four feet high, garnished with winged leaves, of four or five pair of oval lobes, terminated by an odd one: and from the axillas, erect spikes of pale

blue flowers in July, succeeded by short smooth pods.

The root of this plant is the useful part, being replete with a sweet, balsamic, pectoral juice, which is either extracted, or the wood sold in substance. It is much used in all compositions for coughs and disorders of the stomach; but by far the greatest quantity is used by the brewers.

The common liquorice is cultivated in most countries of Europe, for the sake of its root: but in Spain and Italy, and particularly in Sicily and Calabria, it makes a considerable article of commerce with this country. In Calabria, liquorice is chiefly manufactured, and exported from Corigliano, Rossano, Cassano, and Palermo. The Calabria liquorice, on the whole, is preferable to that coming from Sicily, and the Italian paste to that coming from Spain. Liquorice always grows in great abundance in the Levant, and vast quantities of it are consumed there, in making a decoction, which is drunk cold in the summer, in the manner of sherbet.

To prepare liquorice, the roots are boiled a long time in water, till the fluid has got a deep yellow tincture; and the water at length evaporated, till the remains acquire a consistency; when they are formed into sticks, which are packed up with bay leaves, in the same order as we receive them. The boiling requires the utmost care and precaution, as the juice takes an unpleasant smell and flavour if burnt in the least degree. This paste is manufactured from the month of November till March, the warm season being very unfavourable for it; so much so, that it is not adviseable to ship any in summer, as it easily runs into one mass in the boxes, and then is only to be sold for damaged liquorice.

The round sticks are preferable to the flat ones; and the good quality is to be brittle, bright, without pores, and of a good fragrant smell.

**LITHARGE.** (F. *Litharge*; G. *Glætte*; D. *Gelut*; I. *Litargirio*; S. *Almartaga*, *Litarjirio*; P. *Almartaga*, *Lithargirio*; DA. *Glöd*; Sw. *Glitt*, *Glette*; POL. *Gleyte*, *Gleta*; R. *Glet*; L. *Lithargyros*.)

There are two kinds of litharge, the one natural, the other artificial. The natural is a mineral, sometimes found in lead-mines; reddish, scaly, brittle, and somewhat resembling white lead. But this kind is so scarce, that the artificial kind only is to be met with in commerce.

If, instead of keeping the calx of lead in a continued moderate heat, as is done for the manufactory of red-lead, it be suddenly fused, the matter then puts on a foliated appearance, changing to a dull kind of brick colour when powdered, and is called litharge. Most of this substance is produced, by refining silver with lead; and is of two kinds, red and white.

These two sorts are distinguished by the names of litharge of gold, and litharge of silver. The most perfect is the former: the pale sort contains a considerable proportion of lead in its metallic state; and even the highest coloured litharge is seldom free from a little metallic lead, discoverable and separable, by melting the mass in a crucible; when the lead subsides to the bottom.

Litharge is used in the composition of plaisters, to give them a due consistence. Potters use it, to give a beautiful gloss to their ware; it is also used by painters, dyers, skimmers, and glaziers. When mixed with wine, it gives it a bright sprightly colour, but renders it extremely unwholesome.

**LOGWOOD.** (F. *Bois de Campeche*; G. *Blauholz*; D. *Kampechhout*; I. *Campeggio legno tauro*; S. *Paolo de Campeche*; P. *Pao de Campeche*; DA. *Blaaholt*, *Campeschetra*; Sw. *Campeschetra*; POL. *Kampesza*; R. *Kampetschkoe derewo*; L. *Hæmatoxylum*.)

Logwood grows naturally in the Bay of Campeachy,

at Honduras, and other parts of the Spanish West Indies; also in Jamaica; and rises from sixteen to twenty-four feet high. The stems are generally crooked and very deformed, and seldom thicker than a man's thigh. For sending it to market, they are cut up in billets or junks, and sometimes the bark and white sap are chipped off, which is called chipt logwood.

The most internal part of the wood, which is at first red, becomes black some time after the felling, and it is only this inner part of the tree, that yields a black and violet colour.

The taste for these colours, which was perhaps more general two centuries ago, than it is at present, procured a considerable vent for this valuable wood. This trade was entirely in the hands of the Spaniards, till the settlement of the British at Jamaica. Among the number of pirates who were continually coming from this island, several went to cruise in the Bays of Campeachy and Honduras, and on the coasts of Jucatan, to intercept the vessels that sailed there. These plunderers were so little acquainted with the value of logwood, that when they found barks laden with it, they took away nothing but the iron utensils. One of them having carried off a large vessel, entirely loaded with logwood, brought it into the Thames, designing to equip it as a privateer, when contrary to his expectation, he sold at a very high price, the wood which he had thought to be of so little value, that he had always burnt it as fire-wood, during the voyage. After this discovery, the pirates who were not successful at sea, never failed to repair to the river of Champeton, in the Bay of Campeachy, where they took on board the piles of wood, which were always found ranged on the shore. The peace between England and Spain, having put a stop to the depredations of these pirates, they went to settle between Tabasco and the river Champeton, about Lake Triste, and in Beef Island. In 1675 their numbers

amounted two hundred and sixty. Being driven from here by the Spaniards, they took refuge in the Bay of Honduras, where they were joined by some freebooters of North America. In process of time they increased to fifteen hundred men, and they sold the logwood which they cut, to the people of Jamaica, and to the English colonies in North America. This commerce, till then carried on by smugglers, and which occasioned much clamour, became lawful in 1763. The liberty of cutting logwood was secured to Great Britain, but she was not permitted to raise forts.

The wood which grows upon the dry soil at Campeachy, is much superior to that which is cut in the marshes of Honduras. The growth of Jamaica is inferior to either of them.

Logwood is used in great quantities for dying purple, but especially black colours. It is the material which adds blackness to the vitriol and gallbrown, and this black dye, though not of the most durable kind, is the most common.

The logwood tree, seeds in April. The season for sowing the seed should not be too wet, otherwise it will rot in the ground. It was first propagated in the island of Jamaica, in the year 1715, from some seed brought from the Bay of Campeachy, and there are now such quantities of it growing wild in the neighbourhood of Savannah la Mar, as to incommode the landholders extremely. The growth of this tree is so quick, that it will rise, in proper soils, to the height of ten feet in three years.

Logwood ought to be chosen, in the largest, thickest pieces, sound, and of a deep red colour:

LONG PEPPER ; see PEPPER.

**LUCERNE SEED.** (F. *Graine de Lucerne*; G. *Luzerne-Saamen*; D. *Luzerne zaad*; I. *Semenza di Lucerna*; S. *Semilla de Alfalfa*; P. *Semente de Luzerna*; DA. *Lucernefrö*; Sw. *Lucernefrö*.)

Lucerne is a plant, frequently cultivated in the manner of clover. Its leaves like the latter grow three at a joint, its stalks are erect, and after mowing, immediately spring up again from the stubble. It is made into hay, in the same manner as saint-foin, but should be mowed before it flowers. It makes the sweetest, and most fattening food in the world for cattle.

**LUMP LAC**; see **LAC**.

## M.

**MACE.** (F. *Macis*, *Fleur de Muscade*; G. *Muskatblüthe*; D. *Foelie*, *Foely*, *Muscaatbloom*; I. *Mace*; S. *Macio*; P. *Macis*, *Flor de noz moscada*; DA. *Muskatblommer*; Sw. *Muskottblomma*; POL. *Muskatowy kwiat*; R. *Muskatnoi zwet*; L. *Macis*.)

Mace is a fleshy and fatty membraneous substance, which divides into filaments, laying under the green, and covering the ligneous shell of the nutmeg. When carefully taken off with a small knife, it has at first a beautiful red, but afterwards a darkish colour; it is then laid to dry in the sun, for the space of a day, and afterwards removed to a place less exposed to his rays, where it remains for eight days, that it may soften a little. They then moisten it with sea water, to prevent it from drying too much, or from losing its oil. It is last of all put into small bags, and squeezed very close. The Banda isles produce about 100,000 lbs. of mace.



The mace has the same properties with the nutmeg, being of an astringent, drying nature. An oil is also extracted from mace, of various uses in medicine.

MADDER. (F. *Garance* ; G. *Krapp*, *Ferberröthe* ; D. *Mee*, *Meekrap*, *Krap* ; I. *Robbia* ; S. *Granza*, *Rubia* ; P. *Grança*, *Ruiva* ; D. *Krap* ; Sw. *Krapp* ; Pol. *Marzana* ; R. *Mariona*, *Krap* ; L. *Rubia tinctorum*.)

Madder is a plant, with rough narrow leaves, set in form of a star, at the joints of the stalk. The root, which is the only part made use of, is long, slender, of a red colour, both on the outside and within, excepting a whitish pith, which runs along the middle.

For cultivating this plant, the ground is ploughed deep in autumn, and again in March : and then laid up in ridges, eighteen inches asunder, and about a foot high. About the beginning of April, they open the ground where old roots are planted, and take off all the side shoots, which extend themselves horizontally ; these they transplant immediately upon the new ridges ; at about a foot distance, where they remain two seasons ; and at Michaelmas, when the tops of the plants are decayed, they take up the roots.

It is to be observed, that this method of planting in ridges, is only necessary in wet land, and that the rows are sometimes planted three feet, and the plants in the rows eighteen inches asunder. If all the horizontal roots are destroyed from time to time, it will cause the large, downright roots, to be much bigger, in which the goodness of this commodity chiefly consists.

After the madder roots are taken up, they are kiln dried, and then reduced to powder, by a mill. Previous to the grinding, they are carefully assorted ; the finest roots peeled, make what is called crop, or fine madder, from the German *krap* ; good roots not peeled,

make the ombro, *unberaubt*; gamene or *gemeine*, are all the inferior small roots; the mulls consist of the refuse, peelings, &c.

Madder, gives out its colour, both to water and rectified spirit: the watery tincture is of a dark, dull red; the spirituous of a deep bright one. It imparts to woollen cloth, prepared with alum and tartar, a very durable, though not a very beautiful red dye. As it is the cheapest of all the red drugs that give a durable colour, it is the principal one commonly made use of, for ordinary stuffs. Sometimes its dye is heightened by the addition of brazilwood, and sometimes it is employed in conjunction with the dearer reds, as cochineal; for demi-scarlets, and demi-crimsons.

☛ The *rubia peregrina*, or Turkey madder root, is principally cultivated about Smyrna. It is always imported in its original state, as a root. Our dyers have tried, to order the Dutch madder from abroad, in the same state, but were not able to use it.

The fine quality of madder is distinguished, by its being of a bright, lively, light colour, well ground, without any coarse parts, proceeding from the peelings. Fresh is always more valuable than old madder. It should be kept close, to prevent the access of air, as its virtue evaporates when exposed.

Madder was formerly cultivated among us: but we are now entirely supplied with it from Holland, Germany, and France.

#### MAGNESIA. (L. *Magnesia alba*.)

Like all other earths, is no-where to be found in a state of purity; nature presents it to us in the state of a salt, almost always combined with the sulphuric acid: it is by the decomposition of the sulphate of magnesia that this earth is usually obtained. Magnesia, when pure, is very light, white, and spungy. It first began to be known at Rome under the name of Count Palmas Powder, where it was offered as a

remedy for all disorders. Its resemblance in many respects to calcareous earth, induced several at first to consider it as the same thing; but Mr. Hoffman first proved it to be essentially different: this was afterwards discovered by Dr. Black of Edinburgh, and Margrac of Berlin, unknown to each other, under the name of calcined magnesia: the pure earth is much used in medicine where absorbents are indicated, and the carbonic acid might be detrimental.

**MAHOGANY.** (F. *Bois d'Acajou, Bois de Mahogany*; G. *Mahoganyholz*; D. *Mahognyhout*; I. *Legno mogano*; S. *Caoba, Caobana*; DA. *Mahagoni*; Sw. *Mahagony*.)

The swietenia mahagoni, or mahogany tree, is a native of the warmest parts of America, and grows also in the island of Cuba, Jamaica, Hispaniola, and the Bahama islands. It abounded formerly in the low lands of Jamaica, but is now found only on high hills, and places difficult of access.

This tree grows tall and straight, rising often sixty feet from the spur to the limbs; and is usually four feet in diameter. The foliage is a beautiful deep green, and the appearance made by the whole tree, so elegant, that none could be more ornamental for an avenue. The flowers are of a reddish or saffron colour; and the fruit of an oval form, about the size of a turkey's egg. Some of them have reached to a monstrous size, exceeding one hundred feet in height. One was cut about thirty years since, in St. Elizabeth's in Jamaica, which measured twelve feet in diameter, and cleared to the proprietor 500l. currency. In felling these trees, the most beautiful part is commonly left behind. The negro workmen raise a scaffolding of four or five feet elevation from the ground, and hack up the trunk, which they cut up into balks. The part below, extending to the root, is not only of larger diameter, but of a closer texture than the other parts, most elegantly diversified with

shades or clouds, or dotted like ermine, with black spots; it takes the highest polish, with a singular lustre. This part is only to be come at, by digging below the spur, to the depth of two or three feet, and cutting it through; which is so laborious an operation, that few attempt it, except they are uncommonly curious in the choice of their wood, or to serve a particular order.

The mahogany tree thrives in most soils, but varies in texture and grain, according to the nature of the soil. On rocks, it is of a smaller size, but very hard and weighty, and of a close grain, and beautifully shaded; while the produce of the low and richer lands, is observed to be more light and porous, of a paler colour and open grain; and that of mixed soils to hold a medium between both. This constitutes the difference between the Jamaica wood, and that which is collected from the coast of Cuba and the Spanish Main; the former is mostly found on rocky eminences; the latter is cut in swampy soils, near the sea coast. The superior value of the Jamaica wood, for beauty of colouring, firmness, and durability, may therefore be easily accounted for; but as a large quantity of balks and planks, is brought from the Spanish American coasts to Jamaica, to be shipped from thence to Great Britain, the dealers are apt to confound all under the name of Jamaica wood, which in some measure hurts the credit of this staple production.

This wood is generally hard, takes a fine polish, and is found to answer better than any other sort, in all kinds of cabinet ware. It is a very strong timber, and was frequently used as such, in Jamaica, in former times. It is said to be used sometimes in ship building; a purpose for which it would be remarkably adapted, if not too costly: being very durable, capable of resisting gun shots, and burying the shots without splintering.

It was not till the commencement of the last cen-

tury, that mahogany was imported into England, with the view of making household furniture of it. The carpenters in the beginning, found this wood much too hard for their tools, and it was some time, before this difficulty was overcome.

MAIZE; see INDIAN CORN.

MALACHITE; see COPPER.

MANHEIM GOLD; see COPPER.

MANNA. (F. *Manne*; G. *Manna*; D. *Manna*; I. *Manna*; S. *Mana*, *Mangla*, *Almangre*; P. *Manna*; DA. *Manna*; SW. *Manna*; POL. *Manna*; R. *Manna*; L. *Manna*.)

Manna is a gummous substance, obtained from the *fraxinus ornus*, a species of ash-tree, in the southern parts of Europe, particularly in Calabria, and Sicily.

Towards the end of July, or about the beginning of August, during the season of the greatest heat, they make an incision in the bark, near to the root of the tree. A thick whitish liquor is discharged from the wound, which hardens in the sun; when it is carefully taken off, and gathered into chests. They renew these incisions, every day during the season, observing, however, only to round one side of the tree, the other side they reserve for the summer following. These trees never arrive at any considerable size, on account of their annual bleedings; but they are said to last a century, yielding manna. Each tree produces about half a pound of gum a year.

The best sort of manna, is in oblong pieces or flakes, moderately dry, friable, very light, of a whitish or pale yellow colour, and in some degree transparent. The inferior kinds are moist, unctuous, and brown.

All manna in Calabria belongs to the King, who

gives it in farm to a set of contractors. To gather it, a certain number of countrymen are furnished by the feudatory, whose scanty wages are a poor compensation for this involuntary service. The peasants are punished with the utmost severity, if detected in burning, destroying, or damaging any of these trees, that cause to them so much vexation; and are sent to prison, if the smallest quantity of the juice be found in their houses. They may eat as much as they please, in the woods, and most of them take this physic once a year.

The best, and the greatest quantity of manna, comes from the island of Sicily. It consists of two sorts, the one called flakey, generally of more than double the value of the other, called manna in sorts. The principal places, where this drug is collected in Sicily, are Cinesi and Geraci. The denomination of Cinesi manna comprehends, not only the produce of Cinesi, but also of the villages of Capace, Carini, Favoretta, &c. so also Geraci manna, means not only, the Mannas collected at Geraci, but at Castelbuono, Cefalu, and S<sup>o</sup>. Mauro:

The best flakey manna, comes from Cinesi and Capace; the very best from Cinesi.

They reckon, that the four villages of Cinesi, Capace, Carini, and Favoretta, produce on an average, above 1400 Sicilian Cantars manna, whereof four-fifths are in sorts, and the rest flakey. The four villages of Geraci, Castelbuono, Cefalu, and S<sup>o</sup>. Mauro, are reckoned to produce annually about one thousand cantars of manna in sorts, and twenty-five to thirty cantars flakes. A Sicilian cantar, is equal to 196 lb. avoirdupois. The whole crop of Sicily manna, is generally bought by the merchants of Palermo, at the harvest, which begins in August, and ends in October. The chief market for flakey manna, is at Leghorn. The manna in sorts, generally goes to Marseilles, or the Levant.

Tolpha manna, is inferior in value to the flakey,

but more valuable, than manna in sorts. It bears its name from Tolpha, a place in the Roman territory.

Manna, in medicine, proves a gentle laxative, operating with great mildness.

MARBLE. (F. *Marbre*; G. *Marmor*; D. *Marmer*; I. *Marmo*; S. *Marmol*; P. *Marmore*; DA. *Marmor*; Sw. *Marmor*; POL. *Marmur*; R. *Marmor*; L. *Marmor*.)

Marble is a kind of stone, found in great masses, and dug out of pits or quarries. It is of so hard, compact, and fine a texture, as readily to take a beautiful polish, and much used in ornaments of buildings; as columns, statues, altars, tombs, chimney pieces, tables, and the like.

There are infinite numbers of different kinds of marble. Some are of one simple colour, as white, or black; others variegated with stains, clouds, waves, and veins: but all opaque, excepting the white, which cut into thin pieces, becomes transparent.

Some under the genus of marble, comprehend also porphyry, granate, and alabaster.

Marble is found in considerable quantities, in most of the mountainous parts of Europe. Derbyshire is that county of England, most abounding in this article. Near Kemlyn Bay, in the island of Anglesey, there is a quarry of beautiful marble, called Verde di Corsica, being common to this place, some parts of Italy, and Corsica. Its colours are green, black, white, and dull purple, irregularly disposed. Italy is that part of Europe which produces the most valuable marble, and in which its exportation makes a considerable branch of foreign commerce. The black and the milk white marble, coming from Carara, a town in the Duchy of Massa, are particularly esteemed.

Bruce gives us a very particular account, of the source from whence were derived, those vast quanti-

ties of marble, granite, &c. found in Egypt. These he discovered, on his journey from Kenne to Cosseir, on the Red Sea. At Hamra, the porphyry mountains and quarries begin, in the latitude of nearly twenty-four degrees, continuing along the coast of the Red Sea, to about 22 deg. 30 min. when they are succeeded by marble mountains; these again by others of alabaster, and these last by basaltic mountains; some of the mountains appearing to be composed entirely of red, and others of green marble. Near to Cosseir, he discovered the quarries, from whence the ancients obtained those immense quantities of marble, with which they constructed so many wonderful works. In four days, during which our author travelled, he says, that he had passed more marble, granite, porphyry, and jasper, than would build Rome, Athens, Corinth, Syracuse, Memphis, Alexandria, and half a dozen such cities. The whole is situated on a ridge, with a descent to the east and west, by which means it might easily be conveyed, either to the Nile or Red Sea.

**MARMELADE.** (D. D. A. F. Sp. *Marmalada.*)

It is made of the quince, oranges, &c.; that which is made of the quince is most esteemed.

**MASTICH.** (F. *Mastic*; G. *Mastix*; D. *Mastik*; I. *Mastice*; S. *Almastiga*, *Almaciga*; P. *Almacega*; D. A. *Mastix*; Sw. *Mastix*; Pol. *Mastyks*; R. *Mastika*; L. *Mastix*.)

Mastich or gum mastic, is gathered from the pistacia orientalis, or true mastich tree of the Levant. The bark of the tree is brown; the leaves are composed of two or three pair of spear shaped lobes, terminated by an odd one. These turn of a brownish colour towards autumn, but continue all the year.

This gum is in small granules, being white, clear, and sweet, if good; though age makes it turn yellowish. There is also a kind of black mastich,



brought from Egypt, which serves to sophisticate camphor.

Mastich is chiefly the product of Chios, an island in the Turkish Archipelago; where the trees that yield it, are cultivated with as much care as the vines; and it brings in a yearly revenue of about 2000l. sterling, to the Grand Seigneur.

Mastich is temperate in heat, and of a dry binding quality. It is used in medicine, and jewellers mix it with turpentine and black ivory, and lay it under their diamonds, to give them a lustre.

MATTS. (G. & D. *Matten*; DA. *Matter*; F. *Nattes*; I. *Sluoje*; S. *Estreys*; P. *Esterrus*.)

A texture usually formed of sedge flags or rushes. The mats justly entitled to rank as commercial commodities, are those of Russia, of which we annually import large quantities from St. Petersburg and Archangel: they are generally of a tolerably close texture, and extremely durable.

MERCURY; see QUICKSILVER.

MILLET. (F. *Millet*, *Mil*; G. *Hirse*; D. *Geerst*, *Geers*, *Gierst*; I. *Miglio*, *Panicastrolo*; S. *Mijo*; P. *Milho*, *Painço*; DA; *Hirse*; Sw. *Hirs*; POL. *Proso*; R. *Proszo*; L. *Milium*, *Panicum miliaceum*.)

Millet is a native of India, but is now commonly cultivated in many parts of Europe, as an esculent grain. It rises with a reedlike stalk, three or four feet high. The top of the stalk is terminated by a large loose panicle, which hangs on one side, having a chaffy flower, which is succeeded by a small round seed. There are two varieties, one with white, and the other with black seeds; but they do not differ in any other particular. This plant is greatly cultivated in the oriental countries, from whence it is annually brought to us. It is seldom cultivated in Britain,

but in small gardens. It is used as an ingredient in puddings, and is by some people greatly esteemed. In this country the seeds ripen in August, when the plant must be cut down, and the seeds beaten out. If not protected from birds, they will devour it as soon as it begins to ripen.

MINIUM; see RED LEAD.

MOHAIR, *Moreen*. (F. *Moire*; G. *Mohr*, *Moor*; D. *Moor*; I. *Moerro*; S. *Mue*, *Muer*; P. *Chamalote*, *Melania*; DA. *Moor*; Sw. *Moire*; POL. *Mora*; R. *Obür*.)

The Mohair goats are a variety of the common goats, being famous for their soft and silver white hairs, the like of which are not to be found in any place but Angora. This hair is commonly carried ready-spun to Europe, and being there woven into camlets and other manufactures, particularly by the English, is afterwards exported to all parts of the world, and even to those, whence the yarn was originally brought.

MOLASSES. (F. *Syrop de Sucre*, *Melasses*; G. *Syrup*; D. *Syroop*; I. *Mieluzzo di zucchero*; S. *Miel de azucar*, *Chancaca*; P. *Melasso*, *Assucar liquido*; DA. *Sirup*; Sw. *Sirap*; R. *Patoka sacharnaja*.)

Molasses, Molosses, or Melasses, are that gross fluid matter, remaining of sugar after refining; and which no boiling will bring to a consistence more solid than that of syrup.

Molasses are much used on the continent, for the preparation of tobacco, and also among poor people instead of sugar, as treacle.

In England, molasses are chiefly used, for the purpose of distilling a spirit from it, which is dearer and superior to malt spirits.

**MOSS ROCK** ; the production of Denmark and Norway. It wears a custaceous appearance: the white, and most free from stoney particles, is most esteemed ; it is used in large quantities in the manufacture of cudbear. A company, under the denomination of the **CUDBEAR COMPANY**, has been many years established in Peter-street, Westminster. It is used for dying various colours, as crimsons, garnetts, &c. Half a pound of cudbear is sufficient to dye a pound of cloth a good pompadour: several lighter shades may be done afterwards in the same liquor, without adding any more cudbear. Worstead requires a fourth more than cloth, and wool an half more. From a quarter to half an ounce of this cudbear to a pound of cloth is sufficient to wet out for blues. In either wetting out or rinsing, it will be found to save about one-third of indigo used in the common way: the saving to the dyer is considerable, and the colour equally beautiful and permanent as if made with indigo, and wood alone. Cudbear dyes crimsons and garnetts without any preparation: the colours are more beautiful, more durable, and cheaper than those made with woods. Cudbear will save considerably in cochineal, and is as fixed as grain alone. Cudbear dyes silk with or without preparation, and the process is extremely simple; ten to fourteen ounces to one pound of silk making an exceeding high colour. In dying silks or woollens, where the adherence of the cudbear is found inconvenient, putting it in a thin linen bag removes the objection, and it only requires a few minutes more boiling to make the cudbear throw out all its virtues.

**MOTHER OF PEARL.** (F. *Nacre*; G. *Perlmutter*; D. *Paarlemoer*; I. *Madreperla*; S. *Madre de Perlas*, *Concha de Nacar*; P. *Madreperola*; DA. *Perlemor*, *Perlamoder*; Sw. *Perlmo*; POL. *Macica perlowa*; R. *Shemtschufhnaja*, *rakowina*; L. *Bacca conchæ*, *Concha margaritifera*.)

Mother of Pearl, is the shell of the *mytilus margariferus*, or pearl-bearing mussel. It has the shell compressed and flat, nearly orbicular, the base transverse, and imbricated with dentated coats. It dwells in the ocean of either Indies. On the inside it is exquisitely polished, and of the whiteness and water of pearl itself. It has also the same lustre on the outside, after the external laminæ have been taken off, by aquafortis and the lapidary's mill.

Mother of pearl is used in inlaid works, and in several toys, &c.

**MOUNTAIN BLUE**; see COPPER.

**MOUNTAIN GREEN**; see COPPER.

**MUSK.** (F. *Musc*; G. *Bisam*; D. *Muskus*; I. *Muschio*; S. *Almizele*; P. *Almiscar*; DA. *Desmér*; Sw. *Desman*; POL. *Pizmo*; R. *Muscus*; L. *Moschus*.)

Musk is a very strong-scented substance, found under the belly of the male, of a species of goat, called *moschus mosciferus*. After killing it, the peasants cut off the bag containing the musk. It is about the size of a hen's egg, and is situated nearer to the organs of generation, than the navel. In its original state, it is nothing more than putrid blood, which coagulates in this bag. The largest bladder cannot furnish above half an ounce of musk, generally but little more than a quarter of an ounce.

Musk affords such a strong smell, that it becomes disagreeable, if not kept at a distance, or weakened by the admixture of other substances. It is likewise

so fixed and permanent, that at the end of several years, it seems to have lost no part of its activity. When it comes to us, it is dry with a kind of unctuousness, of a dark reddish brown, or rusty blackish colour, in small round grains, with very few hard black clots, and perfectly free from any sandy or other visible foreign matter. If chewed and rubbed with a knife on paper, it looks smooth, bright, yellowish, and free from bitterness. Laid on a red-hot iron, it catches flame, and burns almost entirely away, leaving only an exceeding small quantity of light greyish ashes: if any earthy substances have been mixed with the musk, the quantity of the residuum will readily discover them.

The best and greatest quantities of musk, come from Thibet, from whence they are carried for sale to Patna, the chief town of Bengal. That which is produced in Siberia, is inferior, having somewhat of the flavor of castor. It seems to be the produce of the musquash or musk-rat, a diminutive of the beaver, and is also to be met with in North America.

Musk, besides its use as a perfume, is esteemed a medicine of great efficacy.

**MUSTARD-SEED.** (F. *Graine de Moutarde*; G. *Senfsaat*; D. *Mosterd*; I. *Mostarda, Senapa*; S. *Mostaza*; P. *Mostarda*; DA. *Senep*; Sw. *Senap*; POL. *Gorrozyka*; R. *Gortschiza*; L. *Sinapis*.)

Mustard is a plant, of which there are seventeen species, three of which are natives of Great Britain; the *sinapis alba*, *nigra*, and *arvensis*.

The *alba*, or white mustard, which is frequently cultivated as a sallad herb, for winter and spring use, produces white seeds, used for making the sauce called mustard.

The *nigra*, or common mustard, which is frequently found growing naturally, but is also cultivated in the fields, for its brown seed.

The *arvensis* grows naturally on arable land, in

many parts of Great Britain. The seed of this, is commonly sold under the title of Durham mustard-seed.

The white and brown mustard-seed, is mostly imported from Holland, though always inferior to the English growth. Brown seed is higher in value than the white, and is chiefly used for pickling.

MYRRH; GUM MYRRH. (F. *Myrrhe*; G. *Myrrhen*; D. *Mirrhe*; I. *Mirra*; S. *Mirra*; P. *Mirra*; DA. *Myrre*; Sw. *Myrha*; POL. *Mirra*; L. *Myrrha*.)

Myrrh is a gummy resinous, concrete juice, obtained from an oriental tree, of which we have as yet no certain account. It is a native of Abexim in Ethiopia, and grows besides on the eastern shores of Arabia Felix, and on the coasts of the Indian ocean.

The best gum myrrh is somewhat transparent, friable, in some degree unctuous to the touch, of an uniform brownish, or reddish yellow colour, a moderately strong not disagreeable smell, and a slightly pungent, very bitter taste. The inferior sorts are of a red-blackish, or black earthy colour, solid, and heavy. There are sometimes found among it, hard shining pieces, of a pale yellowish colour, resembling gum arabic, of no taste and smell; sometimes masses of bdellium, darker coloured, and differing from myrrh, both in taste and smell; sometimes an unctuous gummy resin, of a moderately strong, somewhat ungrateful smell, and a bitterish very durable taste, obviously different from those of bdellium and myrrh. On account of these and other adulterations, great care is requisite in the choice of this drug.

To have the first and most perfect kind of myrrh, a young vigorous tree is selected, free from moss or any other plant adhering to the bark, and a deep incision made with a hatchet, above the first large

branches. What runs from this wound the first year, is myrrh of the first growth, and never plentiful. This operation is performed, some time after the rains have ceased. At each return of the season, the sap continues to run, in the course to which it has been accustomed; but by the second year, the tree begins to rot at the place of the incision, so that the myrrh is of a secondary quality. That obtained from incisions near the roots, and in the trunks of old trees, is also of an inferior quality.

Grand Cairo, is the great staple-place for the myrrh trade; but by far more considerable quantities are brought from Arabia Felix, than from Ethiopia and Abyssinia; and the quality of the latter, distinguished also by the name of Troglodite myrrh, was always more valued.

The medical effects of this aromatic bitter, are to warm and to strengthen. It seems now to be less used than in former times.

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## N.

**NEPHRITIC WOOD.** (G. *Guesholtz*; D. *Gravehout*; DA. *Grenstree*; F. *Bois Nephretic*.)

A wood of very fine dense and compact texture, of a fine grain, brought to us from New Spain, in small blocks: it is to be chosen of a pale colour, sound and firm, and such as has not lost its acrid taste. This wood is a very good diuretic: it is also recommended in fevers, and obstructions of the viscera.

**NEWTRE SKINS,** the skins of monkeys, of which large quantities are now imported from South America.

NICARAGUA WOOD. (F. *Bois de Sang*, *Bois de Nicaragua*; G. *Blutholz*, *Nikaragaholz*; D. *Blodhölz*; I. *Legno sanguigno*; S. *Palo de sangre*; P. *Páo sanguinho*; DA. *Blodtræe*; Sw. *Blodträd*.)

Nicaragua wood, is a kind of dying wood, of a very bright red colour; brought from Nicaragua, a province in the Spanish America.

NITRE; see SALTPETRE.

NUTMEGS. (F. *Noix de Muscade*; G. *Muskatnüsse*; D. *Muskaatnooten*, *Nootemuskaat*; I. *Noci muscade*; S. *Nuez muscada*; P. *Noz muscada*; DA. *Muskadnödder*; Sw. *Muskot*; POL. *Musza-towa galka*; R. *Muskatnüe oreschki*; L. *Nux moschata*.)

The myristica moschata, or nutmeg tree, in its size and foliage, resembles the pear tree; it attains the height of 30 feet, producing numerous branches, which rise together in stories: the bark of the trunk is of a reddish brown, but that of the young branches of a bright green colour; the leaves are nearly elliptical, pointed, undulated; on the upper side of a bright green; on the under, whitish. The flowers are small, and male and female upon separate trees; they are succeeded by the fruit, which is covered with an external green substance, similar in its form to that of the common walnut, but more fleshy and full of juice. This external covering, when grown ripe, acquires a deep yellow colour, and as it opens, discovers an internal membranous coat, of a beautiful red colour, which divides into filaments, and is known by the name of *mace*. This lies immediately over the thin and brittle shell that encloses the nutmeg. It is now necessary to gather the fruit, otherwise the mace would get loose, and the nutmeg would lose that oil which preserves it, and in which its excellence consists.



It is nine months before the fruit comes to perfection. After it is gathered, the outer rind is stripped off. The nuts are then carried home, and the mace carefully taken off with a small knife, after which they are for three days exposed to the sun, and then dried before a fire, till they emit a sound when they are shaken; they then beat them with small sticks, in order to remove their ligneous shell, which flies off in pieces. These nuts are now divided in three parcels; the first contains the largest and most beautiful, destined to be brought to Europe; the second contains such as are reserved for the use of the inhabitants; and the third contains the smallest, which are irregular or unripe. The latter are burnt, and the former used for making oil.

To prevent the nutmegs thus selected, from corrupting, they are plunged in a liquid of lime and salt-water; they are afterwards laid in heaps, where they heat, and lose their superfluous moisture by evaporation: when they are fit for being sent to Europe.

The nutmeg differs in goodness, according to the age of the tree, the soil, the exposition, and method of culture. The round nutmeg is preferred to that which is oblong; and that fruit is more particularly esteemed, which is fresh, moist, heavy, of good smell, and an agreeable, though bitter flavor; and which yields an oily juice upon being pricked.

A congealed oil is obtained by expression, from the nutmegs rejected at market; there is also an oil distilled from them.

The use of the nutmeg, both for culinary and medical purposes, has been known for many centuries.

Nutmeg trees grow in several islands of the eastern ocean. The wood-pigeon of the Moluccas, is unintentionally a great planter of these trees, and disseminates them in places, where the Dutch conceived it their interest, that they should be rooted out, or de-

stroyed. The growth of this aromatic, therefore, now is chiefly confined to a few of the Banda islands, whereof Banda itself, Neira, and Pouloay produce 800,000lbs. of nutmegs annually.

NUTS; see SMALL NUTS.

**NUX VOMICA.** (F. *Noix vomiques*; G. *Kraehenaugen*; D. *Braaknooten, Kraanöogen*; I. *Noci vomiche*; S. *Mataperros, Matucan, Nuez vomica*; P. *Noz vomica, Canirao*; DA. *Krantsöine, Bræknöd-der*; Sw. *Räfkaka*; POL. *Wronie oko*; R. *Zülibuchü.*)

*Nux vomica*, is a flat, compressed, round fruit, about the breadth of a shilling, brought from the East Indies. Its surface is not much corrugated, and its texture is firm like horn, and of a pale greyish brown colour without, and various colours within, sometimes white, and sometimes brown: the largest, whitest, newest, and cleanest being the best. It is considerably bitter and deleterious, and used in medicine.

## O.

**OAK.** (F. *Chêne*; G. *Eiche*; D. *Eik*; I. *Quercia*; S. *Roble, Carballo*; P. *Roble, Carvalho*; DA. *Eeg*; Sw. *Ek*; POL. *Dab*; R. *Dub*; L. *Quercus.*)

There are various species of the oak tree, of which the most useful is our common English oak, *quercus robur*. It grows from about sixty to one hundred feet high, with a prodigiously large trunk, and spreading head; and is supposed to continue its growth many centuries.

The oak tree is of the utmost importance to Bri-

tain for building, and particularly for her navy. The English oak claims precedence above any foreign species, for its prodigious height and bulk, and the superior hardness and durability of the wood. The American oak stands next in repute to the English.

The acorns, the fruit of the oak, are good food for swine, deer, and turkeys.

**OAK BARK** : see **BARK**.

**OATS.** (F. *Avoine*; G. *Haber, Hafer*; D. *Ha-ver*; I. *Vena, Avena*; S. *Avena*; P. *Avea*; DA. *Ha-vre*; Sw. *Hafre*; R. *Owes*; L. *Avenæ*.)

Oats are a small sort of corn or grain, used for the feeding of horses, and sometimes, in the northern parts of Europe, for the making of bread, after having reduced them into meal by grinding and cleaning. Oatmeal is also used in considerable quantities, for the making of gruel.

The best oats should be white, clean, of a large full grain, and heavy. We have annually a large importation of oats, from Prussia, Lower Saxony, and Westphalia, principally for the use of the metropolis, which, with its environs, is computed to consume on an average, thirty thousand quarters of oats weekly.

**OIL.** (F. *Huile*; G. *Oehl*; D. *Oli, Olie, Oly*; I. *Olio*; S. *Aceite*; P. *Oleo*; DA. *Olje*; Sw. *Olja*; POL. *Oley*; R. *Maslo*; L. *Oleum*.)

Oil is an unctuous, inflammable substance, drawn from several animal and vegetable bodies.

Animal oils, are their fats: all animal substances yield them, together with their volatile salts, in distillation.

Vegetable oils are obtained by expression, infusion, and distillation.

The oils by expression are obtained from the seeds, leaves, fruits, and bark of plants; thus the seed of mustard, and of the sunflower, of almonds, nuts,

olives, linseed, rapeseed, bay-berries, mace, nutmegs, beechmast, &c. afford a copious oil by expression. The method of obtaining oils by expression is very simple; thus, if fresh almonds be pounded in a mortar, the oil may be forced out with a press not heated. The avoiding the use of heat, in preparing all oils intended for internal use, is of great importance, as heat gives a very disagreeable rancidness. This method holds for all those vegetable matters that contain a copious oil. Certain dry matters may be made to afford oils by expression, by grinding them into a meal, which being suspended to receive the vapour of boiling water, will thus be moistened, so as to afford an oil, in the same manner as almonds; and by this process an oil may be procured from linseed, hempseed, lettuce seed, white poppy seed, &c.

Oils obtained by expression should be suffered to deurate themselves, by standing in a moderately cool place; to separate from their water, and deposit their fæces; from both which they ought to be carefully freed.

The next class of oils, are those made by infusion or decoction, wherein the virtues of some herb or flower are drawn out in the oil. The scented flowers, like jessamine, honeysuckle, sweet-briar, roses, &c. require to be treated in a particular manner; the essential oil being too dear, and scarcely obtainable by distillation, if the flowers are barely infused in fine oil of nuts, or oil of ben, drawn without heat, and kept in a cool place, their subtile odorous matter will pass into the oil, and richly impregnate it with this flavour. These essences may be rendered still more perfect, by straining off the oil first put on, and letting it stand again without heat, upon fresh flowers: which operation may be repeated twice or thrice. Oil, impregnated with green herbs, as chamomile, alder, &c. require long boiling, to convey their virtues over into the oil.

By distillation with an alembic, and a large refrige-

ratory, the essential oils of vegetables are obtained. Water must be added to the materials, in sufficient quantity to prevent their burning; and they should be macerated or digested in that water a little time before distillation. The oil comes over with the water; and either swims on the top, or sinks to the bottom, according as it is specifically heavier or lighter than water.

Many of the essential oils being dear, it is a very common practice to adulterate or debase them several ways; viz. 1. with expressed oils; 2. with alcohol; and 3. with cheaper essential oils.

If an essential oil be adulterated with an expressed oil, it is easy to discover the fraud, by adding a little spirit of wine to a few drops of the suspected essential oil, and shaking them together; for the spirit will dissolve all the oil that is essential, and leave the expressed oil untouched.

If an essential oil be adulterated with alcohol, to discover the fraud, put a few drops of the oil into a glass of fair water; if the oil be adulterated with spirit, the water will immediately turn milky, and by continuing to shake the glass, the whole quantity of spirit will be absorbed by the water, and leave the oil pure at the top. If an essential oil be adulterated by a cheaper essential oil, like oil of turpentine, this fraud will always discover itself in time, by the real flavour being overpowered by the turpentine smell: but the ready way to detect the fraud is, to drench a piece of rag or paper in the oil, and hold it before the fire, when the grateful flavour of the plant will fly off, and leave the naked turpentine scent behind.

The animal oils or fats may be obtained by boiling and expression from certain animal substances; for the membranes which contain the fat, being chopped small, and set in a pan over the fire, become fit for the canvas bag, and by pressure afford a large quantity of fat.

We shall content ourselves here with enumerating the most usual kinds of oil, occurring in commerce.

*Oil of Castor*; see *Castor Oil*.

*Oil of Cinnamon*, is an oil or essence, extracted from cinnamon, and hitherto prepared by the Dutch, who were much in the habit of adulterating it. The cinnamon out of which this oil has been extracted, is said often to be mixed up with the good cinnamon.

*Oil of Cloves*; see *Cloves*.

*Oil of Linseed*; see *Linseed Oil*.

*Oil of Mace*; see *Oil of Nutmegs*.

*Oil of Neroli*; see *Oranges*.

*Oil of Nutmegs*, is an essential oil, obtained from the nutmeg, when distilled in water; and resembling in flavour the nutmeg itself. Rectified spirit extracts the whole virtue of the nutmeg by infusion, and elevates very little of it in distillation; hence the spirituous extract or the *spirit of nutmeg*, possesses the flavour of the spice in an eminent degree.

Nutmegs, when heated, yield to the press a considerable quantity of limpid yellow oil, which, on cooling, has the consistence of tallow, the colour of mace, and entirely the flavour of nutmegs. A pound of nutmegs commonly gives three ounces of oil. This oil is improperly called *oil of mace*. The best is brought from the East Indies, in stone jars. There is also an artificial composition of sebum, palm oil, &c. and a little genuine oil of nutmeg, which is usually called common oil of mace.

An oil is readily extracted from mace, by distillation with water: this is an essential, transparent, and more volatile and acrid oil than the essential oil of nutmegs.

*Oil of Olives*, is the oil obtained by pressure from the fruit of the olive tree, called *Olea Europea*. This tree is a native of the southern, warm parts of Europe, where it is cultivated in great quantities. It rises with an upright solid stem, branching numerously on every side, twenty or thirty feet high; spear-shaped,

stiff, opposite leaves, two or three inches long, and half an inch or more broad ; and at the axillas small clusters of white flowers, succeeded by oval fruit.

The oil is undoubtedly that part of the produce of olive-trees which is of the greatest value. The quality of it depends on the nature of the soil where the trees grow, on the kind of olive from which it is expressed, on the care which is taken in the gathering and pressing of the fruit, and likewise on the separation of the part to be extracted. Unripe olives give an intolerable bitterness to the oil : when they are over-ripe, the oil has a rancid unguinous taste : it is therefore of importance to choose the true point of maturity. When the situation is favourable, those species of olives are cultivated which yield fine oils ; otherwise they cultivate such trees as bear a great quantity of fruit, and they extract oil from it for the use of soaperies and lamps.

They gather the olives about the months of November or December. It is best to put them as soon as possible into baskets, or into bags made of wool or hair, and to press them immediately, in order to extract a fine oil. Those who make oil only for soaperies, let them remain in heaps for some time in their storehouses ; when afterwards pressed, they yield a much greater quantity of oil. Those even who extract oil to be used in food, sometimes allow them to ferment in heaps, that they may have more oil, but this is extremely hurtful to the quality, and the reason why fine oil is so very rare. In order to have the oil in its purity, it must be allowed to deposit its sediment, and then poured off into another vessel. The oil extracted from the pulp only of olives, is the most perfect which can be obtained, and will keep for several years ; but that which is extracted from the kernel, or from the nut, or from the whole olive, ground in the common way, in public mills, has always more or fewer defects, loses its limpidity in a certain time, and is very apt to become

rancid. After all, in the course of time, olive oil loses its qualities, becomes disagreeable to the taste and smell, diminishes in fluidity, and at last thickens considerably.

The refuse of the first pressing, when squeezed a second time, yields an oil, but thicker and less pure than the first. What remains after the second pressing, when mixed with a little water, and placed in a pan over the fire, produces by pressure a third oil, but of a very inferior quality.

Oil of olives is an ingredient in the composition of a great many balsams, ointments, plaisters, mollifying and relaxing liniments; but its chief use is for eating; and the inferior sorts are used for the preparation of wool.

The consumption of this oil is incredible: the southern parts of France, as also Candia, and particularly Italy and Sicily, yield the greatest quantities.

The provinces in the kingdom of Naples most abundant in oils are Bari, Otranto, Calabria, and Abruzzo. The produce, upon ten years' average, has been estimated at six hundred thousand salme; about six and a half salme making a tun of 252 gallons. The exportation of oil brings into Calabria-Ultra half a million of ducats annually. Gallipoli, a seaport town in the province of Otranto, is that place in the kingdom of Naples from which the greatest quantity of olive oil, and the best quality for the use of the British woollen manufactures, is exported. This trade is entirely in the hands of the merchants at Naples and Leghorn, particularly the former, who have their agents at Gallipoli, and by making advances to the poor cultivator, keep him constantly in their chains: so much so, that it would be difficult to purchase a cargo of Gallipoli oil at Gallipoli, and it always can be procured more reasonably at Naples. The Neapolitan contractors either purchase at a fixed price, or at the *prezzo della voce*, that is to say, the average price of the sales, made in the months of



November and December. The orders for the delivery of oil at Gallipoli are treated like bills of exchange, and have sometimes five or six indorsements. On buying oil, the seller will perhaps not deliver any of it out of his own cellars, but give orders upon others, and they upon others again, so that the buyers may have to receive it from a dozen different people. Oil therefore, at Gallipoli, never can be bought according to sample; but if not of a good merchantable quality, it can be refused. There is much jobbing carried on in this trade: frequently the Gallipoli agents sell, on their own account, the oil purchased for their principals, and when the orders for the delivery come upon them of a sudden, they must replace it at any price. A plentiful crop of olives, in the neighbourhood of Gallipoli, yields forty to fifty thousand salmes of oil.

Sicily oil is inferior to Calabria, and the latter to Gallipoli oil; so that Gallipoli oil is always worth about two pounds sterling per tun more than the best Calabria, and from three to five pounds more than the best Sicily oil. The reason is, that the Calabria and Gallipoli oils have less foot, and more colour and substance, than those of Sicily. This superior quality of the Gallipoli oil, may in some measure proceed from the nature of the soil; but it lays more particularly in a better management, in manufacturing and refining it. At Gallipoli, they keep their oil to settle and purify in large stone cisterns, fixed underground, and the quality of the stone used for that purpose, is said to be particularly adapted for retaining the heat, and promoting thereby the fermentation necessary for its refinement. In Calabria and Sicily it is kept in large earthen jars.

At Gallipoli, if the oil on delivery does not prove *lampante e bacille*, that is, bright and clear, the buyer has the right to refuse it. In Sicily, to prevent disputes, the contract ought to be made with the clause, *a leva manu*, viz. as soon as the top of a jar is taken

off with a ladle, and the oil appears in the least disturbed, the buyer may say, he will have no more of that jar.

The district of Dietro Marino produces the best oil in Calabria, in goodness very little inferior to that of Gallipoli.

Milazzo is the place which in Sicily produces the greatest quantity of oil; then comes Sciacca, then Cefalu, Tasa, Mistretta, Pettineo, and Santo Stefano. The oils coming from Milazzo and Sciacca are chiefly used for the soap manufactories; those from Pettineo and Mistretta are the best for eating; but the consumption of it is limited to Italy, as they have, without exception, like all oils produced in Naples and Sicily, a rank taste and smell. This country is entirely supplied with eating oil from Leghorn and Genoa, known under the denomination of Lucca and Florence salad oil.

Oil, abroad, should never be bought out of casks, as it is difficult to judge of the quality, and scarcely possible to draw it off without receiving some of the foot. To prevent leakage, it is best not to ship oil in cargoes from Italy, unless in autumn or winter. This article is sold in London, by the tun of 236 gallons, but pays freight and duty, at the rate of 252 gallons to the tun.

The best oil should be clear, of strong body, free from foot or sediment, of a perfectly sweet taste and smell, and a bright gold colour.

*Oil of Palm*; see *Palm Oil*.

*Oil of Petrol*; see *Petrol*.

*Oil of Rape*; see *Rape Oil*.

*Oil of sweet Almonds*, cold drawn, or without fire, is prepared various ways. Some peel the almonds before pounding them, others not; some warm them in lukewarm water, others in balneo mariæ; some only bruise them, others beat them into a paste. When pressed gently, and when all the unctuous and

fluid parts are expressed, they will yield a sweet oil, without any sediment.

*Oil of Turpentine.* Upon making turpentine, the sap which collects in a hole at the bottom of the tree is put into a basket. The part which runs through constitutes the turpentine, and the thicker matter which remains in the basket they put into a common alembic, adding a large quantity of water. They distil this as long as any oil is seen swimming upon the water. This oil, separated from the surface, is the common limpid essential oil, called spirit of turpentine. The remaining matter at the bottom of the still is common yellow *Resin*.

*Oil of Vitriol* is the common name given in trade to the vitriolic acid. It was formerly extracted by distillation from copperas, but is now solely procured from sulphur. This substance contains the vitriolic acid in such abundance, that as much as fourteen ounces of oil have been drawn from one pound of sulphur; and as the only method hitherto practised of decomposing sulphur is by burning it, and no process has as yet been fallen upon to condense all the steams of burning sulphur, it must contain a much larger quantity.

The difficulties here are, that sulphur cannot be burnt, but in an open vessel, and the stream of air, which is admitted to make it burn, also carries off the acid, which is emitted in the form of smoke. To avoid this, a method was contrived of burning sulphur in large glass globes, capable of containing an hogshead or more. The fume of the burning sulphur was then allowed to circulate, till it would condense into an acid liquor. A greater difficulty, however, now occurred; for though the sulphur burned very well; its steams never condensed. For this purpose nitre was advantageously used. This consumes a very large quantity of the phlogiston contained in sulphur, and renders the acid easily condensable: but it is plain, that few of the fumes, comparatively speak-

ing, are thus deprived of the inflammable principle; for the vessel in which the sulphur and nitre are burnt, remains filled with a volatile and most suffocating fume, which extinguishes flame, and issues in such quantity, as to render it highly dangerous to stay near the place.

The proportion of nitre to the sulphur used in the large oil of vitriol works, are not known, every thing being kept as secret as possible by the proprietors. It seems that an ounce and a half, or two ounces, may be advantageously used to a pound of sulphur.

A very great improvement in the art of making oil of vitriol, lies in the using lead vessels instead of glass globes; the globe being so apt to be broken. The leaden vessels, according to the best accounts we have been able to procure, are cubes of about three feet, having on one side a door about six inches wide. The mixture of sulphur and nitre is placed in the hollow of a cube, in an earthen saucer, set on a stand made of the same materials. The quantity which can be consumed at once in such a vessel is about two ounces. The sulphur being kindled, the door is to be close shut, and the whole let alone for two hours. In that time the fumes will be condensed. The door is then to be opened, and the operator must immediately retire, to escape the suffocating fumes which issue from the vessel. It will be an hour before he can safely return and introduce another quantity of materials, which are to be treated precisely in the same manner.

Where oil of vitriol is made in large quantities, the slowness of the operation requires a great number of lead vessels, and constant attendance day and night. Hence the making of this acid is very expensive. The apparatus for a large work usually costs fifteen hundred pounds sterling.

OLIBANUM; see FRANKINCENSE.

**OLIVES.** (F. *Olives*; G. *Oliven*; I. *Ulive, Olive*; S. *Aceitunas*; P. *Azeitonas*; DA. *Oliver*; Sw. *Oliver*; POL. *Oliwki*; R. *Oliwkü*; L. *Olivæ*.)

Olives are the fruit of the *Olea Europea*, or common olive tree, cultivated in great quantities in the south of France, Italy, Spain, and Portugal. Olives have an acid, bitter, extremely disagreeable taste: pickled, as we receive them from abroad, they prove less disagreeable. The Lucca olives, which are smaller than the others, have the weakest taste; the Provence olives, being of a middling size, are generally the most esteemed. The olives of Reggio are large and pulpy, and much admired by those who relish a high flavour; but to those who have been accustomed only to eat the Provence sort, they appear too strong.

When olives are intended for preservation, they are gathered before they are ripe. The art of preparing them consists in removing their bitterness, in preserving them green, and in impregnating them with a brine of aromatic sea-salt, which gives them an agreeable taste. For this purpose different methods are employed. Formerly they used a mixture of a pound of quick-lime with six pounds of newly sifted wood-ashes; but of late, instead of the ashes, they employ nothing but a lye.

Olives, perfectly ripe, are of a dark red colour. They are then eaten without any preparation, excepting only a seasoning of pepper, salt, and oil; for they are extremely tart, bitter, and corrosive.

The quantity of olives used for eating, when ripe, and for preserving, is but trifling, if compared to that consumed for the manufactory of olive oil.

**ONIONS.** (F. *Oignons*; G. *Zwiebel*; D. *Uyen, Ajuin*; I. *Cipolla*; S. *Cebolla*; P. *Cebola*; DA. *Rödlög*; Sw. *Rödlök*; POL. *Cebula*; R. *Luk*; L. *Allium cepa*.)

The most reputed sorts of onions are, the Stras-

burgh, the Spanish, and the Egyptian. It is not known from whence this plant was first brought to Europe; but certain it is, that it was known in Egypt two thousand years before Christ. Dr. Hasselquist much celebrates the sweetness of the Egyptian onion. The Spanish onion is most famous in this country, and imported in quantities.

ONYX. (G. *Onyx*; Sw. *Onyx*; F. *Onice, Onix*; S. *Onique*; P. *Onix*; L. *Onyx*.)

One of the semi-pellucid gems, with various coloured zones, but none red, being composed of crystal, debased by a small admixture of earth, and made up either of a number of small flat pieces, or of a series of coats, surrounding a central nucleus, and separated from each other by veins of a different colour, resembling zones or belts. There are four species of this gem, 1st. a blueish white one, with broad white zones; 2d. a very pure onyx, with broad white veins; 3d. the jasp-onyx, or horny onyx, with green zones; 4th. the brown onyx, with blueish white zones. It is found on the shores of the East Indies, New Spain, and other parts of America. The oriental are the most beautiful of all.

OPAL is one of the rarest gems to be met with. One described in Frederick Hasselquist's Travels in the Levant, was of the size of a hazel nut, in the form of a half globe.

If held horizontally, it had a very fine olive colour; but if held perpendicularly between the eye and the light, it had the colour of the finest ruby.

The opal was more common among the antients than it is at present. The above-described opal had probably lain concealed in the ruins of Alexandria; and there is scarcely any kind of stone accounted precious by the antients, which is not to be found in the ruins of Alexandria and Old Cairo. Tavernier

says, the opal is now to be found only in a mine in Hungary.

**OPIUM** is an inspissated juice, partly of the resinous, and partly of the gummy kind, brought to us in cakes, from eight ounces to a pound weight. It is very heavy, of a dense texture, and not perfectly dry; but in general easily receives an impression from the finger: its colour is of a brownish yellow, so very dark and dusky, that at first it appears black. It has a dead and faint smell, and its taste is very bitter and acrid. That kind is most in esteem which is rather soft, and yields to the touch, is inflammable, of a blackish brown colour, and has a strong foetid smell. Care is also to be taken that there be no dirty or stony matter in it.

Opium is the juice of the papaver somniferum, with which the fields of Asia Minor and Bahar in India are in many places sown, as ours are with corn. When the heads are near ripening, they wound them with an instrument that makes at once five long cuts, and out of these wounds the opium flows. After they have collected the opium, they moisten it with a small quantity of water, or honey, and work it a long time upon a flat, hard, and smooth board, with a thick and strong instrument of the same wood, till it becomes of the consistence of pitch; and then form it into cakes or rolls for sale.

The meconium, or common opium, is prepared in the East Indies, by pressing the poppy heads that have been already cut. The juice which comes out of them, mixed with the least beautiful of the other drops, is kneaded with water, and made into cakes, which are sent to Europe. The finer East India opium not being brought to Europe, may account for the superior quality of the Turkey opium. A very considerable trade in this article is carried on at Patna, on the river Ganges.

An excessive fondness for opium prevails in all

parts of Turkey and the East Indies. In vain have the laws of China condemned to the flames, every vessel that imports, and every house that receives it; the consumption is not less considerable. It is still greater at Malacca, Borneo, the Moluccas, Java, Macassar, Sumatra, &c. These islanders smoke it with their tobacco: those who are desirous of attempting some desperate action, intoxicate themselves with this smoke.

Opium at present is in great esteem, and is one of the most valuable of all the simple medicines. It is the most sovereign remedy for easing pain, and procuring sleep. According to the different manner of preparing it, and the doses in which it is given, it stupifies, excites agreeable ideas, or occasions madness.

OPOBALSAMUM; see BALSAM OF GILEAD.

OPOPONAX; see GUM OPOPONAX.

ORANGE BUDS, are small dried oranges, which, from want of nourishment, blights, or other causes, fall from the trees before coming to perfection; as is the case with other fruit. They come mostly from Italy, and are used by distillers and others, to give a flavour to various kinds of spirits and liquids.

ORANGES. (F. *Oranges*; G. *Pomeranzen*; D. *Oranjen*; I. *Melarence*; S. *Naranjas*; P. *Laranjas*; DA. *Pomerantser*; Sw. *Pomeranser*; POL. *Pomeranczy*; R. *Pomeranczu*; L. *Aurantia mala*.)

Oranges are the fruit of the citrus aurantium, or orange tree. This tree has an upright smooth trunk, divided upwards into a branchy regular head, from five to ten and twelve feet high; oval, spear-shaped, entire leaves, having winged footstalks, and numerous white flowers at the sides of the branches, succeeded by globular fruit, compressed at both ends. The



most noted varieties are: 1. The Seville orange, being a large, rough rinded, and sour fruit, of excellent quality for economical uses. 2. The China orange, a smooth, thin rinded sweet fruit, of which there are several varieties. 3 The great Shaddock orange, a very large fruit, having a reddish pulp. It derives the name of Shaddock from one of that name, who first brought it from the East Indies. 4. The forbidden fruit tree bears a fruit, which, when ripe, is larger and longer than the biggest orange. It has somewhat the taste of a Shaddock, but far exceeds that, as well as the best orange, in its delicious taste and flavour. 5. The horned orange tree produces fruit which divide, and the rind runs out into divisions like horns. 6. The hermaphrodite orange bears fruit partly like an orange, and partly like a citron. 7. The dwarf orange tree, or nutmeg orange, bears a very small fruit.

The flowers of all the species and varieties of citrus appear principally in May or June; the fruit continue setting in June and July, and ripen the year following.

Great quantities of Seville oranges are consumed in Great Britain and Ireland, which are chiefly brought from Spain and Portugal.

Reggio is said to be the spot where the culture of oranges was first attempted in Italy, and from whence it was extended over the country.

The exports from Charlestown, South Carolina, in the year 1747 comprehended 296,000 oranges, and in 1761, 161,000. Whence it appears, that this fruit is as much an established commodity for their export as it is at Lisbon or Seville. As oranges come to great perfection in the West-India islands, it is a pity their culture is not more attended to in Jamaica and other of our colonies.

Oranges are reckoned a very efficacious antiscorbutic medicine. The peel of the orange contains a considerable warmth, and abounds in essential oil;

its flavour is also less perishable than that of lemons, and it serves as an ingredient in many medicinal preparations. The flowers of the orange tree have been, for some time past, in great esteem as a perfume. They are highly odoriferous, and of a somewhat warm and bitter taste. They yield their flavour by infusion to rectified spirit, and in distillation both to spirit and water. An oil distilled from the flowers is brought from Italy, under the name of *oleum*, or *essentia neroli*.

ORCHELLA, *Archilla*. (F. *Orseille*; G. *Orselje*; D. *Orseille*, *Orcel*, *Orchillie*; I. *Oricello*, *Orcella*, *Recella*, *Raspa*; S. *Orchilla*; P. *Orsella*, *Orzella*; DA. *Orselje*, *Farvemos*; Sw. *Orsilja*; POL. *Mech farbierski*; R. *Arsel*; L. *Rocella*.)

The lichen rocella, or orchella weed, is a whitish moss, yielding a rich purple tincture, used for dyeing. It is found in abundance in several of the islands of the Archipelago, and also in some of those near the African coast, particularly the Canary and Cape de Verd islands. It grows partly in single, partly in double stems, to the height of about two inches, of a light or sometimes dark gray.

As early as the times of Pliny, it would appear that this plant was used, for giving the ground to dye purple, as the phycos thalasion or pontion, of which he speaks, is probably our orchella.

However this be, the art of dying with orchella was discovered in the Levant about the year 1300, by a Florentine merchant, of the family of Oricellarii or Rucellai, who happening one day to make water on a plant, of which there was great abundance, observed that it became extraordinarily red, and having made several experiments on the herb, and finding it proper to die wool purple, he sent some of it to Florence, where it became of great utility in the cloth manufactures.

Certain it is, from a variety of documents, that the

art of dying in oricello was known at Florence in the commencement of the fourteenth century, from whence it spread over the rest of Europe.

The Italians alone, for some time, furnished all Europe with orchella from the Levant. But upon the Canary islands being re-discovered, about the end of the fourteenth or the beginning of the fifteenth century, it was principally imported from thence.

The growth of orchella in the Canary islands is more beautiful and in greater abundance than in the Levant; and that of the Cape de Verd islands again appears larger, richer, and longer than that coming from the Canaries; which may be owing to its not being collected every year.

This moss is imported to us as it is gathered, but to prepare it for the purpose of dyeing, it is ground betwixt stones, moistened occasionally with spirits of wine, and so made up in a paste, called by the French *orseille en pate*; and many, instead of keeping the paste in a moist state with wine, as they ought, suffer it to dry, in order to save a little dirty work. It then has the appearance of a dark violet-coloured earth, with here and there some white spots in it.

The Dutch are the inventors of a dye called lacmus, or *orseille en pierre*, which seems to be an adulterated kind of orchella paste.

There is also a kind of moss, different from the archilla, and known by the name of *orseille de terre*, *orseille d' Auvergne*, which is used for the like purpose, but it contains fewer and weaker colouring particles.

The orchella paste is rarely used as a dyeing material by itself, on account of its being too dear, and its beauty too perishable. It is chiefly employed to give a bloom to other colours, as pinks, &c.

Linnæus, in the Swedish Transactions for the year 1748, mentions, that the true archil moss is to be found on the western coasts of England.

This dye has been for a considerable time past prepared in Scotland, from a species found in the Highlands.

**ORPIMENT.** (F. *Orpiment, Orpin*; G. *Operment*; D. *Operment*; I. *Orpimento*; S. *Oropimente*; P. *Ouropimente*; DA. *Operment*; Sw. *Operment*; POL. *Aurypigment, Zlotokost*; R. *Awripigment, Opermente*; L. *Auripigmentum*.)

Orpiment is a semi-metal, usually found in copper mines. Its colour is always yellow, intermixed with shades of other colours, as green, red, orange, and others.

What is usually called red orpiment, or red arsenic, is only the yellow orpiment, heated to a great degree, and put into a crucible, with oil of hempseed, olives, or nuts.

Painters, farriers, and others, make a great consumption of this mineral; but as it is found a violent corrosive, it should be used with great precaution.

White orpiment, is the same with arsenic.

**ORRIS, or IREOS ROOT.** (G. *Vedlemoursel*; D. *Violwukel*; DA. *Violsrod*; F. *Iris de Florence*; I *Ireos*; S. *Raiz de L'ire de Florenzia*.)

A sweet-scented powder produced by pulverising a root of the same name: this root is white, about the thickness of a man's thumb, of an oblong form, and is brought to us dry from Florence, in the neighbourhood of which city it grows spontaneously: it should be chosen plump, heavy, compact, clean, very white, and of a sweet, pleasing, violet-like odour.

**OSTRICH'S DOWN and FEATHERS;** see **DOWN and FEATHERS.**

**OYSTERS.** (F. *Huitres*; G. *Austern*; D. *Oesters*; I. *Ostriche*; S. *Ostras*; P. *Ostrass*; DA. *Osters*; Sw. *Ostron*; POL. *Ostrygi*; R. *Ustrizu*; L. *Ostrea*.)

The oyster is a small, flat, shell fish, the fishery of which is carried on in a very considerable manner, in several places along the British and Irish coasts; but more particularly in Wales, and the eastern part of England; from whence they are sent to market, either fresh, or pickled in barrels. The Colchester oysters are particularly famous.

They also take oysters on the coast of France, particularly Concale Bay; but they are so very poor, that they bring them over to England, to be fattened. The Dutch have likewise a few oysters; but they, as well as the French, are obliged to have recourse to the English, for oysters of any delicacy.

Oysters are in season, from the month of August all autumn and winter, till March, when they begin to spawn.

## P.

**PALM-OIL.** (F. *Huile de palme*, *Huile de Senegal*; G. *Palmöl*; D. *Palm olie*; I. *Olio di palma*; S. *Aceite de palma*; P. *Oleo de palma*; DA. *Palmeolie*; Sw. *Palm olja*; L. *Oleum palmæ verum*.)

This oil, is said to be the produce of the *palma spinosa major*; the fruit or nuts of which are full of oil. It is obtained by boiling them in water, when the oleaginous particles rise to the surface, and are skimmed off, and strained for use.

This tree grows in most parts of Asia, Africa, and America. The negroes are fond of the oil, which sometimes makes an ingredient in their food. It is

very efficacious by way of embrocation, for strains, or to discuss rheumatic aches, &c.

PASTEL; see KERMES.

PEARL ASHES. (F. *Perleasse*, *Cendres de Perle*; G. *Perlasche*; D. *Paerelüsck*; I. *Cenere di Perla*; S. *Cenizas de Perlas*; P. *Cinza de Perolas*; DA. *Perlaske*; Sw. *Perlaska*.)

Pearl ashes, are a kind of fixed alkaline salt. It is prepared by mixing the ashes of burnt wood with water, evaporating the clear ley, and calcining them for a considerable time in an oven moderately hot. The goodness of pearl ashes is distinguished by their strong body, and an uniform white appearance: and their value decreases, in proportion to the blue cast they have: blue, then, are the most inferior sort of pearl ashes. This article being subject to an adulteration, by the addition of common salt, the fraud can be discovered, by taking a small quantity of the suspected matter, and letting it lay to soften in the air, and then putting it in a shovel over the fire; if it contains any common salt, a crackling and kind of slight explosion will take place, when the salt grows hot.

Pearl ashes are chiefly prepared in Russia, Poland, Hungary, and North America; they are much used in the manufacture of glass, also for bleaching, &c.

The patent dated 2d April, 1791, granted to George Glenny, of Bromley-hill, in the county of Kent, Esq. for his method of obtaining from wood ashes, a much greater quantity than usual, of pearl and pot ashes, is as follows: that the common ashes produced by burning wood, must be completely calcined in a furnace; and if a small proportion of lime be sifted among the wood ashes, before they are put in the calcining furnace, it will prevent them from vitrifying; but if they are at times stirred with an iron rake,

or other proper instrument, during the process of calcination, that will answer the purpose of adding the lime; and when the ashes are calcined into a fine powder, the usual method may be pursued, but it is better to boil them in large vessels, especially in frosty weather.

PEARLS. (F. *Perles*; G. *Perlen*; D. *Paarlen*; I. *Perle*; S. *Perlas*; P. *Perolas*; DA. *Perler*; Sw. *Parlor*; POL. *Perly*; R. *Shemtschug*; L. *Margaritæ*.)

Pearls are a hard, white, shining, usually roundish body, found in a testaceous fish resembling an oyster.

The fish in which these are usually produced, is the East Indian pearl oyster, as it is commonly called. Besides this, the common oyster, the muscle, and several other shell-fish, produce a kind of pearl.

All pearls are formed of the matter of the shell, and consist of a number of coats, spread with perfect regularity, one over another, like the several coats of an onion. They are said to proceed only from a distemper in the fish, analogous to the bezoars, and other stony concretions in several animals of other kinds.

Though these ornaments are met with in all parts of the globe, the most esteemed have always been those of Asia, and the east coast of Africa. In the kingdom of Madura, which lies on the east of Malabar, there are many pearl fisheries. Tutukurin or Tutucorin is the principal, if not the only city, on the fishery coast. At the time the Portuguese were masters in these parts, the pearl fishery in the Straits betwixt the island of Ceylon and the continent, was styled, by way of excellence, the fishery, and very deservedly; for though some prefer the pearls taken near the island of Baharen, in the Persian Gulf, and those likewise found on the coast of China at Hai-

nan, yet the produce of these fisheries was very seldom superior to that alluded to. At present the pearl fishery, carried on in the strait between Ceylon and the Continent is so much exhausted, that it takes generally five or six years before a sufficient quantity of pearls is to be found. The pearls taken at Baharen, though not so white as those of China and Ceylon, are much larger than those of the latter place, and much more regularly shaped than the former. They are of a yellowish cast, but preserve their golden hue, whereas the whiter kind lose much of their lustre by keeping; particularly in a hot climate. The shell of both these species, which is known by the name of *Mother of Pearl*, is used for various purposes. There are a variety of rivers in the Eastern Tartary, considerable for pearl-fishery, though defective in shape and colour. Many rivulets in Livonia produce pearls, almost equal in size to the oriental ones. In Scotland, especially to the northward, about Perth, as far as Loch-Tay, in all the rivers running from lakes, there are found muscles that have pearls of more than ordinary merit, though seldom of large size; but this fishery is at present exhausted.

The American pearl fisheries are all in the gulph of Mexico, along the coast of Terra Firma. The greatest quantity, and the finest, both with regard to weight and water, are found about the island of Margarites. There are also some small pearls in the South Sea, particularly in the Bay of Panama: but they are very inconsiderable. The West Indians knew the value of their pearls before the discovery of America; and when the Spaniards arrived there, they found great quantities stored up; but they were almost all imperfect, and their water yellow and smoky, because they used fire in opening the fish.

There are two seasons for pearl fishing in the East Indies: the first is in March and April, and the last in August and September; and the more rain there falls in the year, the more plentiful are these fisheries.



As the oysters are usually firmly fastened to the rocks, the divers commonly take iron rakes down in the sea to loosen them; they also carry down with them a large net, in the manner of a sack, tied to the neck by a long cord, the other end of which is fastened to the side of the bark. This net is to hold the oysters gathered from the rock, and the cord is to pull up the diver, when the bag is full, or when he wants air. He sometimes precipitates himself sixty feet under the water, and whatever depth he be, the light is so great, that he easily sees whatever passes in the sea. To his great consternation he sometimes perceives monstrous fishes, from which all his address, in mudding the water, &c. will not always save him, and this is one of the greatest dangers of the fishery. The best divers will keep under water near half an hour, and the rest do not stay less than a quarter. During this time, they hold their breath, without the use of oils or any other liquors. When they find themselves straitened, they pull the rope to be hove up in the air. On the shore they unload their barks, and lay the pearl fish in an infinite number of little pits, dug in the sand, raising heaps of sand over them; and in this condition they are left, till the rain, wind, and sun, have obliged them to open, which soon kills them; upon this the flesh rots and dries, and the pearls thus disengaged, fall into the pit on their taking out the shell. After clearing the pits, and cleaning and drying the pearls, they are passed through a kind of sieve, according to their sizes.

Aleppo is the staple place of the East Indian pearls; from thence they are transported to Leghorn, and then circulated through Europe.

PEASE. (F. *Pois*; G. *Erbsen*; D. *Erwten*; I. *Piselli*, *Bisi*, *Erbione*; S. *Pesoles*, *Guisantes*; P. *Evilhas*, *Hervilhas*; DA. *Aerter*; SW. *Aerter*; POL. *Groch*; R. *Goroch*; L. *Pisæ*.)

Pease are a kind of pulse, of several sorts; as white, yellow, green, and gray. They are also divided into boiling and hog pease. The former kind is proper for the food of man, and particularly serviceable as sea provision.

PEPPER. (F. *Poivre*; G. *Pfeffer*; D. *Peper*; I. *Pepe*; S. *Pimienta*; P. *Pimenta*; DA. *Peber*; SW. *Peppar*; POL. *Pieprz*; R. *Perez*; L. *Piper*.)

Pepper is an aromatic berry of a hot dry quality, chiefly used in seasoning. There are three kinds of pepper, at present used in the shops, the black, the white, and the long pepper.

*Black pepper* is the fruit of the piper siriboa. This is a shrub rising into a stem, which requires a tree or prop to support it. The leaves, which have a strong smell and pungent taste, are of an oval shape, though terminating in a point. From the flower buds, which are white, are produced small berries, commonly gathered in October, and exposed to the sun for seven or eight days. This fruit, which was green at first, and afterwards red, assumes the appearance which black pepper has, when it comes to us. The largest, heaviest, and least shrivelled, is the best.

The pepper plant flourishes in the islands of Java, Sumatra, and Ceylon; and more particularly on the Malabar coast. It is planted from shoots, which produce no fruit till the end of three years, but bear so plentifully the three succeeding years, that some plants yield from six to seven pounds of pepper. The shrub then declines so fast, that in twelve years time it ceases bearing.

The common *white pepper* is factitious, being prepared from the black, in the following manner: they

steep this in sea-water, exposed to the heat of the sun for several days, till the rind or outer bark loosens; they then take it out, and when it is half dry, rub it till the rind falls off; then they dry the white fruit, and the remains of the rind blow off like chaff. A great deal of the heat of the pepper is taken off by this process, so that the white kind is more fit for many purposes than the black. There is however a sort of native white pepper produced on a species of the same plant, which is much better than the factitious.

The *long pepper*, is a dried fruit of an inch, or an inch and a half long, and about the thickness of a large goose-quill: it is of a brownish gray colour, cylindrical in figure, and said to be produced on a plant of the same genus.

The people of the East Indies esteem pepper as a stomachic, and drink a strong infusion of it in water, by way of creating an appetite. They have also a way of making a fiery spirit, of fermented fresh pepper with water, which they use for the same purposes.

The piper amalgo or black pepper, and the piper inequale or long pepper of Jamaica, are indigenous. The whole plant of the former has the exact taste of the East India black pepper; the fruit of the latter is similar to the East India long pepper. Both these plants, may perhaps, hereafter be deemed worthy of attention.

Pepper that is sold ground, is very apt to be sophisticated; the black with burnt crusts of bread, &c. the white with beaten rice.

PERNAMBUCO WOOD; see BRAZIL WOOD.

PERUVIAN BARK. (F. *Quinquina*; G. *Chinarinde*; D. *Kina*, *Quinquina*; I. *China*, *Chinacchina*; S. *Quina*, *Quina-Quina*, *Corteza de Loja*; P. *Quina*, *Quinquina*; D.A. *Kina*, *China*, *Chinabark*; Sw. *Feberbark*, *China*; POL. *Kwinkwinna*; R. *China*, *Chinchina*; L. *Quinquina*, *China*, *Cortex Peruvianus*.)

Bark is the produce of a tree called cinchona. Linnæus describes two species: first the corymbifera, corymbbearing, or white Peruvian bark, with oblong lanceolate leaves, and axillary corymbs; and secondly, the officinalis, or coloured Peruvian bark, with elliptic leaves, downy underneath, and the leaves of the corolla woolly. Both species are natives of Peru, where the trees attain the height of fifteen to twenty feet. The former particularly, abounds in the hilly parts of Quito, growing promiscuously in the forests, and is spontaneously propagated from its seeds. Both sorts have also been found in the province of Santa Fe.

The bark has some odour, to most people not unpleasant, and very perceptible in the distilled water, in which floating globules, like essential oil, have been observed. Its taste is bitter and astringent, accompanied with a degree of pungency, and leaving a considerably lasting impression on the tongue.

According to some, the virtue of the bark, was first discovered by a Peruvian, who in his fits of the ague, taking the habit of seizing and sucking a branch of the tree, found himself thereby relieved, and at last cured. About the year 1640, the lady of the Spanish Viceroy, the Comitessa del Cinchon, was cured by the bark, which has therefore been called cortex or pulvis Comitessæ Cinchona, Chinachina, or Chinchina, Kinakina or Kinikina, Quinaquina or Quinquina; and from the interest which the Cardinal de Lugo and the Jesuit fathers took in its distribution, it

has been called cortex or pulvis Cardinalis de Lugo, Jesuiticus, Patrum, &c.

On its first introduction into Europe, it was reprobated by many eminent physicians; and at different periods long after, it was considered a dangerous remedy; but its character in process of time, became very universally established. For a number of years, the bark which is rolled up into short thick quills, with a rough coat, and a bright cinnamon colour in the inside, which broke brittle, and was sound, had an aromatic flavor, a bitterish astringent taste, with a degree of aromatic warmth, was esteemed the best; though some esteemed the large pieces as of equal goodness.

During the time of the war before last, in the year 1779, the Hussar frigate took a Spanish ship, loaded principally with Peruvian bark, which was much larger, thicker, and of a deeper reddish colour, than the bark in common use. Soon after it was brought to London, it was tried in St. Bartholomew's, and other hospitals about town. In July, 1782, Dr. Wm. Saunders published an account of this red bark; in which he says, that the small quill bark used in England, is either the bark of young trees, or of the twigs or branches of the old ones; and that the large bark, called the red bark, from its deep colour, is the bark of the trunk of the old trees: and he mentions, as Mr. Arnot, who himself gathered the bark from the trees in Peru; and Mons. Condamine, that taking the bark from an old tree, effectually kills it; but that most of the young trees which are barked, recover and continue healthy; and that for these reasons, the Spaniards now barked the younger trees for foreign markets, though they still imported into Spain, some of the bark of the old trees, which they esteemed much more efficacious, than what was got from the young. Dr. Saunders himself thinks, that it is not only stronger and more resinous, but likewise more efficacious and certain in its effects, than the common

bark, and had cured many agues, after the other had failed.

The pale bark is brought to us in pieces of different sizes, either flat or quilled, and the powder is rather of a lighter colour than that of cinnamon. The red is generally in much larger, thicker, flattish pieces, but sometimes also in the form of quills, and its powder is reddish, like that of Armenian bole. As already observed, it is much more resinous, and possesses the sensible qualities of the cinchona in a much higher degree than the other sorts. The red bark is heavy, firm, sound, and dry; friable between the teeth, does not separate into fibres; and breaks, not shivery, but short, close, and smooth. It consists of three layers; the outer is thin, rugged, of a whitish brown colour, but frequently covered with mossy matter: the middle is thicker, more compact, darker coloured, very resinous, brittle, and yields first to the pestle: the inmost is more woody, fibrous, and of a brighter red.

The Peruvian bark is prescribed for many diseases, chiefly as a powerful astringent, tonic, and antiseptic.

**PETROL, OIL OF PETRE, ROCK OIL.** (F. *Petrole*; G. *Steinöl*; D. *Steenöli*; I. *Petroleo*; DA. *Steenolje*; Sw. *Stenolja*; POL. *Skalny olej*; R. *Kamennoe masslo*; L. *Petroleum*.)

Petrol is a mineral oil, supposed to issue out of the clefts of rocks, and found floating on the waters of certain springs. It differs by its liquidity only from bitumens, like esphattum, jet, &c. Hitherto there has been but little Petrol found, except in hot countries, as Persia, the southern provinces of France, and the Duchy of Modena in Italy.

The naphta, which is either a liquid, or at least a very soft bitumen, is much the same with petrol.

**PILCHARDS** are fish, which have a general like-

ness to the herring, but differ in some particulars very essentially. The body of the pilchard is less compressed than that of the herring, being thicker and rounder: the nose is shorter in proportion, and turns up, the under jaw is also shorter. The dorsal fin of the pilchard is placed exactly in the centre of gravity, so that when taken up by it, the body preserves an equilibrium; whereas that of the herring dips at the head. The pilchard in general, is less than the herring, but it is fatter, or more full of oil.

The pilchard appears in vast shoals off the Cornish coasts, about the middle of July, disappearing the beginning of winter. Their winter retreat and their motives for migrating are the same with those of the herring. The approach of the pilchard is known by much the same signs as those that indicate the arrival of the herring. Persons called in Cornwall huers are placed in the cliffs to point out to the boats stationed off the land the course of the fish.

The emoluments that accrue to the county of Cornwall by the pilchard fishery are very considerable. But a small part of the pilchards, taken here, are consumed in the county, notwithstanding they are very delicious eating. The greatest part are salted, and placed together in large heaps, where they lie for several days, under a pressure of large stone weights, by which means the fat and oil are drained from them in large quantities, into proper vessels; then they pickle and press them into cases for exportation. Thousands are employed in catching and curing the fish, and the fishermen and merchants make large gains in sending them to Italy, Spain, and France. The poor are fed with the offals of the captures, and the land is manured with the refuse of the fish and fat. A considerable quantity of fish is also annually used for making pilchard-oil.

The number of Pilchards exported yearly from the four ports of Fowey, Falmouth, Penzance, and St.

Ives, according to an average of ten years, from 1747 to 1756 was, from

Fowey	-	-	-	1,732	hhds.
Falmouth	-	-	-	14,631 $\frac{2}{3}$	ditto
Penzance and Mountsbay	-	-	-	12,149 $\frac{1}{3}$	ditto
St. Ives	-	-	-	1,282	ditto

Total 29,795 hhds.

PIMENTO, ALLSPICE. (F. *Piment*; G. *Pimento*, *Jamaica pfeffer*; D. *Piment*, *Jamaica peper*; I. *Pepe garofanato*; S. *Pimienta de Jamaica*; P. *Amomo*, *Pimenta da Jamaica*; DA. *Piment*, *Allehaande*; Sw. *Kryddpeppar*; POL. *Pieprz z Jamaiki*; R. *Anglinskoi perez*; L. *Piper Jamaicaense*.)

The pimento, allspice, or Jamaica pepper tree, *myrtus pimenta*, is a native of New Spain, and the West-India islands. In Jamaica it grows very plentifully, and delights in a hilly situation. It grows above thirty feet in height, and two in circumference, is very straight, and covered with a grayish, smooth, and shining bark. Its leaves, which have a pleasant smell, resemble in form and disposition those of the laurel; and the branches in June, July, and August, put forth clusters of flowers, entirely similar to those of the common myrtle.

The berries are generally gathered in July, while yet green; for if they are suffered to remain till full ripe, they will not cure. They are when ripe of a dark purple colour, and full of a sweet pulp, which the birds devour greedily, and muting the seeds afterwards, propagate these trees in all parts of the woods.

When gathered, they are laid on cloths, spread over terraced floors. During the first and second day, they are turned often, that the whole may be more exposed to the sun, but when they begin to dry, they are frequently winnowed, still exposing them to the



sun all day, and removing them under covers every evening, till they are sufficiently dried, which happens in ten or twelve days, and is known by the darkness of their complexion, and the rattling of the seeds; they appear at this time wrinkled, and have changed from green to a very dark brown; and in this state, being ready for the market, they are stowed in bags and casks. Some planters kiln-dry them with great success, and it seems indeed a most eligible method, where, from the abundance of the crop, dispatch and security against rain are very essential.

As there is so great an affinity between this and the true clove, it has been proposed as worthy of trial, if the fruit, when first formed, or the flowers picked off the tree, and dried, might not answer the same purpose as the Asiatic. The more odoriferous and small the berries are, the better they are reckoned. The leaves and bark of the tree, are full of aromatic inflammable particles, for which reason the growers are extremely cautious, not to suffer any fire to be made near the walks, for if it once should catch the trees, they would consume with great fury. The berries have a resemblance in smell and taste to cloves, juniper berries, cinnamon, and pepper, or rather a peculiar mixture, somewhat akin to them all; whence their name of allspice.

Pimento is chiefly imported into Britain from Jamaica, where it is one of the staple articles. That growing in the Spanish dominions, is of a larger berry, weaker aromatic flavor, and consequently inferior in quality. The quantity exported from Jamaica, may be estimated on an average, at two millions of pounds annually.

PINCHBECK; see COPPER.

PISTACIA NUTS. (F. *Pistaches*; G. *Pistazien*, *Pistaschen*; D. *Pistasjes*; I. *Pistacchi*, *Fastucchi*; S. *Alfocigos*; P. *Pistacias*, *Fisticos*; DA. *Pistacier*, *Pistaser*; SW. *Pistacier*; POL. *Pistacye*; L. *Pistaciæ*.)

Pistacia nuts are the fruit of the pistacia terebinthus. This tree grows naturally in Arabia, Persia, and Syria, also in Sicily, whence the nuts are annually brought to us. The fruit loses much of its beauty by drying, but improves perhaps in flavor. The tree when laden with clusters of the ripe smooth nuts, of a beautiful palish red colour, makes a fine appearance. It seldom exceeds thirty feet in height, and is often not more than twenty; the trunk, which is proportionally short, is about three or three feet and a half in circumference. Some of these trees have male, and others female flowers, and some both male and female on the same tree. The female flowers come out in clusters from the sides of the branches; they have no petals, but a large oval germen, supporting three reflexed styles; and are succeeded by oval nuts. These nuts are moderately large, containing a kernel of a pale greenish colour, covered with an outer husk of different colours, from almost white to a red. They have a pleasant, sweet, unctuous taste, resembling that of almonds; and they abound with a sweet and well tasted oil, which they yield in great abundance, on being pressed after bruising them. They are wholesome and nutritive, and in medicine are classed amongst the analeptics and restoratives.

PIT-COAL, STONE-COAL. (F. *Charbons de terre*; G. *Steinkohlen*; D. *Steenkoolen*; I. *Carboni fossili*; S. *Carbones de tierra*, *Carbones de piedra*; P. *Carvoes de terra ou de pedra*; DA. *Steenkull*; Sw. *Stenkol*; R. *Ugolje kamennoe*; L. *Lithanthrax*.)

Pit-coal is a black, solid, compact, brittle, and inflammable mass, of moderate hardness, lamellated structure, more or less shining, but seldom capable of a good polish, and does not melt when heated. It is commonly used for fuel, and according to Kirwan, consists of petrol or asphaltum, intimately mixed with a small portion of earth, chiefly argillaceous, and frequently with pyrites.

The inland coal trade, that is, carrying coals from Newcastle, Sunderland, Blith, and other adjacent places, in the North of England, as also from the Frith of Edinburgh, and other neighbouring parts to the city of London, and the intermediate port towns, as well as to the North of Edinburgh and Newcastle, and up the Channel as high as Portsmouth west, employs abundance of shipping and seamen; insomuch, that in a time of urgent necessity, the coal navigation alone, has been able to supply the government with a body of seamen for the royal navy, able to man a considerable fleet, at a very short notice.

The produce of coals exported, which amounts to a very considerable sum annually, besides being profitable to the owners, merchants, and mariners, is so much clear gain to the nation. The value also of this commodity as a conveniency of life, is a great consideration, and a multitude of manufactures could not be carried on, but by the help and cheapness of the best coals. Lastly, thousands of laborious people are employed in and about the mines, in conveying the coals to the ports and shipping them, in the wholesale and retail trade, &c.

As to the use of the common fuel which we call coals, the Romans in Italy, seem to have been entire-

ly ignorant of it ; which is the more easily accounted for, as there are no beds of coals in the compass of Italy. But the primeval Britons appear to have used it. In the precincts of Manchester particularly, they could not have remained unapprised of the combustible which surrounded them so abundantly ; the currents there bringing frequently down fragments of coals from the mountains. Not less than forty-pieces of coals, and a quantity of slack, were discovered some time since, in the sand under the Roman road to Ribchester, when both were dug up at the construction of a house in Quay Street. These coals must have been lodged upon the spot, before the road of the Romans covered it. It seems therefore certain, that before the arrival of the Romans, the Britons were acquainted with the extensive beds of fuel, with which the precincts of Manchester are so happily stored. But for ages after the discovery, wood seems to have constituted the general firing of the nation, and would naturally continue so, as long as the forests and thickets presented themselves so ready to the hand.

- In 852 a grant was made of some lands by the Abbey of Peterborough, under the reservation of certain loans and payments in kind, to the monastery ; as sixty cart loads of wood, and twelve of pit-coal, &c. by which we see the quantity of coal was only one cart load, to five of wood. The first time we find coals publicly noticed, is in the reign of Henry III. who in the year 1272, granted a charter to the town of Newcastle, giving the inhabitants a license to dig coals. They were however not brought into common use till the reign of Charles I. and were then sold about 17s. a chaldron. In some years after the restoration, there were about 200,000 chaldrons burnt in London : in 1670, about 270,000 ; at the revolution, upwards of 300,000 ; and at present above 600,000 chaldrons are annually consumed. In Ireland, though they have coal of their own, yet they an-

nually import to the value of 30,000l. from England, and 12,000l. from Scotland.

There are several other countries in Europe, which possess considerable coal mines; as France, Brabant, Liege, Germany, and Sweden. Also on the other side of the Atlantic Ocean there has been coal discovered and wrought, in Newfoundland, Cape-Breton, Canada, and some of the New England provinces. But in all these countries, the coal is of a quality much inferior to the British, and entirely unfit to be used in many manufactures; so that they are obliged to import great quantities from Britain, for the use of their manufactures of iron, &c.

If we consider coals according to their degree of inflammability, they are distinguishable in three kinds: 1. The least inflammable kind is that known by the name of Welsh coal, found in Wales; Kilkenny coal, found near Kilkenny, in Ireland; and *blind* or *deaf coal*, found in many parts of Scotland and England. This coal takes a considerable degree of heat to kindle it, but when once thoroughly ignited, will burn a long time; it remains in the fire in separate pieces, without sticking together or caking: it produces neither flame or smoak, and makes no cinder, but burns to a white stony slag. It makes a hot glowing fire, like charcoals or cinders, and emits effluvia of a suffocating nature, which renders it unfit for burning in dwelling houses, its chief use being amongst maltsters, dyers, &c. for drying their commodities.

2. *Open burning coal*, soon kindles, making a hot pleasant fire, but is soon consumed: it produces both smoak and flame in abundance; but lies open in the fire and does not cake together, so as to form cinders, its surface being burnt to ashes before it is thoroughly calcined in the midst; from this it has its name of an open burning coal; it burns to white, or light brown ashes. Of this kind is cannel-coal, jet, parrot, splint, and most of the coals in Scotland.

3. *Close burning coal*, kindles very quickly, makes a very hot fire, melts and runs together like bitumen, the very smallest culm making the finest cinders, which being thoroughly burnt, are porous and light, as a pumice stone; and when broke, are of a shining lead colour. It makes a more durable fire than any other coal, and finally turns to brown or reddish coloured heavy ashes. Of this kind are the Newcastle, and several other of the English coals, and the smithy coals of Scotland. The open burning and the close burning coal mixed together, make a more profitable fire for domestic uses than either of them separate.

PITCH. (F. *Poix*; G. *Pech*; D. *Pek*, *Brai*; I. *Pece*; S. *Pez*; P. *Brea*; DA. *Beg*; Sw. *Beek*; POL. *Smola*; R. *Smola gustaja*; L. *Pix*.)

Pitch is a tenacious oily substance, drawn from pines and firs, and used in shipping, medicine, and various arts. It is tar inspissated, by boiling it over a slow fire. For further particulars, see *Tar*.

PLATINA is the heaviest of all metals, its specific gravity being to that of water, as twenty-three to one; that of gold being only nineteen. Its colour is that of the purest silver. The very small globules of it are extremely malleable; but when many of these are collected, they can scarcely be so perfectly fused as to preserve the same degree of malleability. They are not affected by the magnet in the least, nor can they be dissolved in any simple menstruum, excepting dephlogisticated marine acid. Platina however, as it is commonly met with, is mixed with many foreign substances, as gold, mercury, and blackish, ferruginous, sandy particles. In this state, it has the form of small grains, its plates of a bluish black, whose colour is intermediate betwixt those of silver and iron.

The great specific gravity of platina, has rendered

it a very desirable matter for such as wish to adulterate the precious metals, and can procure the platina easily. This however can only be done in South America, where platina is met with in plenty. In Europe, the scarcity of platina renders it a more valuable object than even gold itself. Fears of this fraud have, undoubtedly, given occasion to the prohibition of exporting it from America. It is however not difficult to discover the adulteration, by precipitation with green vitriol, which throws down the gold, and leaves the platina united with the menstruum: and by various other methods, but chiefly by its greater specific gravity.

Platina has been remarkable, ever since its first discovery, for being the most infusible substance in the world. It has been kept in the most violent heat of a glass furnace for several days, without any alteration. This refractory metal was first melted with a large burning mirror. It has since been found capable not only of fusion, but of vitrification, by the electric fire; but De Lisle was the first, who was able to melt it with the heat of a common forge, when exposed to the blast of double bellows in a double crucible. It must be observed, however, that this fusion was not performed on common platina, but on such as had been dissolved in aqua-regia, and precipitated by means of sal ammoniac. This precipitate, or even crude platina, is fusible by the assistance of fluxes, as white glass, borax, and charcoal.

**PLUMS.** (G. *Getrocknete*; D.A. *Drogue prunen*; F. *Prunes seches*; I. *Prune a sausine*; P. *Passa d'amings*.)

Mire, usually called prunes, are the fruit of the plum tree dried in the sunshine, or in an oven: the best kind known are those large black ones imported from Bourdeaux: those most esteemed are the newest, and appear to have a silvery kind of dust on them.

**PORPHYRY.** (F. *Porphyre*; G. *Perphyr*; D. *Porfiersteen*; I. *Porfido*; S. *Porfido*; P. *Porfido*; DA. *Porphyr*; Sw. *Porphyr*; POL. *Porfir*; R. *Porfir*; L. *Porphyrius lapis*.)

Porphyry includes those stones which contain either felt-spar, schoerl, quartz, or mica, with other species of crystallized stone, on a siliceous or calcareous ground. It is found of several different colours, as green, deep red, purple, black, dark brown, and gray.

The Egyptian porphyry is a most elegant mass, of an extremely firm and compact structure, remarkably heavy, and of a fine strong purple, variegated more or less with pale red and white. In Upper Egypt, and in Arabia Petræa, the hard pale red porphyry is also found in surprising quantities: it is variegated with black, white, and green, takes a high polish, and emulates all the qualities of the oriental porphyry.

The hard, red-lead coloured porphyry, variegated with black, white, and green, is a most beautiful and valuable substance. It has the hardness and all the other characters of the oriental porphyry, and even greatly excels it in brightness, beauty, and variegation of its colours. It is found in great quantities in the island of Minorca, and is well worth importing, being greatly superior to all the Italian marbles.

**PORTLAND STONE** is a free-stone, found in Portland, a peninsula in Dorsetshire. It is mostly brought to London, for the structure of the finest edifices. St. Paul's church, in particular, was built therewith.

**POTASHES.** (F. *Potasse*; G. *Pottasche*; D. *Potäs*; I. *Potassa*; S. *Potassa*; P. *Potassa*; DA. *Potatke*; Sw. *Potaska*; POL. *Potasz*; R. *Potash*; L. *Cineres clavellati*.)

Potashes are an impure fixed alkaline salt, of the colour of iron-stone, or paler. They are obtained



by burning birch or alder, by a slow fire, to ashes, and making them into a paste with water. This paste is plastered over a row of green pine and fir logs; above that is laid transversely another row of the same, and that likewise is plastered over. In this way they continue building and plastering, till the pile be of considerable height. This pile is set on fire: and whenever the ashes begin to run, it is overturned, and the melted ashes are beat with flexible sticks, so that they incrust the logs of wood, and become as hard as stone. This seems to be the method of making potashes in Sweden, Poland, &c. The Russia potashes are stronger, and, according to Sir Peter Warren, the best woods for making them are oak, ash, poplar, elm, hazle, and beech. They must be cut in winter, split, and stacked to dry. After twelve months in warm open weather, the wood must be burnt on a brick hearth, by a slow fire, in a kiln or close place; the ashes must be sifted through two sieves, one finer than the other, and then put up in brick troughs, or wooden backs, covered with rain or river water, and must remain well mashed and incorporated for five months. Brick furnaces, shaped like bakers' ovens, must be heated with a strong fire of oak or ash, burning night and day; and the prepared ashes must gradually be thrown on the fire, when they will run into metal like lead: the fire must not go out till the furnace is nigh filled with potashes. The ashes must then be broken, to be taken out, but the larger the pieces the better: they must be preserved from the air in tight casks, the larger pieces by themselves, and the dust by itself.

Potashes are principally used by the soap-boiler, glass-maker, fuller, &c.

The denomination of potashes is said to originate from their formerly having been prepared or shipped in pots, to prevent their dissolving from the access of air.

The greatest quantities of potashes come from Russia, Prussia, Poland, and North America.

*Kelp* is a sort of ashes, made use of in many of the glass-works of this country, particularly for green glass. It is the calcined ashes of a plant, called by the same name; and, in some places, of sea-thongs or laces, a sort of thick-leaved fucus or sea-wrack. These ashes, like Barilla, contain the mineral alkali.

The kelp-plant is thrown on the rocks and shores in great abundance, and in the summer months is raked together and dried, as hay in the sun and wind, and afterwards burnt to the ashes called kelp. The process of making it is thus: The rocks, which are dry at low-water, are the beds of great quantities of sea-weed, which is cut, carried to the beach, and dried; a hollow is dug into the ground, three or four feet wide; round its margin are laid a row of stones, on which the sea-weed is placed, and set on fire within; and quantities of this fuel being continually heaped upon the circle, there is in the centre a perpetual flame, from which a liquid like melted metal drops into the hollow beneath; when full, as it commonly is before the close of the day, all heterogeneous matter being removed, the kelp is wrought with iron rakes, and brought to an uniform consistence, in a state of fusion. When cool, it consolidates into a heavy, dark-coloured, alkaline substance, which undergoes in the glass-houses a second vitrification, and assumes a perfect transparency.

The greatest quantity of kelp is prepared in the Scilly islands.

**POTATOES.** (F. *Pommes de terre*; G. *Kartoffeln*; D. *Aardappelen*; I. *Patate*, *Pomi di terra*; S. *Patatas manchegas*; P. *Batatas de terra*, *Pomos de terra*; DA. *Patater*, *Jordæbler*; Sw. *Potatos*, *Jordpäron*; R. *Jabluki Semlenüe*, *Kartoflü*; L. *Tubera Virginiana esculenta*.)

Potatoes, it is generally thought, came originally

from North America. They were first, we are told, introduced into Ireland, in the year 1565, and thence into England. It was forty years after their introduction, however, before they were much cultivated about London; and not before 1663 they came in general use. The utility of potatoes, as food for man and cattle, is well established. Instances of the amazing increase of potatoes are very numerous. In the Gentleman's Magazine for 1757, we are told, that from one slice of a potatoe, planted by S. M'Hoy, near Tuam, in Ireland, there was a produce of nine hundred and sixty-five potatoes. This article is exported to Gibraltar, the Mediterranean, and the West Indies.

PRINCE'S METAL; see COPPER.

PRUNES; PRUNELLOES. (G. *Prunellen*; D. *Pruimellen*; DA. *Bruneller*; Sw. *Bruneller*; F. *Prunes de Brignoles*; I. *Susine di Brignola*.)

A sort of French prunes, of which large quantities are annually gathered in Provence. This fruit is very different from the common French prunes, and somewhat larger.

PRUSSIAN BLUE; BERLIN BLUE. (F. *Bleu de Prusse*; G. *Berlinerblau*; D. *Berlyns blaauw*; I. *Azzuro Prussiano, o di Berlino*; S. *Azul de Prussia*; P. *Azul de Alemanha, ou de Prussia*; DA. *Berlinerblaat*; Sw. *Berliner blatt*; R. *Lasor Berlinskaja*; L. *Ceruleum Berolinense*.)

Iron is the basis of the fine blue pigment, called, from the place where it was first discovered, Berlin, or Prussian blue. This colour was accidentally discovered, about the beginning of the last century, by a chemist of Berlin; who having successively thrown upon the ground several liquors from his laboratory, was much surprised to see it suddenly stained with a beautiful blue colour. Recollecting what liquors he

had thrown out, and observing the same effects from a similar mixture, he prepared the blue for the use of painters; who found that it might be substituted for ultramarine, and accordingly have used it ever since.

The process of manufacturing this pigment, is by calcining a quantity of vegetable alkali with twice its weight of dried bullock's blood, until the blood be reduced to a perfect coal. This coal is boiled in water, the lixivium decanted, and poured into a solution of one part of martial vitriol to six of alum, the lixivium and the solution both hot. The mixture will then acquire a very pale blue colour, and deposit as pale a precipitate. On adding more and more of a fresh solution of vitriol, the colour becomes deeper and deeper. In order to separate this precipitate, it is now filtrated, the next day washed till the water comes from it insipid, and the blue colour then gently dried.

Prussian blue is nothing more than the iron of the vitriol, revived by the inflammable matter of the alkaline lixivium, and perhaps a little brightened by the earth of alum.

**PUMICE-STONE.** (F. *Pierre-ponce*; G. *Bimstein*; D. *Puimsteen*; I. *Pietra pomice*; S. *Piedra pomez*; P. *Pedra pomes*; DA. *Pimpsteen, Bimsteen*; Sw. *Pimsten, Klasten*; POL. *Zuzel kamienna*; R. *Penza*; L. *Pumex*.)

The pumice-stone, though universally admitted to be the product of volcanic fire, is one of those bodies which have divided the opinions of naturalists. The Abbé Lazaro Spalanzani, who most minutely examined this article, says, that the pumice fields, where the common pumice is found, consist of an aggregation of numerous beds of strata of pumices, each bed not forming a distinct whole, but being a collection of balls of pumice, without adhesion; from which he deduces, that they were thrown out by the volcano, in a state of fusion, and took a globose form in the

air. They are of different sizes, from that of a nut to a foot and more in diameter. Though the ground colour of them all is white, in some it inclines to yellow, and in others to a gray. They swim in water, and do not give fire with steel. Their fracture is dry, and rough to the touch, their angles and thinner parts slightly transparent. Some are so compact, that the smallest pore is not visible, nor do they exhibit the least trace of a filamentous texture: others, on the contrary, are full of pores and vacuities, and their texture is formed by filaments and streaks, in general parallel to each other, of a shining silver whiteness.

This is the common pumice-stone known amongst us, and the only kind constituting an article of commerce from the Mediterranean to this country.

There are several other varieties, particularly one of a dark dirty, and another of a pale red colour; both to be found, not loose, but in solid beds, and cut by the labourers in form of parallelopipeds. Both the latter sorts are used in Italy, for building arched vaults, cornices, &c. but do not constitute an article of foreign commerce.

The greatest part of pumices seem to have felt-spar for their constituent principle, some also horn-stone, some asbestos, or a stone analogous to the asbestos.

The greatest quantity of pumice to be met with any where is the Campo Bianco, in the island of Lipari, a mountain about a quarter of a mile in breadth. The rock also, upon which the castle of Lipari is built, is an immense heap of lava, glass, and pumice-stones; which latter, in fact, are nothing else but an imperfect glass, or a volcanous ejection, which, if exposed to a greater degree of heat, would have been changed in a vitreous mass. Small quantities of pumice are found also in the Arso, in the island of Ischia. But a place in Europe, which in the abundance of its pumices can equal, or perhaps surpass Lipari, is the island of Santorine in the Archipelago, almost covered

with pumice-stone. - Many eruptions of pumices are in the Phlegrean Field; one of which overwhelmed the unfortunate town of Pompeii.

Pumice-stone is used in several mechanical arts; as for rubbing and smoothing the surface of metals, wood, pasteboard, and stone; for which it is well qualified, by reason of its harsh and brittle texture.

PUZZULANA, or *Terra Pozzolana*, is a kind of earth, used for building under water. It is a volcanic product, composed of heterogeneous substances, thrown out from the burning mouths of volcanoes, in the form of ashes; sometimes in such large quantities, and with so great violence, that whole provinces have been covered with it at a considerable distance. This volcanic earth is of a gray, brown, or blackish colour; of a loose granular or dusty, and rough porous, or spongy texture, resembling a clay hardened by fire, and then reduced to a gross powder. Its most distinguished property is, that it hardens very suddenly when mixed with one-third of its weight of lime and water; and forms a cement, which is more durable in water than any other.

The best pozzolana is found about Puzzuoli or Puteoli, Baiæ, and Cumæ, in the kingdom of Naples; from the first of which places it derives its name.

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Q.

QUASSIA. (F. *Bois de Quassie*; G. *Quassienholz*; D. *Kwassiehout*; I. *Legno di Quassia*; S. *Leno de Quassia*; P. *Pao de Quassia*; DA. *Quassebark*; Sw. *Quassiæträd*; L. *Lignum Quassia*.)

There are three species of quassia; namely, the *amara*; *simaruba*; and *excelsa*, or *polygama*.

The *quassia amara* grows to the height of several feet, and sends off many strong branches. The wood is of a white colour, and light; the bark is thin and gray. It is a native of South America, particularly of Surinam, and also of some of the West-Indian islands. The root, bark, and wood of this tree, have all places in the materia medica. The wood is most generally used, and is said to be a tonic, stomachic, antiseptic, and febrifuge.

The *quassia simaruba* is common in all the woodlands of Jamaica. It grows to a great height and considerable thickness. The trunks of the old trees are black, and a little furrowed: those of the young trees are smooth and gray, with here and there a broad yellow spot. The inside bark of the trunk and branches is white, fibrous, and tough. It tastes slightly bitter. The wood is useful for building, and has no sensibly bitter taste. The roots are thick, and run slightly under the surface of the ground to a considerable distance. Their bark is rough, scaly, and warted. The inside, when fresh, is a full yellow, but when dry, paler. It has but little smell. The taste is bitter, but not very disagreeable. This is the true cortex simarubæ of the shops.

The *quassia excelsa* or *polygama*, is likewise very common in the woodlands of Jamaica. It is a beautiful, tall, and stately tree; some of them being one hundred feet long, and ten feet in circumference. The trunk is straight, smooth, and tapering, sending off its branches towards the top. The outside bark is pretty smooth, and of a light gray, or ash-colour. The bark of the roots is of a yellow cast, somewhat like the cortex simarubæ. The inner bark is tough, and composed of fine flaxy fibres. The bark of this quassia, but especially the wood, is intensely bitter. The wood is of a yellow colour, tough, but not very hard; it takes a good polish, and is used as flooring. In taste and virtues it is nearly equal to the quassia amara, and frequently sold for the same.

Besides its use in medicine, quassia is consumed in large quantities by the brewers, to give a bitterish taste to the beer.

**QUERCITRON BARK** (*G. Quercitron*) is the bark of a species of oak, growing spontaneously on the continent of North America, particularly in Massachusetts bay, where it is commonly called yellow oak; and in other parts, particularly in Pennsylvania, the black oak; Linnæus terms it *quercus nigra*. It is very rough, of a dark brown or black colour on the outside, and of a yellowish brown within. If boiled in water, its decoction becomes yellow, by the addition of alum; or a kind of olive brown, by the addition of a solution of iron, by some mineral or vegetable acid. On account of this property, it has been introduced first by Dr. Edward Bancroft, for dyeing yellow. He first imported a cargo of it from Philadelphia to London, in 1775, at which time no other person had ever imported this bark in Great Britain.

Its tingent particles very much resemble in their properties and effects those of the weld plant; though all the colours given by the latter may be given more advantageously by the quercitron bark. The latter name, given to this bark by Dr. Bancroft, is of the Latin words *quercus citrina*.

This bark may be advantageously peeled from the tree in the spring months; and as its rough, blackish outside part, making nearly half of the whole, contains little or no colouring matter, it is cut off from the inner part; which being thoroughly dried, and coarsely ground, is then closely packed and pressed in proper casks, and so shipped.

**QUICKSILVER; MERCURY.** (*F. Vif argent; G. Quecksilber; D. Kwikzilber; I. Argento vivo; S. Azogue; P. Azogue; DA. Queksölv; Sw. Quicksilfver; POL. Zywe srebro; R. Rtut; L. Hydrargyrum.*)

Quicksilver is a semi-metal, so fusible that it can-



not be reduced to a solid state but by the most intense degree of cold. Its dilatation by heat is extremely regular; for which reason thermometers are frequently filled with it.

It is of a bright silver colour, resembling lead or tin when melted, entirely void of taste and smell. It is the most ponderous of all known bodies, gold and platina excepted, its specific gravity being to that of water nearly as fourteen to one. It is found to be specifically heavier in winter than in summer, by twenty-five grains in eleven ounces. Neither air nor water, nor the united action of these two, seem to make any impression upon mercury, nor is it more susceptible of rust than the most perfect metals. Its surface, nevertheless, is more quickly tarnished by dust seizing upon it. From this, however, it can easily be cleansed, by passing it through a new clean cloth.

It is found either native, or mineralized by aerial acid, by the vitriolic and marine acids, by sulphur, copper, iron, &c.

The principal quicksilver-mines are at Idria in Austria, Almaden in Spain, and Quancavelica in Brasil. But there is quicksilver found in many other parts, as in Japan, in Sicily, Deuxponts, Lower Austria, Kremnitz in Hungary, Harowitz in Bohemia, Villa Rica in Brasils, &c.

The mines of Idria have produced at the rate of 231,778 lbs. of quicksilver per annum; and those of Almaden produce between 5 and 600,000 lbs. yearly; but the annual produce of those at Quancavelica amounts to one million of pounds.

Quicksilver is employed, in Chili and Peru, to extract gold and silver, when native, from the earthy matters with which they are mixed. The principle on which this method is founded is the strong mutual attraction betwixt mercury and the precious metals. Mercury uniting with almost all metals and semi-metals, these compounds are called amalgams. The

amalgam with gold serves to gild copper or silver, so that they appear as if made of solid gold. The only use to which the amalgam of quicksilver with lead has hitherto been applied, is the luting glass vessels. The amalgam of tin is commonly employed in making looking-glasses.

With sulphur, by trituration or simple fusion, mercury forms a black powder or mass, called Ethiop's mineral; which, by careful sublimation, becomes the beautiful red pigment, called vermilion.

Various preparations are made, in pharmacy, of quicksilver, for external and internal use; as sublimate corrosive, mercurius precipitatus per se, mercurius dulcis, calomel, &c.

Mercury should be chosen white, fluid, clean, quick, and of a beautiful water colour: if brown and leady, sticking to the hands, and running in minute globules, it is a sign that it is mixed with lead.

QUILLS. (F. *Plumes à écrire*; G. *Posen*; D. *Pennen*; I. *Penne da scrivere*; S. *Plumas o canones para escribir*; P. *Pennas ou lanos para escrever*; DA. *Penne*; SW. *Pennor*; POL. *Piora, Pipy, Pipki*; R. *Pera, Stwołi*.)

Quills are the large feathers taken out of the end of the wings of geese, ostriches, crows, &c. They are denominated from the order in which they are fixed in the wing; the second and third quills being the best for writing, as they have the largest and roundest barrels. Crow quills are chiefly used for drawing. In order to harden a quill that is soft, thrust the barrel into hot ashes, stirring it till it is soft, and then taking it out, press it almost flat upon your knee with the back of a pen-knife, and afterwards reduce it to a roundness with your fingers. Another method to harden quills is, by setting water and alum over the fire, and while it is boiling, put in a handful of quills, the barrels only, for a minute, and then lay them by.

Large quantities of quills are yearly imported into Britain from Germany and Holland.

The goodness of quills is judged by the size of the barrels, but particularly by the weight; hence the denomination of quills of fourteen, fifteen, &c. loths; viz. the thousand, consisting of twelve hundred quills, weighing fourteen, fifteen, &c. loths. The loth is a German weight, weighing something more than an ounce. Particular attention should be paid, on purchasing quills, that they may not be left-handed, that is, not out of the left wing.

## R

**RAGS** (G. *Lumpen Vodden*; DA. *Klude*; F. *Chiffon Drapeaux*; I. *Stracci, Strasse*; S. *Tropos*; P. *Farrapos*;) constitute that most useful article, paper. Italy, Germany, and some other countries in the north of Europe, furnish us with abundance of rags; and France also, in time of peace.

**RAISINS.** (F. *Raisins secs ou passés*; G. *Rosinen*; D. *Rozynen*; I. *Uve passe*; S. *Pasas*; P. *Passas, Passa de uvas*; DA. *Rosiner*; SW. *Russin*; POL. *Rozynki*; R. *Issum*; L. *Uvæ passæ*.)

Raisins are grapes, prepared by suffering them to remain on the vine till they are perfectly ripe, and then drying them in the sun, or by the heat of an oven. The difference between raisins dried in the sun and those dried in ovens, is very obvious; the former are sweet and pleasant, but the latter have a latent acidity with the sweetness, that renders them much less agreeable.

The common way of drying grapes for raisins, is to tie two or three bunches of them together, while on

the vine, and dip them into a hot lixivium of wood-ashes, with a little of the oil of olives in it. This disposes them to shrink and wrinkle; and after this they are left on the vine three or four days, separated on sticks, in an horizontal situation, and then dried in the sun at leisure, after being cut from the tree. Most raisins, as the sun and jar raisins, &c. are all dried in the sun.

**RAPE-OIL.** (F. *Huile de Navette*; G. *Rubol*; D. *Raapoli*; I. *Olio di ravizzoni*; S. *Aceite de nabina*; P. *Olio de nabica*; DA. *Roeolje*; Sw. *Rofolja*; R. *Räpnöe masslo*.)

Rape-oil is expressed from the rape-seed; its use being for the manufacture of wool, for burning in lamps, and to serve instead of train-oil when there is a scarcity of it.

Its good qualities are, a gold colour, an agreeable smell, and a sweet taste. It is sometimes mixed with linseed oil, which is discoverable by its bitterness, and a less agreeable smell.

**RAPESEED; COLESEED.** (F. *Graine de Navette*; G. *Rübsaat, Kübsen*; D. *Raapzaad*; I. *Ravizzone*; S. *Nabina*; P. *Nabiça, Semente de Nabos*; DA. *Roeifrö*; Sw. *Roffrö*; POL. *Rzepnica*; R. *Räpnöe Sämja*; L. *Brassica Chinensis*.)

Rapeseed is the seed of the *napus sativa*, or long-rooted, narrow-leaved rapa, called in English navew, and reckoned by Linnæus among the brassicas or cabbage kind.

This plant is cultivated in many parts of England to great advantage, particularly in Lincolnshire and Cambridgeshire, on account of the rape-oil expressed from its seeds. The cultivation of it was first introduced by those Germans and Dutchmen who drained the fens of Lincolnshire; and hence the notion has erroneously prevailed that it will only thrive in a marshy soil. It is to be sown about midsummer. In

the months of January, February, and March, it affords very good food for cattle, and will sprout again when cut; after which it is excellent nourishment for sheep, and after all, if not too closely fed, will bear seed against July.

Large quantities of rapeseed are imported annually from Flanders, Holland, and Germany; also from Champagne and Normandy, for the purpose of extracting rape-oil.

RATAFIA is a fine spirituous liquor, prepared from the kernels, &c. of several kinds of fruit, particularly cherries and apricots, with an addition of spice and brandy.

Ratafia of cherries is prepared, by burning the cherries, and putting them into a vessel wherein brandy has been long kept; then adding to them the kernels of cherries, with strawberries, sugar, cinnamon, white pepper, nutmegs, cloves, and, to twenty pounds of cherries, ten quarts of brandy. The vessel is left open ten or twelve days, and then stopped close for two months before it be tapped.

Ratafia is chiefly prepared by the French.

RED LEAD. (F. *Minium*, *Plomb rouge*; G. *Mennig*; D. *Menie*; I. *Minio*; S. *Minium*, *Azarcon*; P. *Minio*, *Azarcao*; DA. *Minie*; SW. *Mönja*; POL. *Minia*; R. *Surik*; L. *Minium*.)

Red lead is a calx of lead, of a vivid red colour; which colour it acquires by a slow calcination and reverberation.

The process by which red lead is prepared in large quantities in this country, is as follows: they first burn lead in a furnace into a kind of litharge, by continually stirring it, while melted, with an iron rake; this they afterwards grind to a fine powder, when it is washed, and again put into a furnace, where it is burnt with a reverberatory fire for two or three days. Towards the end of the time, they watch its being of

the right colour. When this is doing, the fire must not be carried beyond a certain degree, lest the matter clod, and run together.

The goodness of red lead, or minium, may be distinguished by the brightness of its colour; and the adulteration to which it is liable may be detected, by putting an ounce of it into a crucible, with an equal quantity of charcoal-dust, well mixed together, and placing the crucible in a common fire, sufficient to melt lead, which is to be covered with another small crucible inverted into it. When it has continued for some time on the fire, take it out, and strike it against the ground. The red lead will thus be reduced to its metallic state; and its diminished weight, when cold and freed from the charcoal-dust, will indicate the proportion of adulterated matter.

Minium is used in painting, varnishing, as a flux in forming the enamel for grounds, and in glazing, &c.; in medicine for external applications.

RED SAUNDERS; see SAUNDERS.

RHUBARB. (F. *Rhubarbe*; G. *Rhabarber*; D. *Rhabarber*; I. *Rabarbaro*, *Reobarbaro*; S. *Ruibarbo*; P. *Ruibarbo*; DA. *Rabarber*; SW. *Rabarber*; POL. *Reubarbarum*, *Rum tureckie*; R. *Rewen*; L. *Rha*, *Rhabarburum*, *Rheum palmatum*.)

Rhubarb is the root of the rheum palmatum. This root is of an oblong figure, large at the head, and tapering pretty suddenly as it extends in length. It is sometimes single, but more usually divided into two or three parts at the lower end. We frequently meet with it in pieces of four, five, or six inches long, and three or four in diameter at the top. It is of a tolerably smooth and even surface, and of a faint yellow colour, with an admixture of brown. It is moderately heavy, and not hard; of a somewhat lax and spongy texture. It has an agreeable and aromatic smell, and a bitterish, astringent, and subacid taste.

Rhubarb is to be chosen fresh, and such as does not dust the fingers in handling; such as infused a few minutes in water gives it a fine yellow colour, and when bruised in a mortar, has a reddish colour with the yellow.

Rhubarb is not so often adulterated as damaged; care is to be taken that it is not wet, nor rotten; it is much subject to be worm eaten, and full of holes on the surface. There is a way of filling up these holes with the powder of some of the most decayed pieces, which however may be easily discovered.

This drug is brought to us from Russia, and from the East Indies. It is produced in great plenty on the confines of China and Tartary, and in many parts of Tartary itself: the mountains of Thibet abound with it, and a very considerable part of what is sent to Europe grows there.

Rhubarb possesses the double virtue of a cathartic and an astringent, and is acknowledged to be an excellent medicine.

RICE. (F. *Riz*; G. *Reiss*; D. *Ryst*; I. *Miso*; S. *Arroz*; P. *Arroz*, *Arros*; D.A. *Ris*; Sw. *Ris*; POL. *Ryz*; R. *Pscheno sarazinskoe*; L. *Oryza*, *Rizum*.)

Rice is a plant very much resembling wheat in shape and colour, and in the figure and disposition of its leaves. The panicle which terminates the stem, is composed of small flowers, distinct from each other, which have four unequal scales, six stamina, and one pistil, surrounded with two styles. This pistil becomes a white seed, extremely farinaceous, covered with two interior scales.

This plant thrives only in low, damp, and marshy lands, when they are even a little overflowed. The period of its discovery is traced to the remotest antiquity.

Egypt, unfortunately for itself, first attended to it. The pernicious effects of this culture rendered the

country the most unhealthy in the known world. China and the East Indies must experience the same calamity, if art does not oppose preservatives to nature, whose benefits are sometimes accompanied with evils, or if the heat of the torrid zone does not quickly dispel the damp and malignant vapours which are exhaled from the rice grounds. It is a known fact, that in the rice grounds of the Milanese the cultivators are all livid and dropsical.

The culture of rice is still very considerable about Damietta, Mansura, and other parts of Egypt. Were the trade in this article under no restraint, a considerable quantity might be exported; but the port of Damietta is alone open for the exportation of rice. The Americans are even said to have brought rice to Egypt from Carolina, for some time, which would be a proof of the astonishing decline of agriculture in that country.

Opinions differ about the manner in which rice has been naturalized in Carolina. But whether the province may have acquired it by a shipwreck, whether it may have been carried there with slaves, or whether it be sent from England, it is certain that the soil seemed favourable for it. It multiplied however but slowly, because the colonists, who were obliged to send their harvests into the ports of the mother country, by which they were sent into Spain and Portugal, acquired so small a profit from their productions, that it was scarcely sufficient to defray the expenses of cultivation. In 1730, a more enlightened administration permitted the direct exportation of this grain beyond Finisterre. Some years afterwards, it was allowed to be carried to the West Indies; and then the provinces, being sure of selling the good rice advantageously in Europe, and the inferior or spoiled rice in America, attended seriously to the cultivation of it. This production grows, by the care of negroes, in the morasses which are near the coasts.



There is a wild kind of rice, growing in great plenty throughout the interior parts of North America, which supplies the inhabitants with food, without any further trouble than that of gathering it. It grows in the water, where it is about two feet deep, and where it finds a rich muddy soil. The stalks of it, and the branches or ears that bear the seed, resemble oats, both in their appearance and manner of growing. The stalks are full of joints, and rise more than eight feet from the water.

ROCK OIL; see PETROL.

ROMAN VITRIOL; see BLUE VITRIOL.

ROSE WOOD. (*G. Rosenhaltz*; *D. Rosenbout*; *DA. Rosentree*; *F. Bois de Rose*; *I. Leger Redie*; *L. Rhodium*.)

A wood brought from the Canary Islands. It is in long crooked pieces, full of knots, which when cut appear of a yellow colour, like box, with a reddish cast. The largest, smoothest, most compact, and deepest colour should be chosen.

Besides the Canary Islands, this wood is imported from Jamaica.

ROSIN; see OIL OF TURPENTINE, and TURPENTINE.

ROTTEN STONE; see TRIPOLI.

RUBY. (*F. Rubis*; *G. Rubin*; *D. Robyn*; *I. Rubino*; *S. Rubi*; *P. Rubim*; *DA. Rubin*; *SW. Rubin*; *POL. Rubin*; *R. Jachont tscherwtschatoi*; *L. Rubinus*.)

The ruby is a beautiful gem, of red colour, with an admixture of purple.

This, in its most perfect and best coloured state, is

a gem of prodigious beauty and extreme value. In hardness it is equal to the sapphire, and inferior only to the diamond. It is usually found very small, equal to the head of the largest sort of pins; but sometimes of four, eight, and ten carats; and sometimes, though very seldom, of twenty, thirty, up to forty carats. It is never found of an angular or crystalliform, but always of a pebble-like shape. It commonly is naturally so bright, and pure on the surface, that when its figure will admit, it is set in its rough state.

Our jewellers distinguish this gem according to its different degrees of colours, under three different names; viz. the ruby, which name is simply given to the stone when in its deepest coloured and most perfect state; the spinel ruby, comprehending those rubies that are of a somewhat less bright colour; and the balass ruby, which expresses a pale, yet very bright ruby, with less admixture of the purple tinge than in the deeper-coloured ones.

The true ruby only comes from the East Indies, and the principal mines are in the kingdom of Pegu, and the island of Ceylon. We have in Europe crystals tinged with the colour of the ruby, but they have nothing of its lustre or hardness.

RUM. (F. *Rum*, *Gueldive*; G. *Rum*; D. *Rum*, *Keelduivel*; I. *Rum*, *Taffia*; S. *Ron*, *Rom*, *Tafia*; P. *Rom*; DA. *Rom*, *Geldyvel*; Sw. *Rom*, *Rum*; R. *Rom*.)

Rum differs from simple sugar spirit, in containing more of the natural flavour, or essential oil of the sugar-cane; a great deal of raw juice, and parts of the cane itself, being fermented in the liquor of which it is prepared. The unctuous, or oily flavour of rum, is the effect of the natural flavour of the sugar-cane.

The method of making rum is this: when a sufficient stock of the materials is collected, they add water to them, and ferment them in the common manner. When the wash is fully fermented, or to a

due degree of acidity, the distillation is carried on in the common way, and the spirit is made up proof; though sometimes it is reduced to a much greater strength, nearly approaching that of alcohol, and it is then called double-distilled rum. It would be easy to rectify the spirit, and bring it to a much greater purity than we usually find it to be; for it brings over in the distillation a very large quantity of the oil, and this is often so disagreeable, that the rum must be suffered to lie by a long time, to mellow, before it can be used; whereas, if well rectified, it would grow mellow much sooner, and would have a much less potent flavour. If the business of rectifying was more nicely managed, it seems very practicable to throw out so much of the oil as to have it in the fine light state of a clear spirit. In this state it would very nearly resemble arrac, as is proved by mixing a very small quantity of it with a tasteless spirit.

Rum is usually very much adulterated in England. Some are so barefaced as to do it with malt spirit; but if done with molasses spirit, the tastes of both are so nearly allied, that it is not easily discovered.

RUSHES. (D. *Bres*; D<sup>A</sup>. *Siv*; S<sup>w</sup>. *Saf*; F. *Jonc*; I. *Guines*.)

A well-known vegetable production, growing in marshy lands. The pith of two kinds of rushes is used for wicks to lamps and rush-lights. Large quantities are imported from Holland, where they are wrought into baskets, and other useful things, as well as in this country.

RYE. (F. *Seigle*; G. *Roggen*; D. *Rog*, *Rogge*; I. *Segale*, *Segala*; S. *Centeno*; P. *Seteio*, *Centeio*; D<sup>A</sup>. *Rug*; S<sup>w</sup>. *Rag*; P<sup>OL</sup>. *Rez*, *Zito*; R. *Rosch*, *Sel*, *Jar*; L. *Secale*.)

The *secale cereale*, or common rye, is a native of the island of Candia, and was introduced into the North of Europe and England many years ago. There

are two varieties, the winter and spring rye. The winter rye, which is larger than the spring rye, is sown in autumn, at the same time with wheat. The spring rye, which is sown along with the oats, usually ripens as soon as the winter rye; but the grain produced being lighter, it is seldom sown, except where the autumnal crop has failed.

Rye is commonly used for bread, either alone, or mixed with wheat. The consumption of this article is particularly great in Yorkshire and Scotland. Rye is frequently imported into Great Britain from Russia.

Rye is subject to a disease, which the French call *ergot*, and the English *horned rye*. This commonly arises from a hot summer succeeding a rainy spring. Horned rye is such as suffers an irregular vegetation, in the middle substance between the grain and the leaf, producing an excrescence of a brownish colour, about an inch and a half long, and two tenths of an inch broad. Bread made of this kind of rye has a nauseous, acrid taste, and produces spasmodic and gangrenous disorders. Horned rye has been known to destroy sheep, dogs, poultry, &c.

## S.

SACCHARUM SATURNI, SUGAR OF LEAD.  
(F. *Sucre de Saturne*; G. *Bleyzucker*; D. *Lood-suiker*; I. *Zucchero di Saturno*; S. *Azucar de Saturno*; P. *Assucar de Saturno*; L. *Saccharum Saturni*.)

To make this preparation of lead, boil ceruse with distilled vinegar, until the vinegar becomes sufficiently sweet; then filter the vinegar through paper, and, after due evaporation, set it to crystallize.

This is a very dangerous medicine for internal use, but is of great service externally. It is frequently imported from Germany.

**SAFFLOWER.** (F. *Saffranon*, *Cartame*, *Saffran batard*; G. *Safflor*, *Wilder Saffran*; D. *Saffloer*, *Floers*, *Basterd Saffran*; I. *Zaffrone*, *Zafferano saracinesco*; S. *Alazor*, *Azafran bastardo*, *Cartamo*; P. *Açafroa*, *Azafrod*, *Cartamo*, *Fusaro*; D.A. *Safflor*, *Uegte Saffran*; Sw. *Safflor*, *Oügt Saffran*; POL. *Szafran polny*, *Krokos*; R. *Polewoi*, *prostoi schafran*; L. *Carthamus tinctorius*, *Saffranum*.)

Safflower is the florets of the flower of the *carthamus tinctorius*, a plant originally growing in Egypt, and some of the warm parts of Europe, and also in the Levant, whence great quantities are annually imported into Great Britain, for the purpose of making a yellow dye. The good quality of this commodity, is in a bright colour, of a saffron hue. If there happens to fall much rain, during the time the plants are in flower, or if the flowers are gathered with any moisture upon them, they change into a dark dirty yellow.

The manner of preparing the safflower in Egypt, is as follows: the flowers are gathered fresh, and pressed between two stones, to extract the crude juice, which is thrown away: they then are washed several times in spring water, which is brackish in Egypt, and by this the remaining acrid juice is carried away. When well pressed with the hands, they are put on the flat roofs of houses, and laid on mats, being now of a yellow colour. In the day time, they are covered with rushes or straw, lest they should dry too fast, but at night they are uncovered and exposed to the air and dew. They are turned every now and then, and when dry, are changed into a deep yellow, and so packed and shipped for Europe.

SAFFRON. (F. *Safran*; G. *Saffran*; D. *Saffraan*; I. *Zafferano*, *Gruogo*; S. *Azafran*; P. *Açafrão*; DA. *Saffran*; Sw. *Saffran*; POL. *Szafran*; R. *Schafran*; L. *Crocus*.)

Saffron is a bulbous plant, of which there are two species, one blowing in spring, and the other in autumn. The former, is merely esteemed on account of the beauty of its flowers; the latter, is in blossom earlier than the green leaves appear, which remain during winter, and the flowers contain those small threads or filaments, used in medicine, and as a paint, and employed also for seasoning various kinds of food.

It appears, that the medicinal use of this plant, has always continued among the orientals. The Europeans who adopted the medicine of the Greeks, sent to the Levant for saffron, until they learned the art of rearing it themselves; and employed it very much, until they were made acquainted with the use of more beneficial articles.

What in the ancient use of saffron is most discordant with our taste, is the employing it as a perfume. Not only were balls, theatres, and courts, through which one wished to diffuse an agreeable smell, strewed with this plant, but it entered into the composition of many vinous extracts, which retained the same scent; and these costly smelling waters, were often made to flow in small streams, which spread abroad their much-admired odour. Luxurious people even moistened or filled with them all those things with which they were desirous of surprising their guests in an agreeable manner, or with which they ornamented their apartments. From saffron, with the addition of wax and other ingredients, the Greeks as well as the Romans prepared also scented salves, which they used in the same manner as our ancestors their balsams. In modern times, it does not appear that the smell of saffron was ever much admired.

That saffron was as much employed in seasoning dishes, as for a perfume, appears from the oldest works of cookery; and its use in this respect has been long continued, and in many countries is still more prevalent than physicians wish it to be.

It may readily be supposed, that the great use made of this plant in cookery, must have induced people to attempt to cultivate it in Europe; and it is probable that it was first introduced into Spain by the Arabs. From Spain it was, according to every appearance, carried afterwards into France. As to its introduction into England, we are assured that a pilgrim brought from the Levant to England, under the reign of Edward III. the first root of saffron, which he had found means to conceal in his staff, made hollow for that purpose.

In the fifteenth and following century, the cultivation of saffron, was so important an article in the European husbandry, that it was omitted by no writer on that subject. The saffron consumed at present in this country, comes from France and Spain.

One million eight hundred thousand pounds of saffron are annually prepared in Egypt. The greater part of it goes to Marseilles and Italy, the rest to Syria and Arabia. The best saffron grows in the vicinity of Cairo; that of Upper Egypt is not reckoned so good.

SAGO. (F. *Sagou*; G. *Sago*; D. *Sago*; I. *Sago*; S. *Sago*; P. *Sago*; DA. *Sagogryn*; Sw. *Sagogryn*.)

The sago-tree, *cycas circinalis*, grows spontaneously in the East Indies, and particularly in the Moluccas, and on the coast of Malabar.

This is a valuable tree to the inhabitants of India, as it not only furnishes a considerable part of their constant bread, but also supplies them with a large article of trade. It runs up with a straight trunk to

forty feet or more. The body contains a farinaceous substance, which they extract from it, and make into bread.

The tree which seems to grow merely for the use of man, points out the meal, by a fine white powder, which covers its leaves, and is a certain indication of the maturity of the sago. The inhabitants then cut it down to the root, saw the body in small pieces, and after beating them in a mortar, pour water upon the mass; this is left for some hours to settle. When fit, it is strained through a cloth, and the finer particles of the mealy substance running through with the water, the gross ones are left behind and thrown away. After the farinaceous part is sufficiently subsided, the water is poured off, and the meal being properly dried, is occasionally made into cakes, and baked. These cakes are said to eat nearly as well as wheaten bread, and are the support of the inhabitants, for three or four months in the year.

The same meal, more firmly pulverized, and reduced in granules, is what is called sago, which is sent into all parts of Europe, and sold in the shops as a great strengthener and restorative.

There is a sort of sago brought from the West Indies, but far inferior in quality to that coming from the East. It is supposed to be made from the pith or *areca oleracea*.

**SAL AMMONIAC.** (F. *Sel Ammoniac*; G. *Salmiak*; D. *Sal Ammoniäk*; I. *Sale Ammoniaco*; S. *Sal Ammoniaca*; P. *Sal Ammoniaco*; DA. *Salmiak*; Sw. *Salmiak*; POL. *Salmiak*, *Salmoniak*; R. *Naschatür*; L. *Sal Ammoniacum*.)

Of this volatile salt there are two sorts, the ancient and modern. The ancient was a native salt, generated in those large inns or caravanseras, where the crowd of pilgrims, coming from the temple of Jupiter Ammon, used to lodge. There, from the remarkably strong urine of their camels, arose a kind of salt, denominated



sometimes Ammoniac, from the temple, and sometimes Cyreniac, from the Egyptian province Cyrene, in which the temple stood.

Large quantities of a salt, nearly of the same nature, have been thrown out by Mount *Ætna*.

The modern sal ammoniac is entirely the produce of art.

Marine acid, combined with volatile alkali, produces the modern common sal ammoniac. The method of making this salt was long unknown, and it was all imported from Egypt. Its composing parts, however, being once known, there was nothing left, in order to prepare it, but to procure them sufficiently cheap, so as to afford sal ammoniac made in Britain at an equally low price with that imported from Egypt. The volatile alkali, is to be procured in plenty, from animal substances, or from soot; and the low price of the vitriolic acid, made from sulphur, affords an easy method of decomposing sea-salt, and obtaining its acid at a cheap rate. A sal ammoniac work has been established a considerable time since, at Edinburgh, upon this principle.

The art of sublimating sal ammoniac in Egypt, is as follows. As Egypt is without wood, its inhabitants are obliged to burn the dung of their domestic animals. The dung of asses and camels is chiefly used; they mix it with cut straw, and of this mixture make cakes, which are dried in the sun. A soot, very rich in salts, is produced by the burning of these cakes, which is employed in the manufacture of sal ammoniac. The sublimation of this soot, is performed in large bottles of thick glass, shaped like bombs, and put into a furnace, which is heated with dung. For three days and three nights, an equal heat is kept up, and that intense enough to vitrify the potters' earth, with which the bottles are coated, to make them resist the violence of the fire. The furnace is then suffered to cool, the bottles are broken, and the sal

ammoniac taken out of their necks, into which it has been raised by sublimation.

Sal ammoniac has the property of making tin unite very readily with iron and copper, and is therefore much used by coppersmiths, and in the manufactory of tinned iron. A solution of sal ammoniac has the property of dissolving resins.

SALT. (F. *Sel*; G. *Salz*; D. *Zout*; I. *Sale*; S. *Sal*; P. *Sal*; D<sub>A</sub>. *Salt*; Sw. *Salt*; POL. *Sol*; R. *Sol*; L. *Sal*.)

Salt is a mineral body, readily soluble in water, not inflammable, and tasting sharp or pungent upon the tongue.

Alum, nitre, the different kinds of alkali, &c. are all salts; but we limit ourselves here, to treat of alimentary salt, or muria.

Alimentary salt is found under a variety of forms, in its different states; but is immediately distinguished; by applying it to the tongue; and always assumes a cubic, pyramidal, or parallelopiped figure, after a regular crystallization. It is sustained in vast quantities, in a liquid form, among sea-water, and that of salt-springs; but is also found solid in the bowels of the earth.

The sea-water, in different parts of the world is very differently saturated with salt, some parts containing twice as much as others; but salt-springs are always much more so than any sea-water; some containing as much nearly as they could be made to dissolve, and yielding a brine, a pound of which affords near a quarter of a pound of salt. The common run of sea-water, does not hold so much as one-fourth part of this quantity, some not one-eighth of it.

Salt produced from the sea-water or salt-springs, of any part of the world, only differs in strength; and the strength of salt, principally seems to depend upon

the method of preparing it. The quicker the liquor is evaporated, the weaker is the salt, which seems to proceed from part of the acid being raised and carried away with the water, when exposed to a violent fire. Salt obtained by coction, is therefore always much weaker than sea-salt obtained only by exposure to the rays of the sun.

Of *sea-salt* there are two kinds, that which requires the heat of the sun to give it its consistence, called from its brown colour, bay salt; and that which receives its consistence from the heat of the fire, called white salt. Low marshy grounds, disposed by nature for the reception of the sea-water, when the tide swells, and provided with banks and sluices to retain the same, are called a salt-marsh. These salt-marshes, the bottoms whereof they ram with a deal of care, are divided into several pits or basons, and into these basons, when the season is at hand, they let in the sea-water. The salt-season is from the middle of May to the end of August; in which time, the days being long, and the sun rays strongest, the salt is raised and crystallized better than in any other season. The water is admitted to the height of about six inches, after first having let it rest and warm two or three days, in large reservoirs without the works, that it may come in lukewarm. The water admitted, the sluices are shut, and the rest of the work left to the wind and the sun. The surface of the water, thickens at first imperceptibly, and becomes at length covered over with a slight crust; which hardening by the continuance of the heat, is wholly converted into salt. When the salt has received its full crystallization, they break it with a pole, upon which it sinks to the bottom; whence being dragged out again, they leave it some time in little heaps, about the edge of the pit, to complete the drying; and at length in greater heaps, which they cover over with straw or rushes, to secure them from rain. Eight, ten, or at most fifteen days, having thus completed the process, they open

the sluices, when the tide is rising, for a fresh stock of water, and gather the salt, till the season is over. Rainy weather is very pernicious to the work; for rain water mixing in any quantity with the sea-water, renders it useless. The salt is brown, green, or reddish, when taken out of the pits, on account of the mud slime, always mixed with it. In some places they make it into white salt, by boiling it.

The chief coasts for bay salt, are those of Bretagne, Saintonge, and the Pays d'Aunis, in France. Bay-salt is also made in Portugal, particularly at Setubal or St. Ubes. About four thousand tons of bay-salt are made annually at Porto Ferraio in Italy; large quantities also at Trapani in Sicily, and in various parts on the shores of the Mediterranean. Also in the Cape de Verd islands they prepare bay-salt, and particularly in the island of Tortuga, near the coast of Terra Firma, in America, which supplies the best part of North America.

The white salt of Normandy is made by refining the bay-salt, but has this colour naturally, when taken out of the pits. To make it, they gather a muddy sand on the flats of the shore, which the rising tide has covered, and impregnated with its waters for seven days. This sand being removed into pits for the purpose, discharges itself by degrees of all the water, which filtrates through some straw, wherewith the bottom of the pit is filled, and trickles into vessels, set on purpose to receive it; of which water they make the salt.

The English and Dutch, and in times of war the Danes and Swedes, take most of the salts of Bretagne. That of Guerande is preferred by the English and Irish to all the rest, as the best and whitest. That of Borneuf, though browner and heavier, is most used in France and in the Baltic.

The English and Dutch have frequently drove hard, in times of war, to do without the French salt, and to that end have endeavoured to supply their

wants from Spain, Portugal, and Italy ; but there is a disagreeable sharpness and serosity natural to them, which renders them not so fit for the salting of fish and flesh ; and they always eagerly return to the salts of Bretagne, as soon as any treaty has opened the commerce.

The process of obtaining *salt from springs*, by boiling or coction, is as follows. The boiling house is furnished with a furnace, and one or two large iron pans. The pan being filled with the liquor, a strong pitcoal fire is lighted, and when the water is lukewarm, some white of eggs, or blood of sheep or oxen, is thrown into it, and stirred about to clarify it ; and as the water gets hotter, the black frothy scum which arises, is taken off. After boiling the liquor briskly about four hours, a pan of about fifteen inches depth, will begin to form crystals on its surface. The pan is then filled up a second time with fresh water, and this second filling is boiled down, in the same manner as the first, and so a third, and fourth ; but in the evaporation of the fourth, when the crystals begin to form themselves, they slacken the fire, and only keep the liquor simmering. In this heat they keep it all the while the salt is granulating, which is nine or ten hours. When the salt lays nearly dry, they rake it all together, into a long heap, on one side of the pan, where it lies a while, to drain from the brine, and then is carried to the storehouse. In this manner, the whole process is performed in twenty-four hours. In some salt-works, they fill the pan seven times before they boil up the salt, and so make it out but once in two days. In the common way, of four boilings, with a pan of the usual size, containing one thousand three hundred gallons, they draw from fifteen to twenty bushels of salt every day, each bushel weighing fifty-six pounds.

When the salt is carried into the storehouse, it is put up into drabs, which are partitions, like stalls for horses, lined at three sides and the bottom, with

boards, and having a sliding board on the foreside, to draw up on occasion. The bottoms are made shelving, being highest at the back, and gradually inclining forward. By this means, the brine remaining among the salt, easily separates and runs from it, and the salt in three or four days becomes sufficiently dry. In some places, they use long and conic wicker baskets, and in others wooden troughs, with holes in the bottom, for this purpose.

What is called basket salt, is fine white salt, obtained from our salt-springs. It is usually the weakest of all salts.

Brine springs, are fountains which flow with salt-water. Of these there are a good many, particularly in South Britain. At a place called Saltwater Haugh, near Butterpy, in the Bishopric of Durham, there are a multitude of salt-springs, which rise in the river Weare, for the space of about forty yards in length, and ten in breadth, but particularly one, out of a rock, which is so strong, that in a hot summer, the surface will be covered with pure white salt. Namptwich on the river Weever, and Northwich on the confluence of the Weever and the Dan, in Cheshire, have very rich salt brines, the latter so much so, that they obtain six ounces of salt out of sixteen of water. That at Namptwich, according to the account of the people of the place, could be worked so, as to yield a sufficiency of salt for the whole kingdom. In Lancashire, the spring at Barton is also very rich.

The fossile or *rock salt*, makes a considerable article of commerce. The mines of Wilisca in Poland, and those near Eperies in Hungary, are particularly famous. Their depth and capacity are surprising, and within them is found a kind of subterraneous republic. The rocks of salt are hewn in form of great cylinders; the workmen using hammers, pickaxes, and chissels, as in stone quarries, to separate the several banks of stone. As soon as the massive pieces are

got out of the quarry, they break them into fragments, fit to be thrown into the mill, where they are ground, and reduced into a coarse flour, which serves all the uses of sea-salt. The salt-mines of Catalonia in Spain, are found in the mountains of the Duchy of Cerdonna.

The rock-salt exported from Liverpool, makes a considerable article of commerce, and goes principally to the Baltic.

**SALTPETRE, NITRE.** (F. *Saltpêtre, Nitre*; G. *Salpéter*; D. *Salpeter*; I. *Nitro, Salnitro*; S. *Nitro, Salitre*; P. *Salitre*; POL. *Saletra, Salnitra*; R. *Senitra*; L. *Nitrum*.)

Vegetable fixed alkali, combined with the nitrous acid, to the point of saturation, and an addition of some quick-lime, produces saltpetre.

Saltpetre is made in great plenty in the more southern parts of Europe; likewise in the southern parts of Persia, in China, the East Indies, and in North America. In Podolia, in Poland, it is obtained from tumuli or hillocks, which are the remains of former habitations. In Spain it is said, the inhabitants extract it from the soil, after a crop of corn. In America it has been found in limestone grounds, in the floors of pigeon houses, tobacco houses, or the ruins of old stables. In Hanover it is got by collecting the rakings of the streets, which are built of mud-walls; and the peasants are directed by law to build mud-walls, with the dung and urine of animals and some straw. After they have stood for some time, and the vegetable and animal substances are rotten, they afford a considerable quantity of nitre. In France it is obtained from accidental collections, as where loose earth has been exposed for some time to the contact of animal substances, like the grounds of stables, ruins of pigeon houses, sometimes from the mould upon the ground where dunghills have been laying. The general account is, that in the East Indies it is

obtained from the soil of certain districts, which are called saltpetre ground; where the soil is very cold, barren, and unhealthy. To extract the salt, it is there only necessary to gather large quantities of the impregnated earth, and to put them into a cavity, through which a great quantity of water is poured, which dissolves the nitre; and the lixivium runs into an adjacent pit, out of which it is lifted, in order to be evaporated, and obtained in the form of crystals. In Germany and France, the saltpetre boilers go about in search of these materials, and when, on making a small essay, they find that they will turn to account, they put the earth or other materials into a large tub, pour water upon it, and let it stand so for several days. A cock is placed at the bottom of the tub, and to its inside opening some straw is applied, so that when the cock is opened, the lixivium filters through the straw, and is received in another tub, and from thence conveyed in a copper, and boiled to a proper consistence for crystallization. The crystals are at first brown and very impure, but by repeated dissolution and crystallization, become white and pure.

Saltpetre in general, therefore, is extracted from artificial compounds or accidental mixtures, where animal and vegetable substances have been fully putrified, by being exposed to the air, with any spongy or loose earth, especially of the calcareous kind; open to the north or north-east winds, and more or less covered from the heat and rains. Cramer, an author of the greatest credit, informs us, that he made a little hut, with windows to admit the wind. In this he put a mixture of garden mould, the rubbish of lime, and putrid animal and vegetable substances. He frequently moistened them with urine, and in a month or two found his composition very rich in saltpetre, yielding at least one eighth part of its weight.

Saltpetre is of very extensive use in different arts,



being the principal ingredient in gunpowder, and serving as an excellent flux to other matters; whence its use in glass making. It is also possessed of a considerable antiseptic power; whence its use in preserving meat, to which it communicates a red colour. In medicine it is used as a diuretic, sedative, and cooler. Nitre is also used in the oil of vitriol manufactories.

**SAPPHIRE.** (F. *Saphir*; G. *Sapphir*; D. *Saffierstein*; I. *Zaffiro*; S. *Safir*; P. *Safira*; D.A. *Saphir*; Sw. *Saphir*; Pol. *Szafir*; R. *Jachant*; L. *Sapphirus*.)

The sapphire is a pellucid gem, which, in its finest state, is extremely beautiful and valuable, and inferior only to the diamond, in lustre, hardness, and price. Its proper colour is a pure blue: in the finest specimens it is of the deepest azure, and in others varies into paleness, in shades of all degrees, between that and a pure crystal brightness, without the least tinge of colour. This gem is distinguished into four sorts; the blue, the white, the water, and the milk sapphire.

This stone in its greatest perfection, is brought from the kingdom of Pegu in the East Indies; always in shape of pebbles. Very fine sapphires also, partly pebble, partly crystal-shaped, and of all the shades of blue, come from Bisnagar, Conanor, Calicut, and the island of Ceylon. The occidental sapphires are from Silesia, Bohemia, and many other parts of Europe; but they are greatly inferior in lustre and hardness to the oriental ones.

**SARDONYX**, a precious stone, consisting of a mixture of the chalcedony and cornelian: it is sometimes in strata, but at other times blended together.

Two kinds are generally distinguished; 1st. striped with red and white strata, which may be cut into cameo as well as the onyx; 2d. White, with red dendri-

tical figures, greatly resembling the Mocho stone, but with this difference, that the figures of the sardonix are of a red colour, the other black.

**SARSAPARILLA.** (F. *Salsepareille*; G. *Sassaparille*; D. *Sarzaparille*; I. *Salsapariglia*; S. *Zarzaparilla*; P. *Salsa-parilha*; DA. *Sarsa-parille*; Sw. *Sarsaparilla*; L. *Sarsaparilla*.)

Sarsaparilla is the root of the smilax sarsaparilla, a plant growing in America, and particularly abundantly in Jamaica, whence we receive it. It has stems of the thickness of a man's finger; they are jointed, triangular, and beset with crooked spines. The leaves are alternate, smooth, and shining on the upper side. The flower is yellow, mixed with red. The fruit is a black berry, containing several brown seeds. The roots, which are about the size of a goose quill, run superficially under the surface of the ground. The gatherers have only to loosen the soil a little, and to draw out the long fibres with a wooden hook. In this manner they proceed, till the whole root is got out. It is then cleared of the mud, dried, and made into bundles.

The sensible qualities of sarsaparilla, are mucilaginous and larinaceous; and it is esteemed in medicine as a gentle sudorific, and powerful in attenuating the blood, when impeded by gross humours.

**SASSAFRAS.** (F. *Sassafras*; G. *Sassafrass*; D. *Sassafrass*; I. *Sassafrasso*; S. *Sasafras*; P. *Sassafraz*, *Salsafraz*; DA. *Sassafras*; Sw. *Sassafras*; POL. *Sasafras*; R. *Sasafras*; L. *Sassafras*.)

The laurus sassafras, or sassafras tree, is a native of North America, and grows in the greatest perfection in Florida. Its roots are even with the surface of the ground. Its trunk, which is very straight, without leaves, and not high, is covered with a thick and dirty bark, of an ash colour, and throws out at its summit some branches, which spread out on the

coast. The leaves are disposed alternately, green on the upper, and white on the under surface, sometimes divided into three lobes, sometimes entire, of different sizes, from three to six inches long, and nearly as broad, with clusters of small yellowish flowers, succeeded by small blackish pendent berries, fixed to a red pedicle and to a calix of the same colour.

The root of the sassafras has a fragrant smell, and a sweetish, aromatic, subacid taste; the bark tastes much stronger than any other part, and the small twigs stronger than the large pieces. It is a warm aperient and corroborant, and frequently employed with good success for purifying and sweetening the blood and juices. For these purposes, decoctions are made from the rasped root or bark.

In America, the bark of this tree is used for dyeing worsted a fine lasting orange colour; some people also boil the peel of the root with the beer which they are brewing, because they believe it wholesome. The flowers are used instead of tea.

The first Spaniards who settled in America, would probably have fallen a sacrifice to the venereal disease, at least they would never have recovered from those dangerous fevers with which most of them were attacked on their arrival in Florida, had they not been taught by the Indians the use of the sassafras. This medicine, with many others, performing extraordinary cures in distant countries, seems to have lost almost all its efficacy in our climate. This is probably owing to those climates being more favourable for perspiration, to the plant losing part of its strength during a long voyage, and particularly to the nature of the disease, the obstinacy of which increases in our hemisphere, and with our mode of living.

**SATIN WOOD**, chiefly imported from Botany Bay. It is used for the most part by cabinet-makers.

SAUNDERS, SANDERS. (F. *Santal*, *Sandal*; G. *Sandelholz*; D. *Sandelhout*; I. *Sandalo*; S. *Sandalo*; P. *Sandalo*; DΛ. *Sandelholt*; Sw. *Sandel*; Pol. *Cyndal*; R. *Sandal*; L. *Santalum*.)

Saunders is a hard odoriferous wood, the produce of the *pterocarpus santalinus*, brought from the East Indies. Of this there are three sorts; the yellow, white, and red.

The yellow or citrine saunders, is a beautiful wood, of the colour of lemon peel, of a smell resembling a mixture of musk and roses, and of a somewhat acrid taste, with a slight bitterness.

The white saunders resembles the yellow, and is of the same fragrant smell, and aromatic taste, but in a more remiss degree. Both these sorts should be chosen sound, firm, heavy, and of a good smell when cut; they should also be chosen in the block, and not cut into chips, as they usually are.

The red saunders, is of a dense and compact texture, remarkably heavy, and very hard. It is brought to us in logs of considerable length, the out part of which is of a dusky, and the inner of a blood red. It has but little smell and taste.

Brazil wood is frequently sold for red saunders; but the latter can principally be distinguished from the former, by its not giving any tinge to aqueous liquors, whereas brazil wood imparts its colour to water.

These three kinds of wood enter into the materia medica; they are also used by the turners and cabinet-makers, and the red by the dyers.

SCAMMONY. (F. *Scamonée*; G. *Skammonie*; D. *Skamnoneum*; I. *Scamonea*; S. *Escamonea*; P. *Escamonea*; DΛ. *Skammonium*; Sw. *Scammonium*; L. *Scammonium*.)

Scammony is the produce of a species of *convolvulus*, or creeper plant, which grows wild in the vales between Nazareth and Mount Carmel.

The scammony is prepared from the root and the stalk of the plant, and, when genuine, ought to be like a fine clear gum, of a darkish grey, light, and brittle; and, in chewing, ought to yield a white milky froth.

The best scammony is brought from Marasch, a town about four days journey from Aleppo, near the confines of Armenia. It is thence brought to Aleppo, in small skins, and by the merchants sent to London and Marseilles. It was formerly to be had very good from Mount Carmel, by way of Acra; but at present, scarcely any comes from that place, as the Arabian inhabitants of the mountain have neglected to gather it, being more addicted to plunder than labour.

Scammony is regularly used in the materia medica, as a purgative.

SCARLET BERRIES; see KERMES.

SEED LAC; see LAC.

SELTZER WATER, is a mineral water, which springs up at Lower Seltzer, a village in the Electorate of Triers, about ten miles from Frankfurth on the Mayne. This is a very useful medicinal water. It contains, according to some, a small portion of calcareous earth, a native mineral alkali, and acid, also nearly one-seventh of its bulk of fixed air; which latter is more than is found in any other mineral water.

This water was formerly imported in considerable quantities; but, at present, almost all the seltzer water drunk in Great Britain, is artificial. This is more pleasant to the taste than the natural seltzer water; as the saline particles, of a disagreeable taste, and which contribute nothing to its medicinal virtue, are left out of the composition. It is likewise considerably stronger.

SENA, SENNA. (F. *Sené, Sené en feuilles*; G. *Senna, Senesblatter*; D. *Senebladen*; I. *Sena*; S. *Sen, Sena*; P. *Scene, Senna*; DA. *Semsblader*; Sw. *Sennetsblader*; POL. *Sene, Senna*; R. *Senetnüe listü; L. Sennæ folia.*)

The cassia senna, from which the sena leaf is taken, is a shrubby plant, cultivated in Persia and Syria, but particularly in Upper Egypt, and that part of Arabia which lies opposite to it. The leaves are of an oblong figure, sharp-pointed at the ends, about a quarter of an inch broad, and not a full inch in length, of a lively yellowish green colour, a faint, not disagreeable smell, and a subacid, bitterish, nauseous taste. That which is called sena of Alexandria, grows in great abundance in the territory of Abu Arisch in Arabia. The Arabians sell it at Mecca and Jidda, whence it passes, by the way of Suez and Kahira, to Alexandria, and is thence imported into Europe. It is brought from the above countries dried, and picked from the stalks. Some inferior sorts are brought from Tripoli, and other places; these may easily be distinguished, by the shape and dimensions of the leaves being different from the good sena, of a fresh green colour, without any yellow cast.

The senna Italica, or blunt-leaved sena, is a variety of the Alexandria species, which, by its cultivation in the South of France, has been found to assume this change. It is less purgative than the pointed-leaved sena.

Sena, in medicine, is a very useful cathartic.

SHELL LAC; see LAC.

SHUMAC. (F. *Sumac*, *Roure*, *Roux*; G. *Sumach*, *Schmack*; D. *Sumak*, *Smak*; I. *Sommaco*; S. *Zumaque*; P. *Sumagre*, *Cumagre*; DA. *Smak*, *Sumak*; SW. *Sumack*, *Smack*; POL. *Garbarskie drzewko*, *Macznika*; R. *Sumak*; L. *Rhus coriariorum*.)

The shumac plant is a myrtle leaved shrub, cultivated in Sicily, Portugal, the South of Spain, and France. - The French shumac is very little esteemed, even by the dyers of that country. Sicily shumac is the best and most valuable.

The leaves and flowers are stripped off the bush, dried, pounded to powder, and exported from Spain in skins, and from Sicily in bags. These plants are set in the shade of olive-trees, and remain in vigour about twenty years.

The prime quality of Sicily shumac comes from Alcamo, and is shipped in the Gulph of Castellomare. Inferior sorts come from Carini, Calatafini, Montreale, Termini, &c. There are also some places on the southern coasts of the island producing shumac, but of an indifferent quality. The crop, in Sicily, is made in July and August.

The goodness of shumac shews itself by its strong smell, fine greenish, lively colour, and by its being well ground, and free of stalks, though the Spanish shumac is never free of them.

Shumac, on account of its astringent quality, is used for tanning Spanish and other fine sorts of leather.

SICILIAN EARTH; see FOSSIL BEZOAR.

SILK. (F. *Soie*; G. *Siede*; D. *Zyde*, *Zy*; I. *Seta*; S. *Seda*; P. *Seda*; DA. *Silke*; SW. *Silke*; POL. *Jedwab*; R. *Schelk*; L. *Sericum*.)

Silk is a very soft, fine, bright thread, the work of an insect called bombyx, or the silk-worm.

As the silk-worm is a native of China, the culture of the silk, in ancient times, was entirely confined to that country. Till the reign of Justinian, the silk-worm was unknown beyond the territories of China; but silk was introduced into Persia long before that period. After the conquest of the Persian empire by Alexander the Great, this valuable commodity was brought into Greece, and thence conveyed to Rome. The first of the Roman writers extant, by whom silk is mentioned, are Virgil and Horace; but it is probable that neither of them knew from what country it was obtained, nor how it was produced. Among the Romans, silk was deemed a dress too expensive and delicate for men, and was appropriated wholly to women of eminent rank and opulence. Aurelian complained, that a pound of silk was sold at Rome for twelve ounces of gold; and it is said, he refused to give his wife permission to wear it, on account of its exorbitant price.

For several centuries, the Persians supplied the Roman Empire with the silks of China. Caravans traversed the whole latitude of Asia, in 243 days, from the Chinese ocean to the sea coasts of Syria, carrying this commodity. Sometimes it was conveyed to the ports of Guzerat and Malabar, and thence transported by sea to the Persian Gulph. The Persians, with the usual rapacity of monopolists, raised the price of silk to such an exorbitant height, that Justinian endeavoured, by means of his ally, the Christian Monarch of Abyssinia, to wrest some portion of the silk trade from the Persians. In this attempt he failed, but he obtained, in some measure, by an unforeseen event, the object which he had in view. Two Persian monks having been employed as missionaries in some of the Christian churches, which were established in different parts of India, had penetrated into the country of the Seres, or China. There they observed the labours of the silk-worm, and be-



came acquainted with all the arts of man in working up its productions into such a variety of elegant fabrics. They repaired to Constantinople, to explain to the Emperor the discoveries they had made; and, encouraged by his liberal promises, they undertook to bring to the capital a sufficient number of these wonderful insects, which they accomplished by conveying the eggs of the silk-worm in a hollow cane.

Vast numbers of these insects were soon reared in different parts of Greece. Sicily afterwards undertook to breed silk-worms, with equal success; and was imitated by several towns of Italy. In all these places extensive manufactories were established, and carried on with silk of domestic production. The demand for silk from the East diminished of course, and a considerable change took place in the nature of the commercial intercourse between Europe and India.

The SILK-WORM is a species of caterpillar, which, like all others of the same class, undergoes a variety of changes, that, to persons who are not acquainted with objects of this kind, will appear to be not a little surprising.

It is produced from a yellowish-coloured egg, about the size of a small pin's head, which has been laid by a greyish-coloured moth, vulgarly confounded with the butterfly. These eggs, in the temperature of this climate, even in summer, may be prevented from hatching, if they be kept in a cool place; and when the food on which the worm is fed is in perfection, the eggs need only be exposed to the sun for a day or two, when they will be hatched with great facility.

When the animal is first protruded from the egg, it is a small black worm, which is active in search of food. At this stage of his growth, the silk-worm requires to be fed with the youngest and most tender leaves. On these he will feed very freely for about eight days, during which period he increases in size to about a quarter of an inch in length. He is then

attacked with his first sickness, which consists in a sort of lethargic sleep, for about three days continuance, during which time he refuses to eat, and changes his skin; preserving the same bulk. This sleep being over, he begins to eat again during five days, at which term he is grown to the size of full half an inch in length. After this follows a second, then a third, and a fourth sickness, in every respect like the former; and after every sickness he feeds again for five days. At the time he is attacked by his fourth sickness, he is arrived at his full growth; and on recovering, he feeds once more during five days, with a most voracious appetite; after which he disdains his food, becomes transparent, a little on the yellowish cast, and leaves his silky traces on the leaves where he passes. These signs denote that he is ready to begin his cocoon. Thus it appears that the whole duration of the life of the worm, in this state of his existence, in our climate, is usually about forty days; twenty-eight of which days he takes food, and remains in his sick or torpid state about twelve: but it is to be observed, that warm weather shortens, and cold weather lengthens the periods of sickness.

When the worm is come to full perfection, it searches about for a convenient place for forming its cocoon, and mounts upon any branches or twigs that are put in its way for that purpose. After about two days spent in this manner, it settles in its place, and forms the cocoon by winding the silk, which it draws from its bowels, round itself into an oblong roundish ball. During this operation it gradually loses the appearance of a worm, its length is much contracted, and its thickness augmented. By the time the web is finished, it is found to be transformed into an oblong roundish ball, covered with a smooth shelly skin, and appears to be perfectly dead.

In this state it remains for several days, entirely motionless, in the heart of the cocoon, after which it

bursts, like an egg hatching, and from that comes forth a heavy, dull-looking moth, with wings, but these wings it never uses for flying. This creature forces its way through the silk covering which the worm had woven, goes immediately in quest of its mate, after which the female lays her eggs, and both male and female, without tasting food in this stage of their existence, die in a very short time.

The silk-worm, when at its full size, is from an inch and a quarter to an inch and a half in length, and about half an inch in circumference. He is either of a milk or pearl colour, or blackish: these last are esteemed the best. His body is divided into seven rings, to each of which are joined two very short feet. He has a very small point, like a thorn, exactly above the anus. The substance which forms the silk is in his stomach, which is very long, wound up as it were upon two spindles, and surrounded with a gum, commonly yellowish, sometimes white, but seldom greenish. When the worm spins his cocoon, he winds off a thread from each of his spindles, and joins them afterwards by means of two hooks, which are placed in his mouth, so that the cocoon is formed of a double thread.

Of silk-worms, as of most animals, there is a considerable variety of breeds, some of which are much more hardy, and possess qualities considerably different from others. This is a particular of much importance to be adverted to, at the time of beginning to breed these creatures in any place.

Though the silk-worm be a native of China, there is no doubt but it might be propagated in most parts of the temperate zones. The mulberry tree, upon the leaves of which it lives, is a hardy vegetable, bearing without injury even the winters of Siberia, and could without doubt be reared in Great Britain. Nature therefore has furnished us with every thing necessary for the silk manufacture.

The cocoons from which the silk is to be imme-

diately wound, must be exposed to the heat of an oven, in order to kill the chrysalis or aurelia, which would otherwise eat its way through the cocoon, and render it useless. Good cocoons are small, strong, and firm, have a fine grain, both ends round, and they are free from spots. Of the bad cocoons there are six species: 1. The *pointed* cocoons, one extremity of which ends in a point: the silk which covers the point is weak, and soon breaks or tears. 2. The *co-calons*, which are bigger, but the contexture is weak. 3. The *dupions*, or double cocoons. 4. The *soufflons*, which have a loose contexture; sometimes so loose that they are transparent. 5. The *perforated* cocoons, which have a hole at one end. 6. The *bad choquette*, which is composed of defective cocoons, spotted or rotten.

The cocoons which are kept for breeding, are called royal cocoons. The largest and the best cocoons ought to be preserved for breeding, about an equal number of males and females, though one male will serve two or three females, if the time of their coming out of the cocoon answers. About twelve or fifteen days after they begin to spin, the cocoons for breeding may be laid on sheets of white paper; as about this time the moth opens for itself a passage through the end of the cocoon. When this female has laid her eggs, which on an average may amount to two hundred and fifty, they are spread upon paper, and hung up to dry in some cool place.

The next operation is the winding of the silk; before which the cocoons must be prepared as follows.

1. Strip them of the waste silk that surrounds them, and which served to fasten them to the twigs. This burr is proper to stuff quilts, or other such uses; you may likewise spin it to make stockings, but they will be very coarse and ordinary.

2. You must sort your cocoons, separating them into different classes, in order to wind them apart. These classes are, the good white cocoons; the good

cocoons of all the other colours; the dupions; the cocalons, among which are included the weak cocoons; the good choquette; and lastly, the bad choquette. In sorting the cocoons, you will always find some perforated cocoons among them, whose worm is already born; these you must set apart for fleuret. You will likewise find a few soufflons; but being very few, they may be put among the bad choquette.

The good cocoons, as well white as yellow, are the easiest to wind; those which require the greatest care and pains are the cocalons; you must wind them in cooler water than the others, and if you take care to give them to a good windster, you will have as good silk from them as the rest. You must likewise have careful windsters for the dupions and choquettes. These two species require hotter water than the common cocoons.

The cocoons produce a thread of very unequal length; you may meet with some that yield more than one thousand two hundred and twenty ells, whilst others will scarcely afford two hundred ells. In general you may calculate the production of a cocoon from five to six hundred ells in length.

The silk imported into this country is the produce of Italy; Turkey, and the East Indies.

The kingdom of Naples is computed to produce about eight hundred thousand pounds weight of silk annually, of which half is supposed to be worked at home, and the other half exported raw. The exportation of raw silk from the Calabrias, through the Custom-house, is about fifty-three thousand pounds; but perhaps double that quantity is smuggled out. The exportation of thrown silk, upon an average of many years, amounts to one hundred and forty-eight thousand two hundred and seventeen pounds.

The red mulberry tree is invariably used as food for the silkworm in Calabria, and it is the opinion of the silk-workers, that worms fed with it produce a more compact, heavy silk, than those that live upon the

leaves of the white one. This, however, seems to be a prejudice, as the Chinese, Piedmontese, and Languedocians prefer the white sort. In case of a blight among the mulberry trees, bramble tops have been found the best succedaneum. The silk-worm houses in Calabria, are mostly the property of reputable families in Reggio, who furnish rooms, leaves, eggs, and every necessary implement; take two-thirds of the profit, and leave the rest for the attendants. A succession of eggs is imported from Leghorn, and other places, to renew the breed, and by frequent changes keep up the quality of the silk.

Silk is an important branch of the commerce of the island of Cyprus. The breeding of silk-worms here is not subject to the inconveniences arising from variations of the atmosphere, as it is in other parts. The finest and whitest silk is that produced in the environs of Famagusta and Carpasia. The orange and sulphur-coloured, come from Cythera, or the villages beyond the northern mountains: and that of a gold yellow colour, is produced in the territory of Paphos and the neighbouring country. That principally esteemed in Europe is the white silk, with which a little of the orange and sulphur-coloured is sometimes mixed. Venice and Leghorn receive both, though the white silk has also there the preference. The island produces, on an average, twenty-five thousand bags of silk. It is not uncommon, in Cyprus, to receive commissions from Constantinople, Aleppo, and Egypt, for silk which is afterwards sent to Europe, under the denominations of raw and thrown silk, from Bengal, China, Italy, and Turkey.

**SILVER.** (F. *Argent*; G. *Silber*; D. *Zilver*; I. *Argento*; S. *Plata*; P. *Prata*; DA. *Sölv*; Sw. *Silfver*; POL. *Srebro*; R. *Serebro*; L. *Argentum*.)

Silver, next to gold, is the most perfect, fixed, and ductile metal, and the whitest and most brilliant among them all. Its ductility and malleability is not

greatly inferior to that of gold, as a grain of silver leaf measures somewhat more than fifty-one square inches; and the silver wire used for astronomical purposes measures only the seven hundred and fiftieth part of an inch in diameter; which is no more than half the thickness of the hair of the human head. It is harder and more elastic than lead, tin, or gold; but less so than copper, platina, or iron. It is more destructible than gold, and is particularly acted upon by sulphureous vapours; hence its surface tarnishes in the air. Its specific gravity is to that of water nearly as eleven to one.

Though silver is much more difficult to calcine than other metallic matters, yet it is capable of being converted, after a long time, into a white calx, which, treated in a violent fire, affords an olive-coloured glass. It is found in the earth.

1. Native, generally of the fineness of sixteen carats. Most of the silver of Potosi in America, and of Kunsberg in Norway, is of this kind.

2. Native, alloyed with other metals, particularly with lead, which is said never to be found without some silver, though frequently in too small a quantity to defray the expense of separating it. The lead in only one of the smelting-houses at Holywell in Flintshire, produced no less than  $3126\frac{3}{4}$  lbs. of silver, from the year 1754 to 1756, and from 1774 to 1776. There are some lead ores in England, which, though very poor in that metal, contain between three hundred and four hundred ounces of silver in a ton of lead.

3. Silver mineralized by various substances, as with sulphur, arsenic, copper, antimony, lead, &c.

Silver combines in all proportions with copper, by which it is not deprived of its ductility, but rendered harder and more sonorous. It is on that account often used in bells. It is otherwise highly useful, on account of its indestructibility by fire and air, and its extreme ductility. Its fine colour renders it ex-

tremely proper for ornamental purposes, and it is applied like gold on the surface of different bodies. It likewise enters the texture of rich silks; but its most considerable use is that of being employed as money, of an inferior value to that of gold. In this case it is alloyed with one-twelfth part of copper. It is likewise often employed in making household utensils of all kinds, for which purpose it is usually alloyed with one twenty-fourth of copper, which gives it a greater degree of hardness and coherence, without rendering it in the least noxious.

The most considerable silver mines are at Potosi in South America, Kunsberg in Norway, Annaberg in Austria, the Hartz, Saxony in general, Schemnitz in Hungary, &c.

SIMILOR; see COPPER.

SKINS, *Fells*. (F. *Peaux*; G. *Felle*; D. *Vellen*; I. *Pelli*; S. *Pieles*; P. *Pelles*; DA. *Skind*, *Huder*; Sw. *Skinn*; POL. *Skory*; R. *Koshü*.)

Skin is the membrane stripped off the animal, to be prepared by the tanner and others, and converted into leather, &c.

The different sorts of skins brought from North America, for the use of the furrier, are enumerated under the article Furs, the stag and roebuck excepted.

Kid and lamb skins come from Italy and Spain; they ought to be very large, and free from blemish, and require to be very carefully examined by the purchaser.

Goat skins serve for morocco leather, and sometimes for parchment, by which the real chamois is frequently counterfeited. The goats of Barbary and the Indies are esteemed the most beautiful of any called common goats. Goat skins are chiefly imported into England from Switzerland, Germany, Spain, &c.; but large importations are made from



Hudson's Bay, Canada, and North America, of deer, buffalo, bear, and other skins. The Hudson's Bay Company are the chief importers of the fur skins.

There are also newtre skins, or the skin of the monkey, of which large quantities are imported from South America, and used as furs.

SLATE. (F. *Ardoise*; G. *Schiefer*; D. *Arduin*; I. *Lavagna*, *Lastra*; S. *Pizarra*; P. *Picarra*, *Ardoisa*; D.A. *Skifer*; Sw. *Skifver*; POL. *Lupny kamien*, *Tesannoi kamen*, *Tscherepiza*; L. *Schistus Ardesia*.)

Slate is a stone of a compact texture, and laminated structure, splitting into fine plates.

There are four species of slate.

First, *the whitish slate*, being a soft friable stone, of a tolerably fine and close texture, considerably heavy, perfectly dull and destitute of brightness, variegated with a pale brown, or brownish yellow. This species is common in many counties of England, lying near the surface of the ground. It is commonly used for covering houses.

Secondly, *the red slate*, is of a very fine, elegant, and smooth surface, considerably heavy, and of a very beautiful pale purple, glittering all over with small glossy spangles. This kind of slate is very common in the North of England, and is much valued as a strong and beautiful covering for houses.

Thirdly, *the common blue slate*, is of a fine smooth texture and glossy surface, moderately heavy, and of a pale grayish blue. This is also very common in the northern parts of England, and is used in most places for the covering of houses.

Fourthly, the friable, aluminous, *black slate*, being the Irish slate of the shops. It is common in many parts of Ireland, and is also found in some places in England.

The island of Eusdale, one of the Hebrides, on the west coast of Scotland, is entirely composed of slate.

The stratum is thirty-six feet thick. About two millions and a half of slates, at the rate of twenty shillings *per* thousand, are sold annually to England; Canada, the West Indies, and Norway. They are generally divided into scantlings and half scantlings. There are several slate quarries in Cornwall, Devonshire, and Wales. The latter are generally preferred, the former being softer than the latter.

Considerable quantities of coarse slates are found in many parts of Wales, particularly in a quarry near Llangynnog, in North Wales, which, from November 1775 to November 1776, yielded 904,000 slates, sold at from six to twenty shillings per thousand. Port Penrhyn, half a mile from Bangor, is the grand repository of the slate procured from Lord Penrhyn's quarries at Dolawen.

**SMALL NUTS; HAZEL NUTS.** (F. *Noisettes*, *Avelines*; G. *Haselnüsse*; D. *Hazelnooten*; I. *Nocciuole*, *Avellane*; S. *Avellanas*; P. *Avellaas*; DA. *Hasel nödder*; Sw. *Hussel nötter*; POL. *Laskowy orzech*; R. *Orechi*; L. *Avellanae*.)

These nuts are more nourishing than walnuts, but also harder to digest. To come to perfection, they require a dry season, and much rain will destroy them. Hence considerable quantities, and species superior to ours, are brought annually from Barcelona in Spain, from Sicily, and Naples. In the latter kingdom, the district of Avellino is almost covered with hazelnut bushes, which, in good years, bring in a profit of sixty thousand ducats. These bushes were originally imported into Italy from Pontus, and known among the Romans by the appellation of *Nux Pontica*, which, in process of time, was changed into that of *Nux Avellana*, from the place where they had been propagated with the greatest success. The proprietors plant them in rows, and, by dressing, form them into large bushes of many stems. Every year

they refresh the roots with new earth, and prune off the straggling shoots with much attention.

**SMALTS.** ((F. *Azur d'Hollande*; G. *Smalte Blaussel*; D. *Smalt*; I. *Smalto azzuro, Smaltino*; S. *Esmalte, Azul de Azur*; P. *Esmalte*; DA. *Smalt*; Sw. *Smalt*; POL. *Lazur*; R. *Lasor*; L. *Smaltum*.)

Zaffer is an impure gray calx of cobalt, which is prepared by first roasting and freeing the cobalt from all foreign bodies; after which it is well calcined, and sometimes mixed with fine sand.

Zaffer, if mixed with siliceous earth and potashes, and exposed to a strong fire, melts into a kind of blue glass, called Smalts, which, when ground very fine, obtains the denomination of powder blue.

Smalts are a most durable pigment, which perfectly withstands the fire, and is fit to produce every shade of blue. It is therefore employed in preference to any other colour, for tinging crystals, and for enamelling; for counterfeiting opaque and transparent precious stones, and for painting and varnishing real porcelain, earthen and potters' ware. The blue colour of this pigment inclines much to that of ultramarine, and in want of the latter article; or when too costly, it is indispensably necessary to the painter, for imitating the fine azure colour. The cheaper kind is employed to give a blueish tinge to new washed linen, though not without injury to the health, as well as to the linen.

The preparation of this new colour may be reckoned among the most beneficial inventions of modern times. The principal reason why many authors think that the ancients used smalts is, that various antiquities, both of painting and enamel, have been discovered, in which a blue appears that gives ground for conjecturing it was produced by cobalt; particularly blue enamelled figures of Egyptian deities, the blue squares in mosaic work, likewise the fine blue colour that the Chinese and people of Japan gave to their

porcelain, and the blue also seen on mummies, which, even after so many centuries, seems to have lost little or nothing of its beauty. But it has been proved by chemical experiments, that it is not only possible to give to glass and enamel a blue colour by means of iron, but that the before-mentioned antiquities shew not the smallest traces of cobalt.

About the end of the fifteenth century, cobalt seems to have been dug up in great quantities in the mines on the borders of Saxony and Bohemia. The invention of making an useful blue glass from cobalt, seems to fall about the period of 1540 and 1560. Christopher Schurer, a glass-maker at Platten in Bohemia, is said to be the inventor of the art. As painting in glass was then much cultivated in Holland, eight colour-mills were soon erected there, for which the cobalt was brought from Schneeberg, around which place colour-mills were afterwards also erected. At present the manufacture of smalts is almost entirely in the hands of the Dutch, who grind the German cobalt to great advantage.

*Azure*, among painters, is an expression which at present signifies in general a fine blue colour, but was formerly applied to lapis lazuli, called azure stone, and to the blue prepared from it, now called ultramarine. But since a blue has been extracted from cobalt, custom has applied to it the name of azure, although it differs considerably from the former, and is incapable of being used for the same purpose, and particularly for painting in oil. The name of azure is generally applied to the blue glass made from the earth of cobalt and vitrifiable matters. This glass, which is called smalts when in masses, is called azure only when reduced to a fine powder. Several kinds of azure are distinguished, according to its degree of beauty, by the names of fine azure, powdered azure, and azure of four fires. In general, the more intense the colour, and the finer the powder, the more beautiful and dear it is.

**SNAKE-ROOT.** (F. *Contragerva*; G. *Amerikanische, oder Peruanische Giftwurzel*; D. *Giftwortel*; I. *Contra-erba*; S. *Contra-yerba*; P. *Contra-erva*; DA. *Giftrod*; Sw. *Giftrot*; L. *Contragerva, Serpentaria*.)

There are several species of this root, all supposed to be counter poisons.

The Virginian snake-root has its leaves green and large, almost in figure of a heart; its fruit round; and its root, which is of a very strong aromatic smell, has at the bottom an infinite number of long, small filaments, representing a kind of beard. It was first brought into Europe by the English, from Virginia, where it is esteemed a sovereign remedy against the bite of the rattle-snake.

**SOAP; SOPE.** (F. *Savon*; G. *Seife*; D. *Zeep*; I. *Sapone*; S. *Jabon*; P. *Sabao*; DA. *Sæbe*; Sw. *Tval, Grüne Sapa*; POL. *Mydlo*; R. *Mülo*; L. *Sapo*.)

Soap is an unctuous kind of paste, made with oil or other kinds of fat, and an alkali, sometimes acuated with quick-lime. It is sometimes hard and dry, and sometimes soft and liquid. The principal soaps of our manufacture consist of an intimate union of the salt of potash with oil or animal fat. The common coarse soaps are made with tallow; the soft, blackish, and greenish sorts, with train-oil; and the fine hard white soaps, with olive-oil, and an alkali acuated with quick-lime, which promotes the action of the salt upon the oil, and at the same time disposes the soap to a hard and dry consistence, which it does not easily assume when made with plain alkali. A quantity of common salt is generally added in the process, the use of which is, when the oil has been incorporated by boiling with the alkaline salt of the ley, to promote the separation of the saponaceous concrete from the water.

The greatest quantities of soap are made in Spain,

Portugal, France, and Italy, olive oil being in those countries most plentiful.

SODA ; see BARILLA.

SPANISH JUICE ; see LIQUORICE.

SPARS, (G. *Sparren* ; D. *Spieren* ; DA. *Spiren* ; Sw. *Spirar* ; F. *Espars* ; I. *Preseie* ; S. *Purches* ; P. *Berchas*) are small masts, formed from various kinds of timber, especially pine and fir, which are employed chiefly as yards and topmasts for ships. They are for the most part imported from Norway, and the British provinces in North America.

SPELTER ; see ZINC.

SPERMACETI. (F. *Blanc de baleine*, *Sperme de baleine* ; G. *Waltrath* ; D. *Walschot* ; I. *Spermaceti* ; S. *Esperma de ballena*, *Espermaceti* ; P. *Espermaceti* ; DA. *Hvalrav*, *Hvalsperme* ; Sw. *Vallrat*, *Valraf* ; POL. *Spermaceti*, *Olbrod* ; R. *Spermazet* ; L. *Spermaceti*.)

Spermaceti is a whitish, unctuous, flaky substance, prepared from the oil, but chiefly from the brains of a species of whale, called *physeter macrocephalus*.

The method of preparing spermaceti is kept a secret, but the process is said to be this: the brains being taken out of the animal, are melted over a gentle fire, poured into moulds, and when cold, melted again; and this process is continued till they are purified. Others say, that after being pressed and drained, they are more thoroughly purified, by steeping them in a ley of alkaline salt and quick-lime. The brains are then washed, and cut into thin flakes or slices, with wooden knives.

Good spermaceti is glossy and semi-transparent; in fine white flakes: soft and unctuous to the touch, yet dry and friable; in taste somewhat like butter:

and of a faint smell, like that of tallow. It is apt in general to grow yellowish, and to contract a rancid fishy smell, if not carefully secured from the air. The more perfectly it has been purified at first, the less susceptible it is of those alterations: and after it has been changed, it may be rendered white and sweet again, by steeping it afresh in a ley of alkaline salt and quick-lime. It melts in a small degree of heat, and congeals again as it cools.

Spermaceti is of use in medicine, though chiefly only externally.

Spermaceti candles are of modern manufacture; they are made smooth, with a fine gloss, free from rings and scars, superior to the finest wax candles in colour and lustre; and when genuine, leave no spot or stain on the finest silk, cloth, or linen.

In the Transactions of the Royal Society of London, there is a treatise on the conversion of animal muscle into a substance much resembling spermaceti. It appears from a number of experiments, that if flesh is exposed to the action of water for a considerable time, it will change into a fatty substance; which discovery might be applied to profit, for making grease or fat for many purposes. The nitrous acid greatly accelerates this transformation, and takes away the offensive putrefactive smell. By submitting it to the action of the oxygenated muriatic acid, the fermentation goes on more slowly, but it may be procured quite white and pure.

**SPIKENARD.** (*G. Spikeanarden*; *D. Spikenard*; *DA. Spikenans*; *F. Nard Indienne*; *I. Spigenarde.*)

Consists of a number of slender, brittle threads, supposed to be a root. There are three sorts, namely, the East Indian, that which comes from Dauphny in France, and that which is found on the Alps. Spikenard is a fine stomachic cordial and elixir; it is used internally, and promotes perspiration.

It should be chosen very fresh, and of the most fragrant smell.

SPIRIT OF WINE; see BRANDY.

SPRUCE BEER is a cheap and wholesome liquor, said to be thus made. Take of water sixteen gallons, and boil the half of it. Put the boiled water, while in full heat, to the reserved cold part, which should be previously put into a barrel; then add sixteen pounds of treacle or molasses, with a few table spoonsfull of the essence of spruce, stirring the whole well together; add half a pint of yeast, and keep it in a temperate situation, with the bung hole open, for two days, till the fermentation be abated. Then close it up, or bottle it off, and it will be fit for being drank in a few days afterwards.

The essence of spruce is extracted from the small twigs or sprouts of the black and white spruce fir.

The Dantzic spruce beer is reckoned the best; the taste of the American spruce is less agreeable, and it is not so nourishing.

SPUNGE. (F. *Eponge*; G. *Schwamm*, *Badeschwamm*; D. *Spongie*, *Spons*; I. *Spugna*, *Spungia*; S. *Esponja*; P. *Esponga*; DA. *Svamp*; SW. *Svamp*; POL. *Gebka*; R. *Guba grezkaja*; L. *Spongia*.)

Sponge is a plant, of very irregular figure, generally to be met with in shops, only in pieces. Its texture is cavernous and porous. Its great elasticity, and its property of imbibing, and as readily parting with a large quantity of water, render it useful.

Sponge is to be chosen as light as possible, perfectly clean and free from stone, of as pale a colour as may be, with small holes, and fine and soft to the touch.

The greatest part of the sponge we use, is brought



from Aleppo and Smyrna. It grows in the Archipelago, at considerable depths, on the rocks about some of the islands there, and multitudes of people make a trade of diving for it. It is also common in the Mediterranean, and many other seas, though in general browner or yellower, and not so fine as that of the Archipelago. It grows in large masses to rocks and stones, sometimes to large shells; and is sometimes round, sometimes flat, sometimes hollow like a funnel.

**SQUILL, SEA-ONION.** (F. *Scille*, *Oignon marin*; G. *Mcerzwiebel*; D. *Zeeajuin*, *Squille*; I. *Scilla*, *Cipolla marina*; S. *Cebolla albarrana*; P. *Cebola alvarraa*; DA. *Skille*, *Strandlögrod*; Sw. *Skilla*, *Hafs-lök*; POL. *Cobula zamorska*; R. *Luk morskii*; L. *Scilla*, *Squilla*.)

The squill is a plant, with a large, bulbous, onion-like root: from which rise, first a naked stalk, bearing several hexapetalous white flowers, and afterwards large green lily-like leaves, with a remarkable rib in the middle of each. It grows spontaneously on sandy shores, in Spain, and in the Levant, whence we are annually supplied with the roots. They should be chosen large, plump, fresh, and full of a clammy juice: some are of a reddish colour, and others white; but no difference is observed in the quality of the two sorts. This root is to the taste very nauseous, intensely bitter and acrimonious; much handled, it ulcerates the skin. Taken internally, it serves as a powerful attenuant and aperient.

**STARCH.** (F. *Amidon*; G. *Amidam*; D. *Amydon*, *Ameldonk*; I. *Amido*, *Amito*; S. *Amidon*, *Almidon*; P. *Amido*; DA. *Amdam*; Sw. *Stärkelse*; POL. *Krochmal*; R. *Kruchmal*; L. *Amylum*.)

Starch is the sediment found at the bottom of vessels, wherein wheat has been steeped in water: of this fecula, after the bran is separated from it, by passing

through sieves; they form a kind of loaves, which being dried in the sun, or an oven, are afterwards broke in little pieces, and so sold as starch.

Starch is also made of potatoes, and rice, but both sorts are reckoned injurious to linen.

The best starch comes from Poland.

**STAVES, PIPE-STAVES.** (G. *Pipenstabs*; D. *Pipeſtaver*; F. *Douves a Pipe*; I. *Doghe di botti*.)

The staves, or long narrow pieces of timber, of which wine pipes, hogsheds, barrels, casks, &c. are formed. Pipe-staves are made from various kinds of wood, more especially oak and ash: considerable importations are made from Hamburgh, Stettin, Memel, Dantzic, and other parts of the North of Europe, also from Quebec and other places in North America.

**STICK-LAC**; see **LAC**.

**STONE COAL**; see **PIT-COAL**.

**STORAX.** (F. *Styrax, Storax*; G. *Storax*; D. *Styrax, Storax*; I. *Storace*; S. *Estoraque*; P. *Estoraque, Storage*; DA. *Storax*; Sw. *Storax*; POL. *Styrax*; R. *Stirax*; L. *Styrax*.)

Storax is a resinous drug, which issues in a fluid state, from incisions made in the trunk or branches of the styrax officinale, or storax tree. Two sorts of this resin have been commonly distinguished; the storax in the tear, and the common storax.

The storax in the tear is scarcely, if ever, found in separate tears, but in masses, sometimes composed of whitish, and pale reddish brown tears, and sometimes of an uniform reddish yellow, or brownish appearance; unctuous and soft like wax, and free from visible impurities. This is supposed to be the sort which the antients received from Pamphylia in reeds or canes, and which was thence named *calamita*.

The common storax, is in large masses, considerably lighter and less compact than the former, and having a large admixture of woody matter, like sawdust. Indeed there is scarcely any other than this impure storax to be met with in trade.

This odoriferous drug, though formerly a familiar remedy as a resolvent, has now no place in any of the officinal compounds, and its use seems to be limited to that of an incense.

**SUGAR.** (F. *Sucre* ; G. *Zucker* ; D. *Suiker* ; I. *Zuccaro* ; S. *Azucar* ; P. *Assucar* ; D $\Delta$ . *Suker* ; Sw. *Socker* ; Pol. *Cukier* ; R. *Sachar* ; L. *Saccharum*.)

Sugar is a solid, sweet substance, obtained from the sugar-cane ; or, according to chemists, an essential salt, capable of crystallization ; of a sweet and agreeable flavour, and contained in a greater or smaller quantity, in almost every species of vegetables, but most abundant in the sugar-cane. Sugar is of the same nature as honey ; it yields the same principles ; it is a native vegetable soap, containing an oil miscible with water, by means of a salino-acid substance.

As the sugar-cane is the principal production of the West Indies, and the great source of their riches, it may justly be esteemed one of the most valuable plants in the world. The quantity consumed in Europe, is estimated at nine millions sterling, and the demand would probably be greater, if it could be sold at a reduced price.

From the few remains of the Grecian and Roman authors which have survived the ravages of time, we can find no proofs that the juice of the sugar-cane was known at a very early period. There can be no doubt, however, that in those countries where it was indigenous, its value was not long concealed. It is not improbable, that it was known to the ancient Jews ; for there is some reason to suppose, that the

Hebrew word, which by our translators sometimes is rendered calamus, and sometimes sweet-cane, does in fact mean the sugar-cane.

The sugar-cane was first made known to the western parts of the world, by the conquests of Alexander the Great. Strabo relates, that Nearchus his admiral, found it in the East Indies, in the year before Christ 325. It is evidently alluded to in a fragment of Theophrastus, preserved in Photius. Varro, who lived A. D. 68, describes it in a fragment quoted by Isidorus, as a fluid pressed from reeds of a large size, which was sweeter than honey. Dioscorides, about the year 35 before Christ, says: "There is a kind of honey, called saccharon, which is found in India and Arabia Felix. It has the appearance of salt, and is brittle when chewed. If dissolved in water, it is beneficial to the bowels and stomach, useful in diseases of the bladder and kidneys, and, when sprinkled on the eye, remove those substances that obscure the sight." This is the first account we have of its medical qualities. Galen often prescribed it as a medicine. Lucan relates, that an oriental nation, in alliance with Pompey, used the juice of the cane as a common drink. Pliny says, it was produced in Arabia and India, but that the best came from the latter country. It is also mentioned by Arrian, in his Periplus of the Red Sea, by the name of *sachar*, as an article of commerce from India to the Red Sea. Ælian, Tertullian, and Alexander Aphrodisæus, mention it as a species of honey procured from canes.

That the sugar cane is an indigenous plant in some parts of the East Indies, we have the strongest reason to believe: for Thunberg found it in Japan, and has accordingly mentioned it as a native of that country, in his *Flora Japonica*, published in 1784. Osbeck also found it in China in 1751. It may indeed have been transplanted from some other country, but as it does not appear from history that the inhabitants of

China or Japan ever carried on any commerce with remote nations, it could only be conveyed from some neighbouring country. Marco Polo, a noble Venetian, who travelled in the East about the year 1250, found sugar in abundance in Bengal.

Vasco de Gama, who doubled the Cape of Good Hope in 1497, relates, that a considerable trade in sugar was carried on in the Kingdom of Calicut. On the authority of Dioscorides and Pliny too, we should be disposed to admit, that it is a native of Arabia, did we not find, on consulting Niebuhr's travels, that this botanist has omitted it, when enumerating the most valuable plants of that country. If it be a spontaneous production of Arabia, it must still flourish in its native soil. Bruce found it in Upper Egypt. If we may believe the relation of Giovan Lioni, a considerable trade was carried on in sugar in Nubia in 1500: it abounded also at Thebes, on the Nile, and in the northern parts of Africa, about the same period.

There is reason to believe that the sugar-cane was introduced into Europe during the crusades; expeditions, which however romantic in their plan, and unsuccessful in their execution, were certainly productive of many advantages to the nations of Europe. Albertus Aquensis, a monkish writer, observes, that the Christian soldiers in the Holy Land, frequently derived refreshment and support, during a scarcity of provisions, by sucking the canes. This plant flourished also in the Morea, and in the islands of Rhodes and Malta; from which it was transported into Sicily. The date of this transaction is not easily ascertained, but we are sure, that sugar was cultivated in that island, previously to the year 1166; for Lafitau the Jesuit, who wrote a history of the Portuguese discoveries, mentions a donation made that year, to the monastery of St. Bennet, by William the Second, King of Sicily, of a mill for grinding sugar

canes, with all its rights, members, and appurtenances.

The quantity of sugar canes now cultivated in Sicily, is very inconsiderable, and Sicilian sugar is quite a rarity. It is of good colour and quality, but from want of encouragement or industry, is almost entirely supplanted by foreign sugars. This culture is in its greatest vigour on the eastern coast of Val-di-Noto, but might be extended to advantage, in many other districts. The canes grow to a fine size, and are very juicy, thrive almost without care, have heat and moisture enough, and neither hurricanes nor insects to apprehend; labour is dear, and hands scarce, but certainly not so much, as to prevent the Sicilians from underselling foreigners, at their own market at least.

There is even sugar produced in Egypt, the canes growing in Upper Egypt; but it is so ill prepared, that they cannot sell it so cheap as the American sugars.

From Sicily, the sugar-cane was conveyed to Spain, Madeira, the Canary, and Cape de Verd islands, soon after they were discovered in the fifteenth century.

An opinion has prevailed, that the sugar-cane is not a native of the western continent, or its adjacent islands the West Indies, but was conveyed thither by the Spaniards or Portuguese, soon after the discovery of America by Columbus. From the testimony of Peter Martyr, in the third book of his first Decade, composed during Columbus's second voyage, which commenced in 1493, and ended in 1495, it appears, that the sugar-cane was known at that time in Hispaniola. It may be said that it was brought thither by Columbus; but for this assertion we have found no direct evidence, and though we had direct evidence this would not prove that the sugar-cane was not an indigenous plant of the West Indies. There are au-

thors of learning, who after investigating this subject with attention, do not hesitate to maintain, that it is a native both of the islands and of the continent of America.

The sugar-cane, or *saccharum officinarum* of botanists, is a jointed reed, commonly measuring, the flag part not included, from three feet and a half, to seven feet in height, but sometimes rising to twelve feet. When ripe it is of a fine straw colour, inclining to yellow, producing leaves or blades, the edges of which are finely and sharply serrated, and terminating in an arrow, decorated with a panicle. The joints in one stalk, are from forty to sixty in number, and the stalks rising from one root, are sometimes very numerous. The young root ascends from the earth, like the point of an arrow; the shaft of which soon breaks, and the two first leaves, which had been inclosed within a quadruple sheath of seminal leaves, rise to a considerable height.

As the cane is a rank succulent plant, it must require a strong deep soil to bring it to perfection, perhaps indeed no soil can be too rich for this purpose. The soil which experience has found to be the most favourable to the cultivation of it in the West Indies, is the dark grey loam of St. Christopher's, which is so light and porous, as to be penetrable by the slightest application of the hoe. The under stratum is gravel, from eight to twelve inches deep. Canes planted in particular spots in this island, have been known to yield eight thousand pounds of Muscovado sugar from a single acre. The average produce of the island, for a series of years, has been sixteen thousand hogsheads of sixteen cwt. which is one half only of the whole cane-land, or eight thousand five hundred acres. When annually cut, it gives nearly two hogsheads of sixteen cwt. *per acre*, for the whole of the land in ripe canes. Next to the ashy loam of St. Christopher's is the soil which in Jamaica is called brick mould, containing a mixture of clay and sand.

After this may be reckoned the deep black mould of Barbadoes, Antigua, and some other of the Windward Islands.

As the cane requires a great deal of moisture, to bring it to maturity, the most proper season for planting it, is in the months of September and October, when the autumnal rains begin, that it may be sufficiently luxuriant, to shade the ground, when the dry weather sets in. A January plant commonly turns out well likewise.

The sugar-cane is propagated by the top shoots, which are cut from the tops of the old canes. Two of them are sufficient for a cane hole. These being placed longitudinally in the bottom of the hole, are covered with mould about two inches deep; and in about twelve or fourteen days the young sprouts begin to appear.

In most parts of the West Indies, it is usual to plant only a certain proportion of the cane land, commonly one-third, in annual rotation. Canes of the first year's growth, are called *plant canes*. The sprouts that spring from the roots of canes which have been previously cut for sugar, are called *ratoons*; the first yearly returns from their roots are called first ratoons; the second year's growth second ratoons.

The sugar-cane is liable to be destroyed by monkeys, rats, and mice. The upland plantations suffer greatly from monkeys, and the lowland plantations as much by rats, and mice. The sugar-cane is also subject to a disease called the blast; the fine, broad, green blades, then become sickly, dry, and withered; soon after they appear stained in spots, and if these spots are carefully examined, they will be found to contain innumerable eggs of an insect, like a bug, which are soon quickened, and cover the plants with vermin. The juice of the canes thus affected becomes sour, and no future shoot issues from the joints.



The crops of sugar-canes do not ripen precisely at the same period in all the colonies. In the Danish, Spanish, and Dutch settlements, they begin in January and continue till October. This method does not imply any fixed season for the maturity of the sugar-cane. The plant, however, like others, must have its progress; and it must necessarily follow, from the custom these nations have adopted, of continuing to gather their crops for ten months without intermission, that they cut some canes which are not ripe enough, and others that are too ripe, and then the fruit has not the requisite qualities. The time of gathering them should be at a fixed period, and probably the months of March and April, when the English cut their canes, are the fittest for it; because all the sweet fruits are ripe at that time, while the sour ones do not arrive to a state of maturity, till the months of July and August. The English, however, are not induced to do so on account of the ripeness of the cane. The drought that prevails in their islands, renders the rains which fall in September, necessary to their planting; and as the canes are eighteen months in growing, this period always brings them to the precise point of maturity.

The time of crop in the sugar islands, is the season of gladness and festivity to man and beast. So palatable, salutary, and nourishing, is the juice of the cane, that every individual of the animal creation, drinking freely of it, derives health and vigour from its use. The meagre and sickly among the negroes, exhibit a surprising alteration in a few weeks after the mill is set in action. The labouring horses, oxen, and mules, though almost constantly at work during this season, yet, being indulged with plenty of the green tops of this noble plant, and some of the scummings from the boiling-house, improve more than at any other period of the year; and even the pigs and poultry fatten on the refuse.

The plants being cut, the branches at the top are given to the cattle for food; the top shoot, which is full of eyes, is preserved for planting. The canes are cut into pieces about a yard long, tied up in bundles, and carried in carts to the mill, where they are bruised, and the juice pressed out of them, which is received in a leaden bed, and thence conveyed into a vessel called the receiver. The refuse, or macerated rind of the cane, called cane-trash, serves for fuel to boil the liquor.

The juice, as it flows from the mill, taken at a medium, contains eight parts of pure water, one part of sugar, and one part consisting of coarse oil, and mucilaginous gum, with a portion of essential oil.

As this juice has a strong disposition to fermentation, it must be boiled as soon as possible. From the receivers therefore it is led into the boiling-house, where it is received into one of the clarifiers. When the clarifier is filled, a fire is lighted, and a quantity of Bristol quicklime in powder, which is called temper, is poured into the vessel. The use of the lime is, to unite with the superabundant acid, which for the success of the process, it is necessary to get rid of. The heat then is suffered gradually to increase, till it approaches within a few degrees of the heat of boiling water, that the impurities may be thoroughly separated. But if the liquor was suffered to boil with violence, the impurities would again incorporate with it. It is known to be sufficiently heated, when the scum begins to rise in blisters, which break into white froth. The fire is then suddenly extinguished, by means of a damper, and the liquor is allowed to remain about an hour undisturbed, during which time the impurities are collected in scum on the surface. The juice is then conveyed from the clarifier into the evaporating boiler, commonly termed the grand copper. The scum being of a tenaceous gummy nature,

does not flow out with the liquor, but remains behind in the clarifier.

If the juice has been obtained from good canes, it generally appears transparent, when flowing in the grand copper. Here the liquor is allowed to boil, and as the scum rises, it is taken off. The scumming and evaporation are continued, till the liquor becomes finer and thicker, and so far diminished in bulk, that it may be easily contained in the second copper. When put into the second copper, it is nearly of the colour of Madeira wine; the boiling and scumming are continued, and if the impurities be considerable, a quantity of limewater is added. This process is carried on, till the liquor be sufficiently diminished in quantity, to be contained in the third copper. After being purified a third time, it is put into the fourth copper, which is called the teache, where it is boiled and evaporated, till it is judged sufficiently pure to be removed from the fire. To judge of the purity of the liquor, many of the negroes examine the appearance of the grain on the back of the ladle. But the practice most in use, is to judge by what is called the touch; i. e. taking up with the thumb a small portion of the hot liquor from the ladle, and as the heat diminishes, drawing with the forefinger the liquid into a thread. This thread will suddenly break, and shrink from the thumb to the suspended finger, in different lengths, according as the liquor is more or less boiled. The proper boiling length for strong Muscovado sugar, is generally determined by a thread of a quarter of an inch long.

The juice being thus purified, by passing through the clarifier and four coppers, it is poured into coolers, which are shallow wooden vessels. As the liquor cools, the sugar grains collect into an irregular mass of imperfect crystals, separating from the molasses. It is then removed from the cooler, and conveyed to the curing-house, where the molasses drain from it. For receiving them, there is a large cistern,

the sloping sides of which are lined with boards. Directly above the cistern, a frame of joist-work without boarding is placed, on which empty hogsheads without heads are ranged. The bottoms of these hogsheads are pierced with eight or ten holes, in each of which the stalk of a plantain leaf is fixed, so as to project six or eight inches below the joists, and rise a little above the top of the hogshead. The hogsheads being filled with the contents of the cooler, consisting of sugar and molasses, the latter being liquid, drain through the spongy stalk, and drop into the cistern. After the molasses are drained off, the sugar becomes dry and fair, and is then called muscovado or raw sugar.

This is the process for extracting sugar, generally adopted in the West India islands, according to the latest improvements. It will not be disagreeable now to learn, by what methods the French make their clayed sugars purer and whiter than our muscovados. A quantity of sugar from the cooler, is put into conical pans or earthen pots, called by the French formes, having a small perforation at the apex, which is kept closed. Each cane, reversed on its apex, is supported in another earthen vessel. The syrup is stirred together, and then left to crystallize. At the end of fifteen or sixteen hours, the hole in the point of each cone is opened, that the impure syrup may run out. The base of these sugar loaves is then taken out, and white pulverized sugar substituted in its stead; which being well pressed down, the whole is covered with clay moistened with water. This water filters through the mass, carrying the syrup with it, which was mixed with the sugar, but which by this management flows in a pot substituted in the place of the first. This second fluid is called fine syrup. Care is taken to moisten, and keep the clay to a proper degree of softness, as it becomes dry. The sugar loaves are afterwards taken out, and dried in a stove for eight or ten days, after which they are pulverized,

packed, and exported to Europe, where they are still further purified. The reason assigned, why this process is not universally adopted in the British sugar islands, is this, that the water which deludes, and carries away the molasses, dissolves and carries with it so much sugar, that the difference in quality does not pay for the difference in quantity. The French planters probably think otherwise. All the sugar coming from the East Indies is clayed and manufactured in a similar manner to that in the French West India islands. But as there are no slaves, the sugar estates in the East are conducted in a very different and more improved manner, from what they are in the West India islands. The superintendant of a sugar estate agrees to give such a price p. pecul to any set of tradesmen, for cutting all his crop of cane, carrying them to the mill, and grinding them. With a second set he agrees to boil them at so much p. pecul; with a third to clay them, &c. This, like all other complex arts, by being divided into several branches, renders the labour cheaper and the work more perfectly done.

The art of refining sugar was first made known to the Europeans by a Venetian, who is said to have received 100,000 crowns for the invention. This discovery was made before the new world was explored; but whether it was an invention of the person who first communicated it, or whether it was conveyed from China, where it had been known for a considerable time before, cannot now perhaps be accurately ascertained. We find no mention made of the refining of sugar in Britain till the year 1659, though it probably was practised several years before; for in the Portuguese island of St. Thomas, in 1624, there were seventy-four sugar ingenios, each having upwards of two hundred slaves.

The sugar which undergoes the operation of refining in Europe, is either raw sugar, sometimes called muscovado, or it is clayed sugar. The raw sugar ge-

nerally contains a certain quantity of molasses as well as earthy and feculent substances, whereas the clayed sugar is freed from its molasses. The first process which sugar undergoes, which is to be refined, is called clarification. It consists in dissolving the sugar in a certain proportion of lime-water, adding a proper quantity of bullock's blood, and exposing it to heat, in order to remove the impurities.

The heat is increased gradually, till it approaches that of boiling water. By the assistance of the heat, the animal matter which was thrown in, coagulates, at the same time that it attracts all the solid, feculent, and earthy matter, and raises it to the surface, in the appearance of a thick foam of a brownish colour; when they are skimmed off. As the feculencies are never entirely removed by a first process, a second is necessary; and the same operation is repeated a third, and even a fourth time; but in the two latter operations, no addition is made to the liquor, except water. If the different processes have been properly conducted, the solution will be freed from every impurity, and appear transparent. It is then conveyed into an oblong basket, about sixteen inches deep, lined with a woollen cloth; and after filtering through this cloth, it is received in a cistern or copper, which is placed below.

The solution being thus clarified, it undergoes a second general operation, called evaporation. Fire is applied to the copper into which the solution was received, and the liquid is boiled till has acquired the proper degree of consistency. A judgment is formed of this, by taking up a small portion of the liquid, and drawing it into a thread. When after this trial, it is found sufficiently viscous, the fire is extinguished, and the liquid poured into coolers. It is then stirred violently by an instrument called an oar. This is done in order to diminish the viscosity, and promote the granulation. When the liquid is properly mixed and cooled, it is then poured into moulds of the form

of a sugar loaf. The small ends, which are lowest, are placed in pots; and they have each of them apertures stopped up with linen, for filtering the syrup. When the moulds are filled, and the contents still in a fluid state, it is necessary to stir them, that no part may adhere to the moulds, and that the small crystals which are just formed, may be equally diffused through the whole mass. When the sugar is completely crystallized, the linen is taken away from the apertures in the moulds, and the syrup descends into the pots in which the moulds are placed. After this a stratum of fine white clay, diluted with water, is laid on the upper part of the loaf. The water descending through the sugar by its own weight, mixes with the syrup, which still remains in the body of the loaf, and washes it away. When the clay dries, it is replaced every time by fresh moist clay. After the loaves have stood some days in the moulds, and have acquired a considerable degree of firmness and solidity, they are taken out, and carried to a stove, where they are gradually heated to fifty degrees of Reaumur, in order to dissipate any moisture which may be still confined in them. After remaining in the stove eight days they are taken out, and being wrapped in blue paper, they are ready for sale. This process refers to sugar once refined; double refined sugar is clarified by white of eggs instead of blood, and fresh water instead of lime water.

The beauty of refined sugar, when formed into loaves or lumps, consists in whiteness, joined to a smallness of grain; in being dry, hard, and somewhat transparent.

**SUGAR-CANDY.** (F. *Sucre Candi*; G. *Kandiszucker*; D. *Kandy, Kandyzuiker*; I. *Zucchero candi o candito*; S. *Azucar piedra ó cande*; P. *Assucar candi*; DA. *Sukkerkandi*; Sw. *Candisocker, Socker-candi*; POL. *Cukier lodowaty*; R. *Ledenez*; L. *Saccharum crystallinum.*)

Sugar-candy is a preparation of sugar, made by melting and crystallizing it six or seven times over, to render it hard or transparent. It is of three kinds; white, yellow, and red. The white comes from the loaf, the yellow from the clayed, and the red from the muscovado sugar.

**SULPHUR**; see **BRIMSTONE.**

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## T.

**TALLOW.** (F. *Suif*; G. *Talg*; D. *Tælg, Talg*; I. *Sevo, Segó*; S. *Sebo*; P. *Sebo*; DA. *Tælg, Talg*; Sw. *Talg*; POL. *Lay*; R. *Salo toplenoe*; L. *Sebum.*)

Tallow is a sort of animal fat, melted down and clarified; being used in making soap, and the dressing of leather, but chiefly in the making of candles.

Tallow is either yellow or white candle, or soap tallow. Its goodness consists in its sweetness and purity. Our chief importation of tallow is from Russia; considerable quantities are also brought to Europe from America.



**TAMARINDS.** (F. *Tamarins* ; G. *Tamarinden* ; D. *Tamarinden* ; I. *Tamarindo* ; S. *Tamarindo* ; P. *Tamarinho* ; D<sub>A</sub>. *Tamarin* ; Sw. *Tamarind* ; L. *Tamarindus*.)

The tamarind tree, or tamarindus Indica, rises to the height of thirty or forty feet, sending off numerous large branches, which spread to a considerable extent, and have a beautiful appearance ; the trunk is erect, and covered with rough bark, of a greyish or ash colour ; the leaves are small and pinnated, and of a yellowish green : the flowers resemble the papilionaceous kind, and grow in lateral clusters : the fruit is a pod of a roundish compressed form, from three to five inches long, containing two, three, or four seeds lodged in a dark pulpy matter, of a vineous taste, of which a wholesome refreshing liquor is prepared.

The fruit or pods are gathered in the West India islands, in June, July, and August, arriving sooner to maturity in some parts than in others. The pulp of the tamarind, with the seeds connected together by numerous tough strings or fibres, are brought to us free from the outer shell, and commonly preserved in syrup. According to Long, tamarinds are prepared for exportation at Jamaica in the following manner. The pods are gathered when full ripe ; the fruit is then taken out of the pod, cleared from the shelly fragments, and placed in layers in a cask ; boiling syrup just before it begins to granulate, is poured in, till the cask is filled. The syrup pervades every part, quite down to the bottom, and when cool, the cask is headed for sale. A better mode of preserving this fruit, is with sugar, well clarified with eggs, till a transparent syrup is formed, which produces a pleasanter flavour.

The tamarind tree is a native of both Indies, of America, Arabia, and Egypt. The fruit produced in the East-Indies, is more esteemed than that of the West, and easily to be distinguished by the greater

length of the pods, and the pulp being dryer, and of a darker colour. From the East-Indies the pulp is also brought to us preserved without sugar, which makes it better adapted for medicinal composition.

This fruit is employed as a desert, and in medicine as a laxative, for abating thirst and heat in various inflammatory complaints, likewise for correcting putrid disorders.

TAR. (F. *Goudron*; G. *Theer*; D. *Teer*; I. *Catrame*; S. *Alquitran*; P. *Alcatrao*; D $\Delta$ . *Tiære*; Sw. *Tjära*; POL. *Smola gesta*; R. *Degot, Smola shitkaja*; L. *Pix liquida*.)

Tar is mostly made from the wood *pinus pinea* pin-caster, or wild pine-tree. When they have obtained all they can from the sap of the tree, for the manufacture of turpentine and resin, they cut it down, and hewing the wood into billets, they fill a pit, dug in the earth, with these billets, and being set on fire, there runs from them, while they are burning, a black thick matter. This naturally falls to the bottom of the pit, and is the tar. The top of the pit is covered with tiles, to keep the heat in, and there is at the bottom a little hole, out of which the tar runs like oil. If this hole be made too large, it sets the whole quantity of the tar on fire; but if small enough, it runs quickly out.

The tar being thus made, is put in barrels; and if to be made into *pitch*, they put it into large boiling-vessels, without adding any thing to it. It is then suffered to boil a while, and on being let out and cooled, is found to be what we call pitch.

The finest and clearest tar, as it distils from the wood, being kept separate, white or *Burgundy pitch* is made of it, by melting the same with oil of turpentine. Some erroneously pretend, that Burgundy pitch is a native pitch, distilling from a resinous tree, growing in the mountains of Franche Comté.

TARTAR; see ARGOL.

TEA. (F. *Thé*; G. *Thee*; D. *Thee*; I. *Tè*; S. *Thé, Tè*; P. *Chà*; D<sub>A</sub>. *Thee*; Sw. *Thée*; Pol. *Herbata, Te*; R. *Tschai*; L. *Thea*.)

Tea is the dried leaves of the tea plant, a commodity so generally used among us, that it must excite the curiosity of every one to know something of its origin; but unluckily, the countries of which the tea plant is a native, are so much hidden from the exploring eyes of Europeans, that we are not able to give any thing but an imperfect account of it.

The first European writer who mentions tea, is Giovanni Botero, an eminent Italian author, who published a treatise about the year 1590, *Of the Causes of the Magnificence and Greatness of Cities*. He does not indeed mention its name, but describes it in such a manner that it is impossible to mistake it. "The Chinese (says he,) have an herb, out of which they press a delicate juice, which serves them for drink instead of wine; it also preserves their health, and frees them from all those evils which the immoderate use of wine produces among us."

Tea was introduced into Europe, by the Dutch East-India Company, in the year 1610. It is generally said, that it was first imported from Holland into England, in 1606, by the Lords Arlington and Ossory, whose ladies brought it into fashion among people of their rank. But it was used in coffee-houses before that period, as appears from an Act of Parliament made in 1660, in which a duty of 8*d.* was laid on every gallon of the infusion sold in these places. In 1666, it was sold in London for 60*s.* per pound, though it did not cost more than from 2*s.* 6*d.* to 3*s.* 6*d.* at Batavia. It continued at this price till 1707. In 1715, green tea began to be used; and as great quantities were then imported, the price was lessened, and the practice of drinking tea descended to the lower ranks. In 1720, the French began to send it to us by a clandestine commerce. Since that period, the demand has been increasing yearly, and it

has become almost a necessary of life in several parts of Europe, and among the lowest as well as the highest ranks.

The following table of the tea imported annually into Great Britain and Ireland, since 1717, will give an idea of the growing consumption of this article:

from 1717 to 1726	- - - -	700,000	lbs.
1732 to 1742	- - - -	1,200,000	lbs.
in 1755 near	- - - -	4,000,000	lbs.
1766	- - - - -	6,000,000	lbs.
1785 about	- - - - -	12,000,000	lbs.
1794 from	- - -	16 to 20,000,000	lbs.

Besides these immense quantities, imported into Great Britain and Ireland, much has been brought to other parts of Europe. In 1766, the whole quantity of tea imported into Europe from China amounted to seventeen millions, and in 1785 it was computed to be about nineteen millions of pounds.

The tea-plant is a native of Japan, China, and Tonquin, and has not, as far as we can learn, been found growing spontaneously in any other part of the world. Linnæus says, that there are two species of the tea-plant, the bohea, and the viridis or green tea. It is an evergreen, which grows to the height of five or six feet; Le Compte says, ten or twelve. The leaves, which are the only valuable part of it, are about an inch and a half long, narrow, indented, and tapering to a point, like those of the sweet-briar, and of a dark green colour. The flowers resemble those of the white wild rose. The stem spreads into many irregular branches. The wood is hard, of a whitish green colour, and the bark is of a greenish colour, with a bitter, nauseous, and astringent taste. The fruit is small, and contains several round, blackish seeds, about the bigness of a bean or large pea.

This plant delights in valleys, is frequent on the sloping sides of mountains, and the banks of rivers, where it enjoys a southern exposure. It flourishes

in the northern latitudes of Peking, as well as round Canton, but attains the greatest perfection in the mild temperate regions of Nankin. In Japan, tea is planted round the borders of fields, without regard to the soil: but as it is an important article of commerce with the Chinese, whose fields are covered with it, it is by them cultivated with care. The tea which grows in rocky ground, is the best. It is propagated by seeds.

The leaves are not fit for being plucked till the shrub be of three years growth. In seven years, it rises to a man's height; but as it then bears but few leaves, it is cut down to the stem, and this produces a new crop of fresh shoots the following summer, every one of which bears nearly as many leaves as a whole shrub. Sometimes the plants are not cut down till they are ten years old. We are informed by Kœmpfer, that there are three seasons in which the leaves are collected in the isles of Japan, from which the tea derives different degrees of perfection.

The first gathering commences at the end of February or beginning of March. The leaves are then small, tender, and unfolded, and not above three or four days old; those are called *sicki-tsiaa*, or tea in powder; it is also called Imperial Tea, being generally reserved for the court, and people of rank; and sometimes it is also named Bloom Tea. It is sold in China for 20*d.* or 2*s.* per lb. The labourers employed in collecting it, do not pull the leaves by handfuls, but pick them one by one, and take every precaution that they may not break them.

The second crop is gathered about the end of March, or beginning of April. At this season, part of the leaves have attained their full growth, and the rest are not half their size. This difference, however, does not prevent them from being all gathered indiscriminately. They are afterwards picked and assorted into different parcels, according to their age

and size. The youngest are carefully separated from the rest, and often sold for imperial tea.

The third crop is gathered in the end of May, or in the month of June. The leaves are then very numerous and thick, and have acquired their full growth. This is the coarsest kind of tea of all, and is reserved for the common people. Some of the Japanese collect their tea only at two seasons of the year, which correspond with the second and third already mentioned; others confine themselves to one general gathering of their crop, towards the month of June; however, they always form afterwards different assortments of the leaves.

The finest and most celebrated tea of Japan, is that which grows near Ud-si, a small village situated close to the sea, and not far distant from Meaco. In the district of this village is a mountain, extremely adapted for the culture of fine tea. It is inclosed by hedges and ditches, to prevent all access to it. The tea-shrubs that grow on this mountain are planted in regular order, and are divided by different avenues and alleys. The care of this place is entrusted to people who are ordered to guard the leaves from dust, and to defend them from the inclemency of the weather. Before collecting the tea, they abstain from every kind of gross food for some weeks, that their breath and perspiration may not in the least injure the leaves, which they do not touch but with very fine gloves. When this fine tea has undergone the process necessary for its preservation, it is escorted by the superintendent of the mountain, and a strong guard, to the Emperor's court, and reserved for the use of the Imperial family.

When the tea-leaves have been collected, they are exposed to the steam of boiling water; after which they are put upon plates of copper, and held over the fire until they become dry and shrivelled, and appear such as we have them in Europe. According to the testimony of Kœmpfer, tea is prepared in the isles of Ja-

pan in the following manner. There are public buildings, erected for the purpose of preparing the fresh-gathered tea. These buildings contain a great number of small stoves, raised about three feet high, and each of which has a broad plate of iron fixed over its mouth. The workmen are seated round a large table covered with mats, and are employed in rolling the tea-leaves, which are spread out upon them. When the iron plates are heated to a certain degree by the fire, they cover them with a few pounds of fresh-gathered leaves, which being green and full of sap, crackle as soon as they touch the plate. It is then the business of the workman to stir them with his naked hands as quickly as possible, until they become so warm that he cannot easily endure the heat. He then takes off the leaves with a kind of shovel, and lays them upon mats. The people who are employed in mixing them take a small quantity at a time, roll them in their hands always in the same direction, while others keep continually stirring them, in order that they may cool sooner, and preserve their shrivelled figure the longer. This process is repeated two or three times, and even oftener, before the tea is deposited in the warehouses. These precautions are necessary, to extract all the moisture from the leaves.

Many attempts have been made to introduce this valuable plant into Europe, but from want of proper precautions, most of these attempts have miscarried. The plants which are cultivated in the gardens near London, thrive well in the green-house during winter, and some stand that season in the open air.

In this country, teas are generally divided into three kinds of green, and five of bohea. The former are: 1. Imperial or Bloom Tea, with a large loose leaf, light green colour, and faint delicate smell; 2. Hyson, so called from the merchant who first imported it: the leaves of this are closely curled and small, of a green colour, verging to a blue; and 3. Singlo Tea, from the name of the place where it is

cultivated. The boheas are: 1. Souchong, which imparts a yellow green colour by infusion; 2. Canho, so called from the place where it is made; a fragrant tea, with a violet smell, its infusion pale; 3. Congo, which has a larger leaf than the following, and its infusion somewhat deeper, resembling common bohea in the colour of the leaf; 4. Pekoe Tea, known by the appearance of small white flowers mixed with it; 5. Common Bohea, the leaves of which are of one colour. There are other varieties, particularly a kind of green tea, done up in roundish balls, called Gunpowder Tea.

Tea is the common drink of the Chinese, and was not introduced among them through vain caprice. Almost throughout the empire, the water is unwholesome and nauseous. Of all the methods that were tried to improve it, none succeeded so well as tea. Upon trial, it was thought to be endued with other virtues, and was extolled as an excellent dissolvent, a purifier of the blood, a strengthener of the head and stomach, and a promoter of digestion and perspiration.

We know the Chinese reserve the best tea for themselves, and adulterate that intended for exportation; we know also, that since the exportation has been so great, they are not so circumspect in the choice of the soil, nor so careful in the preparation of the tea; and that our manner of using it too hot and strong, always mixed with a deal of sugar, frequently with perfumes, and sometimes with pernicious liquors, must contribute to lessen its virtues. Notwithstanding all this, the phrenzy for this Asiatic infusion has now become almost universal in the northern parts of Europe: but it cannot be denied, that since its first introduction, it has contributed more to the sobriety of the nation than the severest laws, the most eloquent harangues of Christian orators, or the best treatises on morality.



**TEAK WOOD**, or **TECK WOOD**, is the producè of a tree growing in the kingdoms of Ava and Pegu, as well as on the coast of Malabar, where it is employed in the construction of the vessels built at Madras: the vessels built at Bombay are likewise formed of teak wood, brought from Ava and Pegu. The English purchase about 200,000 pounds worth of teak wood annually at Rangoon, the principal port of the latter kingdom. The importance of the traffic to which this wood gives rise may readily be conceived, when it is known that the total burthen of the vessels belonging to Calcutta, which are formed of it, amounts to 40,000 tons. This is the only wood which can be advantageously employed in the construction of the large Bengalese vessels; for it has been ascertained, that the indigenous wood of Bengal is scarcely serviceable at all in the Indian seas.

**TERRA JAPANICA**; see **JAPAN EARTH**.

**TERRA LEMNIA**; see **BOLE**.

**TERRA POZZOLANA**; see **PUZZULANA**.

**TERRA SIGILLATA**; see **BOLE**.

**TERRE VERTE** is the name of a green earth, much used by painters, both singly for a good standing green, and in mixture with other colours.

It is an indurated clay, of a deep bluish green colour, and is found in the earth in lumps of different sizes. It is of a fine, regular, and even structure, and not very hard; of an even and glossy surface, very smooth to the touch, and in some degree resembling the morochthus, or French chalk, but adhering firmly to the tongue. It does not ferment with acids, and burns to a dusky brown colour.

This earth is dug in the island of Cyprus, and in many parts of France and Italy. That from the

neighbourhood of Verona has been esteemed the best in the world; but of late there has been some dug in France that equals it. There is also an earth dug on Mendip Hills, in the sinking for coal, which, though wholly unnoticed, is nearly, if not wholly, of equal value.

**TICK, or TICKING.** (G. *Bugnensug*; D. *Belltulyk*; F. *Tayes*; I. *Fedra*; S. *Terlixpara*; P. *Trez.*)

A sort of texture used for covering bedding: it is made either of hemp or flax, being woven in the loom, in the same manner as linen. Of this article considerable quantities are imported from Germany, and from Bremen and its vicinage.

**TIN.** (F. *Etain*; G. *Zinn*; D. *Tin*; I. *Stagno*; S. *Estagno, Peltre*; P. *Estanho*; D<sup>A</sup>. *Tin*; Sw. *Tenn*; Pol. *Cyna*; R. *Olowa*; L. *Stannum.*)

The colour of this metal resembles silver, but is somewhat darker. It is softer, less elastic and sonorous, than any other metal, except lead. When bent backwards and forwards, it occasions a crackling sound, as if torn asunder. It is the lightest of all the malleable metals, being little more than seven times specifically heavier than water.

Tin is commonly reckoned the least ductile of all metals, except lead; and certainly is so, in regard to ductility into wire, but not in regard to extensibility into leaves. It melts the most easily of all the metals. Heated till almost ready to melt, it becomes so brittle, that large blocks may be easily beat to pieces by a blow. The purer sort, from its facility of breaking into long shining pieces, is called grain tin.

With the heat necessary for fusion, it may also be calcined; or at least so far deprived of its phlogiston as to appear in the form of a gray calx, which may be entirely reduced to tin by the addition of inflammable matter. By longer continuance in the fire, the metal is converted from a greyish into a perfectly

white calx, called *putty*, which is used for polishing glass, and other hard bodies.

The calx of tin is the most refractory of all others. Even in the focus of a large burning mirror, it only softens a little, and forms crystalline filaments. With glass of bismuth, and the simple and arsenical glasses of lead, it forms opaque milky compounds. By this property it is fitted for making the basis of the imperfect glasses called *enamels*.

The vapours which rise from tin, by whatever method it is calcined, have generally an arsenical smell. The arsenic is strongly retained by the tin, so as scarcely to be separable by any degree of fire. Hence as the tin ores abound in arsenic, the common tin is found also to precipitate of that mineral. It has been observed, that Malacca tin, which is one of the purest sorts, yielded no less than one-fourth of its weight of arsenical crystals.

Tin, notwithstanding its being soon deprived of its lustre, is nevertheless much less liable to rust than iron, copper, or lead; and hence is advantageously used for covering over the insides of other metalline vessels. The amalgama of mercury and tin is employed to cover one of the surfaces of looking-glasses.

There are considerable tin mines on the Malabar coast, the island of Banda, in Spain, and in the Spanish West Indies: both the latter are not worked. But mines which produce by far more tin than any of the above, are those of the county of Cornwall. The Phenicians early visited these coasts for the said article, some think four hundred or four hundred and fifty years before Christ, and the mines continued to be wrought, with various success, at different periods. In the time of King John, they appear to have yielded no great emolument, the right of working them being wholly in the King, as Earl of Cornwall; but in the time of Richard, King of the Romans and Earl of Cornwall, the tin mines were immensely rich. After

that time, they were again neglected, till the gentlemen of Blackmore, lords of seven tithings, best stored with tin at that time, obtained of Edmund, Earl of Cornwall, son of Richard, King of the Romans, a charter under his own seal, with more explicit grants of privileges.

The tin of the whole county, which in Carew's time, in the last century, amounted to from 30 to 40,000*l.* yearly, has of late amounted to from 180,000 to 190,000*l.* sterling. Of this the Duke of Cornwall receives, for his 4*s.* duty on every cwt. of coined white tin, about 10,000*l.* yearly; the bounders or proprietors of the soil about one-sixth at a medium clear, or about 30,000*l.* yearly; the remainder goes to the adventurers in the mine, who are at all the charge of working.

Tin is found collected and fixed in lodes and floors, or in grains and bunches, in the natural rock; or loose and detached in single separate stones, called shodes or streams; or in a continued course of such stones, called the beuheyl or living stream; or in an arenaceous pulverized state.

The tin being divided among the lords and adventurers, is stamped and worked at the mill; and being thus dressed, is carried, under the name of block tin, to the melting-house, where it is melted by Welsh pitcoal, poured into blocks or bars, and carried to the coinage town.

The coinage towns are five towns, appointed in the most convenient parts of the county of Cornwall, for the tanners to bring their tin to every quarter of a year. These are, Leskard, Lestwithiel, Truro, Helston, and Penzance.

TIN GLASS; see BISMUTH.

TOBACCO. (F. *Tabac*; G. *Tabak*; D. *Tabak*; I. *Tabacco*; S. *Tabaco*; P. *Tabacco*; DA. *Tobak*; SW. *Tobak*; POL. *Tubaka*; R. *Tabak*; L. *Tabacum*.)

The tobacco-plant, *nicotiana tabacum*, was first discovered by the Spaniards, in 1520, near Tobasco, a province of Yucatan, in the Gulph of Mexico; whence it derives its name. It had been used by the inhabitants of America long before that period, and was soon after brought to our climates. The French, at its first introduction among them, gave it several names, as *nicotiana*, or the ambassador's herb, from J. Nicot, the French ambassador at Lisbon, who brought some of it thence. Sir Walter Raleigh is generally said to have been the first who introduced it into England, about the year 1585, and who taught his countrymen how to smoke it.

There are two varieties of that species of tobacco which is cultivated for common use; which are distinguished by the names Oronokoe and sweet-scented tobacco. They differ from each other only in the figure of their leaves; those of the former being longer and narrower than the latter. The Oronokoe is principally used for smoaking, and the sweet-scented tobacco for snuff. They are tall herbaceous plants, rising with a strong stem, from six to nine feet high. The stalk, near the root, is upwards of an inch in diameter, and surrounded with a kind of hairy, or velvet clammy substance, of a yellowish green colour. The leaves are rather of a deeper green, and grow alternately, at the distance of two or three inches from each other; but as they increase in size, they acquire a yellowish cast. They are oblong, of a spear-shaped oval, the largest about twenty inches long, but decreasing in size as they ascend, till they come to be only ten inches long, and about half as broad. The stem and branches are terminated by large bunches of flowers, collected into clusters, of a delicate red, the edges inclining to a pale purple; these are succeeded by seeds of a brown colour and kidney-shaped. The

seeds are very small, each capsule containing about one thousand, and the whole produce of a single plant is reckoned at about 350,000.

Tobacco thrives best in a warm, light, kindly-rich soil. It is generally sown about the middle of April, and in about a month's time it has four or five leaves, when it is fit for being transplanted. When it has risen to the height of two feet, or more, it commonly begins to put forth the branches on which the flowers and seeds are produced; but as this expansion, if suffered to take place, would drain the nutriment from the leaves, and thereby lessen their size and efficacy, it becomes needful at this stage to nip off the extremity of the stalk, to prevent its growing higher. In some parts, when the tobacco is designed to be remarkably powerful, eleven or twelve leaves only are allowed to expand; but sometimes the planter suffers it to put forth more, as far as eighteen or twenty, in proportion to the degree of strength or mildness which he wishes his crop to have. In this calculation the three or four inferior and smaller leaves next the ground are not to be reckoned.

When the tobacco is fit to be gathered, which will appear from the leaves becoming more corrugated or rough, and mottled with yellowish spots on the raised parts, it will be necessary to cut the plants down, as close to the root as possible, which being done in the morning, they must be left exposed to the rays of the sun till the leaves become limber, and bend any way without breaking. Then the plants must be laid in heaps to ferment. The longer they lie in this situation, which is called sweating, the darker coloured is the tobacco; and after having been left in it for three or four days, they may be fastened together in pairs, and hung across a pole. In about a month, the leaves will be thoroughly dried, and of a proper temperature to be taken down. As soon as taken down, they must again be laid in a heap, and pressed with heavy logs of wood, for about a week. This is called the

second and last sweating; and when completed, the leaves are now tied up in bunches or hands, and kept in a cellar, or other damp place, fit for sale.

Among all the productions of foreign climes introduced into these kingdoms, scarcely any has been held in higher esteem, by persons of every rank, than tobacco. In the countries of which it is a native it is considered by the Indians as the most valuable offering that can be made to the beings they worship.

The inhabitants of the East Indies, and of Africa, cultivate tobacco only for their own use. They neither sell nor purchase any.

In Turkey, the tobacco leaves are soaked in salt-water, before they are dried, to extract some of their acrimony and render them more mild.

The Turks smoke their tobacco either in the common way, or they draw the smoke through water, in order to render it milder, and make it less disagreeable to the smell and taste. The Persian tobacco is the only sort fit to be smoked through water; it is stronger than the ordinary tobacco of the East, and smokes disagreeably in a common pipe. It appears that the use of tobacco was not known in Turkey earlier than the seventeenth century.

Salonica is the great mart for tobacco in the Levant. Syria, the Morea, or the Peloponnesus, and Egypt, send thither all their superfluous quantity. From this port it is sent to Italy, where it is smoked, after it has been mixed with tobacco of Dalmatia and Croatia.

The tobacco of these two last provinces is of a very excellent kind; but it is so strong, that it cannot be used till mixed with a milder sort.

The tobacco of Hungary would be tolerably good, if it had not generally a smell of smoke, which is very disgusting.

In Ukraine, Livonia, Prussia, and Pomerania, they

cultivate a tolerably large quantity of this production. Its leaves are wider than they are long, very thin, and have neither flavour nor consistence.

The tobacco of the Palatinate is very indifferent, but has the quality of mixing with a better kind, and of acquiring its flavour.

Holland also furnishes tobacco; that which is produced in the province of Utrecht, at Ammersfort, and four or five neighbouring districts, is of a superior quality. Its leaves are large, supple, oily, and of a good colour. It has the advantage of communicating its perfume to tobacco of inferior value. There is a great deal of this latter sort upon the territories of the republic; but the species which grows in Guelderland is the worst of any.

Tobacco was formerly cultivated in France, and with great success, near Pont de l'Arche in Normandy, at Verton in Picardy, and at Montauban, Tonneins, and Cleral in Guyenne. It was prohibited in 1721, except upon some frontier towns, whose terms of capitulation it was not thought proper to infringe. In consequence of this, tobacco was cultivated, previously to the revolution, in Flanders and Alsace. These tobaccos, though weak, may be mixed, without inconvenience, with others of a superior kind.

In the beginning, the islands of the New World attended to the culture of Tobacco, but it was by degrees succeeded by richer productions in them all, except Cuba, which supplies all the snuff consumed by the Spaniards of both hemispheres. Its perfume is exquisite, but it is too strong. The same crown derives from Caraccas the tobacco which is smoked by its subjects in Europe. It is likewise used in the North, and in Holland, because there is none to be found any where to be compared with it for this purpose. Hence the Havannah segars.

The Brazils cultivated this production very early, and have not since disdained it. They have been encouraged in this pursuit by the constant repute



which their tobacco has enjoyed upon the western coasts of Africa. Even in our climates, it is in tolerable request among persons who smoke. It could not be taken in snuff, on account of its acrimony, without the preparations which it undergoes. These preparations consist in soaking every leaf in a decoction of tobacco and gum copal. These leaves, thus steeped, are formed into rolls, and wrapped up in the skin of an ox, which keeps up their moisture.

But the tobaccos of all these countries are but small, and the quality, on the whole, very inferior, compared to the Maryland and Virginia crops, the former province producing principally tobacco fit for smoking, and the latter for snuff.

From 1752 till the end of 1755, Great Britain received from Virginia and Maryland together, 3,501,110 cwt. of tobacco, being for each year 875,280 cwt. Great Britain exported 2,989,800 cwt. which reduced its annual consumption to 127,830 cwt. From the year 1763 till the end of 1770, the two colonies sent to the mother country no more than 6,500,000 cwt. or 812,500 cwt. each of the eight years. No more was sold to foreigners than 5,148,000 cwt. or 643,500 cwt. per annum; the nation therefore annually consumed 169,000 cwt.

In the interval between these two periods, therefore, the importation decreased annually, one year with another, 62,780 cwt. and the exportation 103,950 cwt. while the consumption in England increased 41,170 cwt. every year.

The use of tobacco has not decreased in Europe; the passion for this superfluity has even increased, notwithstanding the heavy duties with which it has been burthened by all governments. If the tobacco furnished by North America be daily less sought after among us, it is because Holland, Alsace, the Palatinate, and Russia have carried on this culture with great industry.

Tobacco is used in medicine, externally and internally.

**TOPAZ.** (F. *Topasè*; G. *Topas*; D. *Topaas*; I. *Topazio*; S. *Topacio*; P. *Topazio*; DA. *Topas*; Sw. *Topas*; POL. *Topazyn*; R. *Topas*; L. *Topazius*.)

The topaz is a sort of a precious stone, being transparent, of a beautiful yellow, or gold colour, very hard, and takes a fine polish. It is found in several parts of the East Indies, in Ethiopia, Arabia, Peru, and Bohemia. The oriental topazes are most esteemed, whose colour borders on the orange; those of Peru are softer, but their colour much the same; the yellow of those of Bohemia is a little blackish, they are softest of all, and their polish the coarsest. This gem is easily counterfeited, and there are factitious topazes, to the eye not inferior to the real ones.

**TORTOISE-SHELL.** (F. *Ecaille (de tortue)*, *Caret*; G. *Schildpad*, *Tchildkröten schale*; D. *Schildpad*; I. *Tartaruga*; S. *Carey*, *Concha*; P. *Tartaruga*, *Concha*; DA. *Skildpaddeskal*; Sw. *Sköldpadda*; POL. *Skorupa zolwia*; R. *Kost tscherepachowaja*; L. *Testudinis testa*.)

Tortoise-shell is the shell, or rather the scales, of the testaceous animal called tortoise, used in inlaying, and in various other works, as for snuff-boxes, combs, &c.

The best tortoise-shell is thick, clear, transparent, of the colour of antimony, sprinkled with brown and white. When used in marquetry, &c. the workmen give it what colour they please, by means of coloured leaves, which they put underneath it.

**TRAIN-OIL.** (F. *Huile de poisson*; G. *Fisch Thran*; D. *Thraan*; I. *Olio di pesce*; S. *Grasa*, *Aceto de Pescado*; P. *Azeite de peixe*; DA. *Tran*; Sw. *Tran*; R. *Salo worwannoë*, *Worwan*; L. *Oleum piscinum*.)

Train-oil is a general name for different sorts of fish-oils; such as whale, seal, cod, elephant, pilchard

oil, &c. Among these, whale-oil is by far the most important article.

Great Britain was for a long time agitated with the desire of sharing the whale-fishery with the Dutch; and the legislature, justly considering that trade as of great national importance, bestowed upon it, at different periods, very considerable encouragement. In particular, every British vessel bound for the whale-fishery, and duly qualified according to the act, obtained a licence to proceed on such voyage, and on her return, the master and mate making oath that they proceeded on such voyage, and no other, and used all their endeavours to take whales, &c. also that all the blubber, fins, &c. imported in their ship, were taken by the crew, there was allowed 40s. for each ton, according to the admeasurement of the ship. It was afterwards found, however, that so great an encouragement was not necessary, and in 1786 the bounty was reduced to 30s. The number of ships employed said year in the whale-fishery, to Davis's Straits and the Greenland Seas, amounted to one hundred and thirty-nine from England, and fifteen from Scotland. The reduction took place in 1787, and notwithstanding it, the trade increased; the number of ships employed the same year from England amounting to two hundred and seventeen, and in the year 1788, to two hundred and twenty-two vessels.

The face of things particularly changed when the seas of North America came into the possession of the English, who now may be considered the first nation in the whale, as well as other kinds of fisheries. The whale-fishery is carried on there, in the Gulph of St. Lawrence, and adjacent latitudes. These seas are less tempestuous, and less embarrassed with ice than those of Greenland: accordingly it begins sooner and ends later. The ships employed for the purpose are smaller, and have less numerous crews. These reasons must give to the American continent

advantages, which the economy of the Dutch will never be able to balance.

In the Greenland whale-fishery, when the fat is all got off from the whale, it is cut into small pieces, and put up in tubs in the hold, cramming them very full and close; and when the ships get home, this fat is boiled, and melted down into train-oil. In the South Sea fishery, the fat is boiled on board the ships as the fish are caught.

Greenland oil is purer than southern oil, and fit for different purposes, where the latter will not answer; it is on that account generally worth four and five pounds per ton more.

The seal is a native of the North Seas; it is an amphibious animal, with four feet, and called in many places the sea-calf, or sea-wolf. His fat, which is near four inches thick, is converted into train-oil, and the train which drops from that blubber is not more rancid than stale oil of olives.

Train-oil is used by leather-dressers, soap-boilers, for burning, &c.

**TRIPOLI, or ROTTEN-STONE.** (G. *Tripel*; DA. *Tripel*; Sw. *Trippel*; F. *Tripoli*; I. *Tripolo*; S. *Tripoli*; D. *Pedra Tripe*.)

Tripoli is known by its quality of rubbing or wearing hard bodies, and making their surfaces shine. Its colour is generally yellow. It is brought to us from Tripoli in Barbary, whence its name.

**TRUFFLES.** (G. *Trussell*; D. *Tartufels*; DA. *Troster*; F. *Trusses, Truffles*.)

A kind of vegetable, not unlike mushrooms: some of them are very large, many being found to weigh from a pound to a pound and a quarter. They are chiefly imported from Germany, Italy, and France. When dried they are used in ragouts.

**TURKEY MADDER ROOTS;** see **MADDER.**

**TURMERIC.** (F. *Curcuma*, *Terre merite*; G. *Kurkuma*; D. *Kurkuma*; I. *Curcuma*; S. *Curcuma*; P. *Curcuma*, *Acafrao da India*; DA. *Gurgumeye*; SW. *Gurkmaja*; POL. *Szafranica*, *Ostryzindyjski*; R. *Kurkuma*; L. *Curcuma*, *Terra merita*.)

The *curcuma longa*, or turmeric plant, is a shrub growing in the East Indies; it bears a purple red flower, succeeded by a capsule, with prickles like a chesnut, containing a number of seeds. The root bears a great resemblance to ginger, and in the East Indies enters in almost every dish; with us it is used for the purpose of dyeing yellow, sometimes also by apothecaries.

**TURPENTINE.** (F. *Térébenthine*; G. *Terpentin*; D. *Terpentin*; I. *Trementina*; S. *Trementina*; P. *Terebenthina*; DA. *Terpentin*; SW. *Terpentin*; POL. *Terpentina*; R. *Skipidar*; L. *Terebinthina*.)

The true turpentine-tree is found in Spain and the southern parts of France, as well as in the island of Chio, and in the Indies. It is a middling-sized evergreen tree, with leaves like those of the bay, bearing purplish imperfect flowers; and on separate pedicles, hard unctuous berries, like those of juniper. It is extremely resinous, and unless the resin is discharged, it decays, produces fungous excrescences, swells, bursts, and dies; the prevention of which consists wholly in plentiful bleeding, both in the trunk and branches. The juice is the *Chio* or *Cyprus turpentine* of the shops. This sort is quite of thick consistence, of a greenish whitish colour, clear and transparent, and of scarcely any taste or smell.

The kind now called *Venice turpentine*, is no other than a mixture of eight parts of common yellow or black rosin, with five parts of oil of turpentine. What was originally *Venice turpentine*, is now unknown.

The Strasburg turpentine is extracted from the silver fir.

The common turpentine is prepared from different sorts of the pine, and is quite thick, white and opaque. Even this is often counterfeited by mixtures of rosin and common expressed oils.

The process of making turpentine is very familiar. In the spring, when the sap is most free in running, they pare off the bark of the pine tree, to make the sap run down in a hole at the bottom, which they cut to receive it. In the way as it runs, it leaves a white matter, like cream, but a little thicker. This is very different from all the kinds of rosin and turpentine in use, and it is generally sold to be used in the making of flambeaux, instead of white bees wax. The matter that is received in the hole at the bottom, is taken up with ladles, and put into a large basket. A great part of this immediately runs through, and is the common turpentine. It is received into stone or earthen pots, and is ready for sale. When turpentine is distilled, or boiled with water, till it becomes solid, it appears yellowish; when the process is further continued, of a reddish brown colour: in the first state it is called boiled turpentine, and in the latter *colophony* or *rosin*.

Turpentine is much used by farriers, and for various other purposes.

**TURQUOISE**; see **COPPER**.

## V. &amp; U.

VALONEA. (F. *Avelanede*; G. *Ackerdoppen*; D. *Akerdoppen*; I. *Vallonea*, *Valonia*; L. *Valonea*.)

Valonea is the husks of the acorn, generally mixed with that fruit; though this diminishes its value. It is brought to us from Italy and the Levant, and used as a dying ingredient.

VANILLA. (F. *Vanille*; G. *Vanilje*; D. *Banilje*; I. *Vainiglia*; S. *Vainilla*, *Vainica*; P. *Vainilha*, *Baonilha*; DA. *Vaniller*; SW. *Baniller*; POL. *Banile*; R. *Banila*; L. *Vanilla*.)

Vanilla, in commerce, is the pod of a species of epidendrum, which is brought to us entire, and with the seeds in it, being usually about five or six inches long, and half an inch broad, and containing an almost innumerable quantity of minute and glossy black seeds.

The vanilla plant is a native of Mexico, where, like the ivy, it grows to the trees it meets with, covers them almost entirely, and raises itself by their aid. Its stem, of the thickness of the little finger, is greenish, fleshy, almost cylindrical, knotty at intervals, and sarmentose as that of the vine. Each knot is furnished with an alternate leaf, rather thick, of an oval shape, eight inches long and three broad. It also pushes forth roots, which, penetrating the bark of the trees, extract a sufficient degree of nourishment to support the plant for some time in vigour, when by accident the bottom of the stem happens to be damaged, or even separated from the principal root. The flowers are in clusters, rather large, white on the inside, and greenish without; they produce a fleshy fruit, formed like a pod, of seven or eight in-

ches long, and opening into three valves, loaded with small seeds.

This plant grows naturally in uncultivated lands, that are always damp, sometimes under water, and covered with large trees. In order to multiply it, it is sufficient to plant at the foot of the trees some branches or twigs, which take root, and rise up in a short time. Some cultivators, to preserve their plants from rotting, prefer the fastening of them to trees, as they soon throw out filaments which descend to the ground, and form roots there.

This plant produces but one crop of fruit in a year, which is commonly ripe towards the end of September, or rather fit for gathering; for it is not suffered to remain till perfectly mature, because it is then not so fit for use. The pods grow in pairs, are generally the thickness of a child's finger, green at first, then yellowish, and turning to a brownish cast, when completely ripe. When it is about half changed yellow, it is esteemed better for gathering than when changed to a brown colour, at which time it splits and discloses its seeds.

The aromatic odour that is peculiar to them, cannot be obtained without preparation. This preparation consists in threading several pods, and dipping them for a moment in a caldron of boiling water to whiten them. They are afterwards suspended in a place exposed to the open air, and to the rays of the sun. A thick and plentiful liquor then distils from their extremity, the exit of which is facilitated by a slight pressure, repeated two or three times in the course of the day. In order to retard the drying, which ought to go on slowly, they are rubbed over at several different times with oil, which preserves their suppleness, and keeps them from insects. They are also tied round with a cotton thread to prevent them from opening. When they are sufficiently dried, they are rubbed with the hands, anointed with oil, and put



into a pot that is varnished, in order to keep them fresh. In some parts, after gathering, as before mentioned, they scald the pods in the following liquor: viz. a brine is made with salt and water, strong enough to bear an egg. To this are added, a fourth-part-of chamber-lye; and a small quantity of quicklime: these are boiled together for half an hour, and then taken off. The vanillas are put into this liquor until thoroughly scalded, then taken out, and dried in the shade. When fit for market, they are put up, from fifty, to one hundred and fifty, in little bags.

Vanilla is used in the manufactory of chocolate, likewise to perfume snuffs and other substances.

Only fifty quintals of it are annually brought to Europe. It is found wild in many parts of Jamaica, but makes none of the exports from thence.

**VERDIGRISE.** (F. *Verd-de-gris, Verdet*; G. *Grünspan*; D. *Spaansch groen*; I. *Verderame*; S. *Cardenillo, Verdete, Verde-gris*; P. *Verdete, Verde-gris, Cardinilho*; DA. *Spansk grönt*; Sw. *Spansk gröna*; POL. *Gryspan*; R. *Jar*; L. *Ærugo, Viride æris*.)

Verdigrise is copper converted into a green calx by vinous acid. It is much used by painters as a green colour, and chiefly manufactured at Montpellier; the vines of Languedoc being very convenient for that purport.

The following is the process used at Montpellier for making the verdigrise.

Vine-stalks, well dried in the sun, are put into earthen pots, and upon them wine is poured. The pots being fully covered, the wine then undergoes the acetous fermentation, which in summer is finished in seven or eight days. When the fermentation is sufficiently advanced, the stalks are taken out of the pots, and being by this method impregnated with all the acid of the wine, the remaining liquor is but a

very weak vinegar. The stalks well drained, are put in earthen pots, in alternate layers with plates of copper. The copper is thus left to the action of the vinegar, for three or four days, or more; in which time the plates become covered with verdigrise. The plates are then taken out of the pots, and left in the cellar three or four days; when they are moistened with water, or with the weak vinegar above mentioned, and left to dry. When this moistening and drying of the plates has been thrice repeated, the verdigrise will be found to have considerably increased in quantity; and it may then be scraped off for sale.

To discover the method of procuring this substance could not be difficult, as copper contracts a green rust oftener than wished for, when in the least exposed to acids. The ancients, for this purpose, used their vessels and plates of copper, or only shavings and filings, and the acid they employed, was either the sourest vinegar, or the sour remains left when they made wine: such as grapes become sour, or the stalks and skins, after the juice had been pressed from them. Sometimes the copper was only exposed to the vapour of vinegar in close vessels, sometimes immersed in it, sometimes copper filings were pounded with vinegar in a copper mortar, till they were changed in the wished-for green calx.

It appears that the greater part of the verdigrise in ancient times, was made in Cyprus, which was celebrated for its copper works, and in the island of Rhodes.

The most saleable natural verdigrise is collected in Hungary. The clear water which runs from old copper works, is put into large vessels, and after some time the green earth falls to the bottom as a sediment.

The trade which Montpelier formerly carried on in verdigrise, has of late very much decayed. Between the years 1748 and 1755, from nine to ten thousand

quintals were manufactured annually, by which the proprietors had a clear profit of 50,000 crowns; but a sudden change seems to have taken place, for in 1759 the quantity manufactured was estimated at only three thousand quintals, which gave a neat profit of no more than 935 crowns. Other nations, who till that period had consumed at least three-fourths of the French verdigrise, have partly succeeded in their attempts of manufacturing it at home, and the use of this substance seems to have greatly lessened.

Verdigrise, besides its use in painting, is also employed externally in medicine, for deterring foul ulcers, and as an escharotic.

In commerce there is a kind of this substance, known under the name of distilled verdigrise, which properly is nothing else than verdigrise purified, and somewhat crystallized by being dissolved in vinegar.

**VERDITER.** (F. *Cendres bleues*; G. *Bergblau*; D. *Bergblauw*; I. *Azzurro di montagna*; S. *Verde-tierra*; P. *Verdemontanha azul*; D. A. *Bierghlaat*; Sw. *Bergblatt*; R. *Gotubez, Mednaia lazur*; L. *Ceruleum montanum*.)

Verditer is a kind of mineral substance, sometimes used by the painters for a blue; but more usually mixed with yellow, for a green colour.

Verditer, according to Savory, ought to be made of lapis armenus, or at least of an earthy substance much like it, brought from the mountains of Hungary, &c. only prepared by powdering it and cleansing it by lotion.

But this stone being very scarce, the verditer commonly used is not native, but a factitious substance, and the method of making it in England, is as follows: the refiners pour their copper water into whiting, stirring them well together every day for some hours, till the water grows pale; then they

pour that off, and pour on more of the green water, repeating this, till the verditer is made, which then they take out, and lay on large pieces of chalk in the sun to dry. The copper water, by this process, deposits its particles of copper with the spirit of vitriol, in the chalk.

**VERMILION.** (F. *Vermillon*; G. *Vermiljon*; D. *Vermiljoen*; I. *Vermiglione*; S. *Vermillon*; P. *Vermelhao*; DA. *Vermillion*; Sw. *Vernillon*.)

Vermilion is a very bright, beautiful red colour, in great esteem among the antients. It is either native or factitious. The natural vermilion is found in some silver mines, in the form of a ruddy sand, which is afterwards prepared and purified by several lotions and coctions. The artificial is made of mineral cinnabar, ground up with aqua vitæ and urine, and afterwards dried. See CINNABAR.

We have two kinds of vermilion from Holland, the one of a deep red, the other pale; which difference only proceeds from the cinnabars being more or less ground. When the cinnabar is finely ground, the vermilion is pale, and this is preferred to that which is coarser and redder.

It is of very great use with painters in oil and miniature, and among the ladies to heighten the bloom of their complexion. See KERMES.

**VINEGAR.** (F. *Vinaigre*; G. *Essig*; D. *Azyn*; I. *Aceto*; S. *Vinagre*; P. *Vinagre*; DA. *Aeddike*; Sw. *Attika*; POL. *Ocet*; R. *Ukzus*; L. *Acetum*.)

Vinegar is an acid penetrating liquor, prepared from wine, cyder, beer, &c. of considerable use, both as a medicine and in the kitchen.

Vinegar can be made in a cheap manner, from refuse and other materials, which are frequently thrown away as useless. Such are the husks of grapes, decayed raisins, the lees of wine, grounds of ale, beer, &c. all our summer fruits in England, even black-

berries; all the refuse washings of a sugar-house, cyder pressings, and the like; all these ingredients will make vinegar, with the aid of water, the open air, and warmth.

The process of turning similar vegetable matters, for example the skins of raisins into vinegar, is as follows. Take the skins of raisins, after they have been used in making wine, and pour three or four times their own quantity of boiling water over them, so as to make a thin aqueous mixture. Then set the containing cask loosely covered in, a warmer place than is used for vinous fermentation, and the liquor in a few weeks time will become a clear and sound vinegar; which being drawn off from its sediment, and preserved in another cask well stopped down, will continue perfect and fit for use.

*Method of making cyder vinegar.* The cyder, the meanest of which will serve the purpose, is first to be drawn off fine into another vessel, and a quantity of the must or pouz of apples to be added. The whole is set in the sun, if there be a conveniency for the purpose; and at a week or nine days end, it may be drawn off.

To make *beer vinegar*, take a middling sort of beer, indifferently well hopped; into which when it has worked well, and is grown fine, put some husks of grapes, and mash them together in a tub; then letting it settle, draw off the liquid part, and set it in the sun; the bung being slightly covered. In about thirty or forty days it will be a good vinegar.

To make *wine vinegar*, any sort of vinous liquor being mixed with its own fæces, and its own tartar first reduced to powder, and the whole being kept frequently stirring in a vessel which has formerly held vinegar, or set in a warm place, full of the steams of the same, will begin to ferment anew, and by degrees turn into vinegar.

The remote subjects of acetous fermentation, are

the same with those of vinous; but the immediate subjects of it are all kinds of vegetable juices, after they have once undergone that fermentation, which reduces them to wine; for it is absolutely impossible to make vinegar of must, the acute juice of grapes, or other ripe fruits, without the previous assistance of vinous fermentation. The proper ferments for this operation, whereby vinegar is prepared, are: 1. The fæces of all acid wines; 2. The lees of vinegar; 3. Pulverised tartar; 4. Vinegar itself; 5. A wooden vessel well drenched with vinegar; 6. Wine that has often been mixed with its own fæces: 7. The twigs of vines and the stalks of grapes, currants, and all vegetables of an acid austere taste; 8. Bakèrs leaven, when turned sour.

ULTRAMARINE. (F. *D'Outremer*; G. *Ultramarin*; D. *Ultramaryn*; I. *Oltramarino*; S. *Ultramar*; P. *Azul d'ultramarinho*; DA. *Ultramarin*; Sw. *Ultramarin*; POL. *Ultramaryna*; R. *Ultramarin*; L; *Ultramarinum*.)

Ultramarine is a very fine blue powder, almost of the colour of the corn-flower or blue-bottle, which has this uncommon property, that when exposed to the air or a moderate heat, it neither fades nor becomes tarnished. On this account it is used in painting; but it was employed formerly for that purpose much more than at present; as smalts, a far cheaper article, was not then known. It is made of the blue parts of the *lapis lazuli*, by separating them as much as possible from the other coloured particles with which they are mixed, and reducing them to a fine powder.

On account of the scarcity and great value of the lapis lazuli, other stones somewhat like it only in colour, have been substituted in its stead; and ultramarine of course is not always what it ought to be. Good ultramarine must be of a beautiful dark colour, and free from sand, as well as every other mixture.

It must unite readily with oil, not become tarnished on a red hot tile, or plate of iron, and it ought to dissolve in strong acids, almost like the zeolite, without causing an effervescence. In the year 1763, an ounce of it at Paris, cost four pounds sterling, and an ounce of *endre d'outramer*, which is the refuse, two pounds.

Ultramarine, it appears, must have been common about the end of the fifteenth century. In the first half of the sixteenth century, Vanuccio Biringuccio gave directions for preparing the real ultramarine, which he distinguishes with sufficient accuracy from copper azur. In the beginning of the sixteenth century, the father of the celebrated Giambatista Pigna, an apothecary at Modena, acquired great riches by possessing the secret of making the best ultramarine. Alexius Pedemontanus, in his book *De Secretis*, seems to have been the first author who in the beginning of the sixteenth century gave a proper account of ultramarine.

UMBER, UMBRE. (F. *Ombre*; G. *Umbra*; D. *Umbra*; I. *Umbria*, *Terra d'Ombre*; S. *Sombra*; P. *Terra sombra*; DA. *Umbra*; SW. *Umbra*; POL. *Umbra*; R. *Umbra*; L. *Umbra*.)

Umber is a fossil, of brown or blackish colour, used in painting; so called from Umbria, the ancient name of the Duchy of Spoleto in Italy, whence it was first obtained. Diluted with water, it serves to make a dark brown colour, usually called with us hair colour.

Dr. Hill, and Mr. da Costa, consider it as an earth of the ochre kind. It is found in Egypt, Italy, Spain, and Germany; in Cyprus also, it is found in large quantities; but what we have brought into England, is principally from different parts of the Turkish dominions.

## W.

WAX, BEES-WAX. (F. *Cire*; G. *Wacks*; D. *Wasch*; I. *Cera*; S. *Cera*; P. *Cera*; DA. *Vox*; Sw. *Vax*; POL. *Wosk*; R. *Wosk*; L. *Cera*.)

The substance wherewith the bees make their combs, is gathered from the stamina of flowers. It is very common to see bees sitting upon flowers, with their bodies all over powder. They take care to clean themselves of this powder with the brushes of their feet, and to make it into two small balls, which they place in the two triangular cavities of their hinder legs. Some of these balls are yellow, some red, others green, &c. according to the colour of the flower dust. This substance however does not become wax, till it has been eaten, and transformed by the bee. It is said that the second stomach is the organ by which this powder is altered, and changed into real wax, and is thrown out again through the same passage that it went in. It is observable, that the bees extract but a small quantity of real wax out of the powder which they gather, the residue serving to feed them. It is with this sort of paste that they build their combs; and when dry, it becomes the substance named bees-wax. Every comb newly made is white; but they become yellowish as they grow old, and at last almost black. But all combs do not furnish wax equally white, as is well known to those whose business it is to blanch it.

As it is necessary for bees to make a provision of rough wax, there is in every hive a pretty large portion of the combs, whose cells are filled with nothing but wax, and like so many little magazines, where the bees go to deposit their little balls, one after another, while other bees take care to knead, press, and



lay them in order. The provisions of undigested wax, which some have called bee-bread, serve them in winter to feed upon.

Yellow wax should always be of a good consistence, fine colour, and of a pleasant smell. The French consider that made in Champagne, to be the best. It contains a great deal of essential or acid salt, and phlegm, with a small quantity of oil and earth. The white wax contains the same principles, only not quite so much salt.

Virgin wax is that which is made without the help of fire, and is only a preparation of the yellow, which must be melted, washed several times in water, divided into pieces, laid upon linen cloth, and so exposed to the sun for six weeks or two months, till it becomes white. That which is very white, clear, transparent, hard, brittle, tasteless, and not sticking to the teeth when chewed, is reckoned the best.

In Russia, and in America, there is sometimes found in the trunks of old trees, a sort of black wax, in round bits, of the size of a nutmeg. This is produced by a small kind of bees, and when heated, has a smell like balm; the Americans make candles of it.

Wax is seldom used inwardly in medicine, but enters into many compositions of outward applications. It is a particularly valuable article in hot countries, where tallow is too soft to make candles with.

The yellow wax, used in this country, principally comes from Poland and Russia. Upper Egypt produces large quantities of this article.—The most esteemed is that of a fragrant smell and bright colour.

**WEED-ASHES.** (F. *Vedasse*, *Quedasse*; G. *Waidasche*; D. *Weedäsch*, *Weedüs*; DA. *Veedaske*; Sw. *Veedaska*.)

Weed-ashes are a kind of wood-ashes, not lixiviated, but repeatedly wetted with the lye of wood-ashes,

and calcined to a degree so as to vitrify: on this account it is difficult to extract their salt.

Weed-ashes are particularly used by dyers, and come from Poland, and other parts.

WELD, DYERS-WEED, YELLOW-WEED. (F. *Gaude*, *Herbe à jaunir*; G. *Wau*, *Waude*; D. *Wouw*, *Wouwe*; I. *Guadarella*, *Guado minore*, *Erba guada*; S. *Gualda*; P. *Gauda*, *Herra gauda*; DA. *Vau*; Sw. *Vau*, *Gaude*; POL. *Farbownik*; R. *Wou*; L. *Reseda luteola*.)

The weld or would plant grows spontaneously in most of the southern parts of Europe, and in the Levant. It is a stalky plant, which in France is ripe in June and July, when it is collected and made up in bundles for shipping. The smaller yellow weld is preferred to that which is larger and greenish.

The use of this plant in dying yellow, has decreased in Great Britain, since the discovery of the superior qualities of the quercitron bark; the latter, if of fine quality, yielding about ten times as much colour as the best weld, and producing all the colours and effects to be produced by the weld plant.

WHALE-FINS, WHALEBONE. (F. *Fanons de Baleine*; G. *Wallfischbarden*, *Fischbein*; D. *Balein*, *Balyn*, *Walrischbeen*; I. *Ossò di Ballena*; S. *Balenas Palo de Cotilla*; P. *Ossò de Balca*; DA. *Fiskebeen*, *Hvalfiskebeen*; Sw. *Fiskben*; POL. *Fiszbin*; R. *Ussù kitowiiè*; L. *Testum*, *Costa Sartoria*.)

What is called whalebone, adheres to the upper jaw of the whale, and is formed of thin parallel laminæ, some of the longest four yards in length. Of these there are commonly three hundred and fifty on each side, but in very old fish more; about five hundred of them are of a length fit for use, the others being too short.—Recently whalebone has been so split as to make brushes for domestic purposes, and to supersede the use of bristles.

WHALE-OIL; see TRAIN-OIL.

WHEAT. (F. *Froment*; G. *Weizen*; D. *Tarw*; I. *Grano, fromento*; S. *Trigo*; P. *Trigo*; DA. *Huede*; SW. *Huede*; POL. *Pszenica*; R. *Pscheniza*; L. *Fru-mentum, Triticum*.)

Linnæus comprehends the different kinds of wheat, cultivated at present, under six species; but cultivation has produced a great many varieties from these.

1. *Triticum æstivum*, or spring wheat; 2. *Triticum hybernum*, winter or common wheat; 3. *Triticum turgidum*, thick spiked, or cone wheat; 4. *Triticum polonicum*, or Polish wheat, similar to the *turgidum*; 5. *Triticum spelta*, spelt, or German wheat; 6. *Triticum monococcum*, St. Peter's corn, or one-grained wheat.

Amongst these six species, the *triticum hybernum*, winter or common wheat, principally or only deserves our notice. Of what country it be a native; cannot now be determined. The grain is rather plumper than the summer-wheat, and is cultivated in most parts of Europe. The principal corn countries from whence we draw our supply in war times, and in case of a deficiency of our own crops, are Poland, Prussia, Russia, Germany, Zeeland, the coast of Barbary, and the shores of the Black Sea.

North America produces a considerable quantity of wheat; but the Americans are in the habit of reducing it into flour, and exporting it in that state.

The Zeeland wheat approaches nearest in quality to our full-grained English white wheat, then follow the high mixed, and then the mixed wheats of Poland. The red wheat growing in the latter country, is similar to the red wheat coming from Germany; but the Russian red wheat is of an inferior quality.

A lean, hard kind of red wheat, grows in Barbary; and also on the shores of the Black Sea. The crops, in the latter districts, are so plentiful, that it is usual to allow one-half to the reapers, by way of wages.

It seems now beyond dispute, that in war times, when the consumption of corn is considerably increased, Great Britain does not produce a sufficiency of wheat for her own use.

WHITE CINNAMON; see CORTEX WINTERANUS.

WHITE-LEAD; CERUSE. (F. *Céruse*, *Chaux de plomb*; G. *Bley weiss*; D. *Loodwit*; I. *Biacca*; S. *Albayalde*; P. *Albaiade*; DA. *Blyehvidt*; SW. *Blyhvitt*; POL. *Bielidlo*, *Bleywas*; R. *Bjelilü*; L. *Cerusa*.)

If lead is exposed to the vapours of warm vinegar, it is corroded into a kind of calx, which is used in great quantities in painting, and is known by the name of ceruse or white-lead. The preparation of this pigment, has become a distinct trade, and is practised in some places of this kingdom, where lead is procurable at the lowest price. The process for making white-lead is as follows.

Leaden plates rolled spirally, so that the space of an inch shall be left between each circumvolution, must be placed vertically in earthen pots of a proper size, containing some good vinegar. These leaden rolls ought to be so supported in the pots, that they do not touch the vinegar, but that the acid vapour may circulate freely between the circumvolutions. The pots are to be covered, and placed in a bed of dung, or sand bath, by which a gentle heat may be applied. The acid of vinegar being thus reduced into vapour, easily attaches itself to the surface of these plates, penetrates them, and is impregnated with the metal, which it reduces to a beautiful white powder, called ceruse. When a sufficient quantity of it is collected on the plates, the rolls are taken out of the pots and unfolded; the ceruse is then taken off, and they are again rolled up, that the operation may be repeated.

In this process the acid being overcharged with lead, this metal is not properly in a saline state; hence ceruse is not in crystals, nor soluble in water.

This preparation is the only white, hitherto found fit for painting in oil: but the discovery of another would be desirable; not only from the faults of ceruse, but also from its injuring the health of people employed with it.

WHITE PEPPER; see PEPPER.

WINE. (F. *Vin*; G. *Wein*; D. *Wyn*; I. *Vino*; S. *Vino*; P. *Vinho*; DA. *Vin*; SW. *Vin*; POL. *Wino*; R. *Wino*, *Winogradnoe wino*; L. *Vinum*.)

Wine is an agreeable spirituous liquor, produced by fermentation from those vegetable substances, that contain saccharine matter. A very great number of vegetable substances may be made to afford wine: as grapes, currants, mulberries, elderberries, cherries, apples, pulse, beans, peas, turnips, radishes, &c. Hence under the class of wines or vinous liquors, come not only wines absolutely so called, but also ale, cyder, &c.

Wine, however, is in a more particular manner appropriated to the liquor, drawn from the fruit of the common vine, *vitis vinifera*. All the sorts are propagated either from layers or cuttings, the former of which is greatly practised in England, but the latter is much preferable.

The vine was introduced by the Romans into Britain, and appears formerly to have been very common. From the name of vineyard yet adhering to the ruinous sites of our castles and monasteries, there seem to have been few in the country, but what had a vineyard belonging to them. The county of Gloucester is particularly commended, by Malmsbury in the twelfth century, as excelling all the rest of the kingdom in the number and goodness of its vineyards. In the earlier periods of our history, the Isle of Ely

was expressly denominated the isle of vines by the Normans.

Doomsday exhibits to us a particular proof, that wine was made in England, during the period preceding the conquest. After the conquest, the Bishop of Ely appears to have received at least three or four tuns of wine annually, as tythes, from the produce of the vineyards in his diocese; and to have made frequent reservations in his leases, of a certain quantity of wine for rent. A plot of land in London, which now forms East Smithfield, and some adjoining streets, was withheld from the religious house within Aldgate, by four successive constables of the Tower, in the reign of Rufus, Henry, and Stephen; and made by them into a vineyard, to their great emolument and profit. The wines of Gloucestershire, within a century after the conquest, were little inferior to the French in sweetness. The beautiful region of Gaul, which had not a single vine in the days of Cæsar, had numbers so early as the time of Strabo. The south of it was particularly stocked with them, and they had even extended themselves into the interior parts of the country: but the grapes of the latter did not ripen kindly. France was famous for her vineyards, in the reign of Vespasian, and even exported the wines to Italy. The whole province of Narbonne was then covered with vines; and the wine merchants of the country were remarkable for all the knavish dexterity of our modern brewers; tinging it with smoke, colouring it with herbs and noxious dyes, and even adulterating the taste and appearance with aloes. And as our first vines would be transplanted from Gaul, so were in all probability those of the Allobroges in Franche Compté. These were peculiarly fitted for cold countries. They ripened even in the frosts of the advancing winter, and they were of the same colour, and seem to have been of the same kind as the black muscadines of the present day. These were pretty certainly brought into Britain, a little

after vines had been carried over all the kingdom of Gaul, and about the middle of the third century, when the numerous plantations had gradually spread over the face of the latter, and must naturally have continued their progress into the former.

The Romans, even nearly to the days of Lucullus, were very seldom able to regale themselves with wine. Very little was then raised in the compass of Italy, and the foreign wines were so dear, that they were rarely produced at an entertainment; and when they were, each guest was indulged only with a single draught. But in the seventh century of Rome, as their conquests augmented the degree of their wealth, and enlarged the sphere of their luxury, wines became the object of particular attention. Many vaults were constructed, and good stocks of liquor deposited in them. This naturally gave encouragement to the wines of Italy. The Falernian rose immediately into great repute; and a variety of others, that of Florence among the rest, succeeded it about the close of the century. The more westerly parts of the European continent, were at once subjected to the arms, and enriched with the vines of Italy.

The process of making wine is as follows: when the grapes are ripe, and the saccharine principle is developed, they are mashed, and a few days afterwards pressed. The juice which flows out, is received in vessels of a proper capacity, in which the fermentation appears, and proceeds in the following manner. At the end of several days, and frequently after a few hours, according to the heat of the atmosphere, the nature of the grapes, the quantity of the liquid, and the temperature of the place in which the operation is performed, a movement is produced in the liquor, which continually increases; the volume of the fluid augments; it becomes turbid and oily; carbonic acid is disengaged, which fills all the unoccupied part of the vessel, and the temperature rises. At the end of several days, these tumultuous motions subside,

the mass falls, the liquor becomes clearer, and is found to be less saccharine, more odorant, and of a red colour, if the grapes have been black; from the reaction of the ardent spirit upon the colouring matter of the pellicle of the grape. To give a deep red colour to wine, it is necessary to use only black grapes, and to leave them fermenting in their mashed state, previous to the pressing.

The wine is usually taken out of the fermenting vessels, when the phænomena of fermentation have subsided. When the mass is settled, the colour of the liquor is well developed: when it has become clear, and its heat has disappeared, it is then put into casks, where by a second, less sensible fermentation, the wine is clarified, its principles combine more perfectly together, and its taste and smell become more and more developed. If this fermentation be stopped or suffocated, the gaseous principles are retained, the wine is brisker, and more of the nature of must.

The different kinds of wines produced in Europe and other parts of the world, are many; the principal of them, and their qualities are well known: a catalogue of them would serve no purpose here.

The colour of wine is frequently artificial; a deep red is almost always the effect of artificial additions, as the red woods, elder berries, bilberries, &c. In France no secret is made of these practices, the colouring matters being publicly thrown out, after they have been used. A common practice is, to throw sugar of lead and alum amongst sour wine, in order to sweeten it. These substances being extremely hurtful to the human constitution, it becomes of importance to be able to detect them, when mixed with wine. For this purpose the following test is furnished.

Take equal parts of calcined oyster shells and crude sulphur in fine powder, and put them in a crucible, which place into the fire, and raise the heat suddenly, till it has been exposed to a white heat for



fifteen minutes. Then take it out, let it cool, beat the ingredients to powder, and put them into a well corked bottle. To prepare the test liquor, put twenty grains of this powder, together with one hundred and twenty grains of cream of tartar, and put them into a strong bottle, fill it up with water, boil it for an hour, and let it cool. Cork the bottle immediately, and shake it from time to time. After some hours repose, decant off the clear liquor into an ounce vial, having first put twenty-two drops of muriatic acid into each vial. Cork these vials accurately, with a little wax mixed up with a little turpentine. One part of this liquor, mixed with three parts of suspected wine, will discover the presence of the smallest quantity of lead or copper, by a very sensible black precipitate; and of arsenic, by an orange precipitate. Pure wine remains limpid after the addition of this liquor.

To discover whether any wine is free of alum, put a small quantity of it with limewater; this mixture, at the end of twelve or fifteen hours, will furnish a quantity of crystals, which may be separated by filtration, and these crystals will be easiest discovered, when the quantities of wine and limewater are equal. Wine which contains alum, will not form crystals, when mixed with limewater, but merely deposits a muddy sediment.

The greatest proportion of the wines consumed in this country is brought from Spain and Portugal, particularly the latter kingdom; government having always discouraged the importation of French wines by heavy duties. We are not sure how far such conduct is founded on good policy, as the French wines are certainly the most wholesome, and might be the cheapest. The advantages which Britain derives from the Portugal trade are so great, that they deserve some return, and it would perhaps not be easy to secure them on any other terms.

The consumption of the German, French, and Ita-

lian wines in this country, is but trifling. Sicily produces red and white wines equally as strong as the Portugal wines, and which would come cheaper. Amongst them the white Mount Ætna wine is famous for its strength, being very similar in taste to Madeira:

The Constantia or Cape wine, sold in Europe at so high a price, comes from two farms, called Great and Little Constantia, situated below the east side of Table Mountain, on the Cape of Good Hope. This wine is highly delicious, but so extremely sweet, as only to be fit for the desert. Of the red Constantia, about sixty pipes are made, and of the white about ninety.

The best Cyprus wine is produced in that part of the island of Cyprus called the Commandery, from the Grand Commandery of the Templars and Knights of Malta occupying that district. This wine is accounted a delicacy at most of the tables of Europe. The whole quantity of the best wines made annually in Cyprus, amounts to forty thousand jars. Larnic is the port in the island from which all the wines are exported; and they principally go to Venice.

On landing wines in this country, the less they are exposed the better; for they are affected by the seasons, and more or less by the weather. The great art in keeping wines, is to prevent their fretting, which is done by keeping them in the same degree of heat. In spring and fall, the wines of Bourdeaux are subject to changes that may be dangerous, if not prevented by necessary rackings: these changes are solely the effect of the seasons. If wines are chilled, and of course turn foul, from being shipped and landed in cold weather, they will soon recover, by putting them in a warm vault, well covered with saw-dust. But if shipped or landed in summer; if the smallest degree of fermentation be found on them; it will be requisite to dip the bung cloths in brandy, and leave the bungs loose for some days, to give them time to cool;

and if in a fortnight or three weeks the fermentation does not cease, and the wine become bright, it will be proper to rack it, matching the hogsheads well with brimstone, and force it with the white of eight eggs. If it then becomes fine, bung it tight, and let it remain so, until it is bottled. Attention should be had to bottle in fine weather, when the wind is north, but to avoid cold and frosty weather. The months of April and October are favourable.

The forcings proper for claret, are the whites of a dozen eggs, beat up with a teaspoonful of fine salt, and well worked with a forcing rod. This is for one hogshead, and care must be taken not to use any bad eggs. The forcing for white wine is isinglass dissolved in wine. An ounce is sufficient for two hogsheads. No salt is to be used.

WOAD. (F. *Pastel*, *Quede*, *Vouede*; G. *Waid*; D. *Weede*; I. *Quadone*, *Quado*, *Glastro*; S. *Pastel*, *Glasto*; P. *Pastel*; DA. *Vede*; SW. *Vejde*; POL. *Sinilo*; R. *Ljernak*; L. *Quadum*, *Glastum*.)

The *isatis tinctoria*, or woad plant, is biennial; the lower leaves are of an oblong oval figure, and pretty thick consistence, ending in obtuse roundish points, of a lucid green.

The stalks rise four feet high, dividing into several branches, garnished with arrow-shaped leaves, sitting close to the stalk. The branches are terminated by small yellow flowers. The time for gathering the crop, is according to the seasons; but it should be performed as soon as the leaves are fully grown, while they are perfectly green: for when they begin to change pale, great part of their goodness is over. If the land be good, and the crop well husbanded, it will produce three or four gatherings, but the two first are the best, being worth about four times as much as the third and fourth crop.

The leaves are carried directly to a mill, much resembling the oil or tan mills, and ground into a

smooth paste. If this process was deferred for some time, they would putrify, and send forth an insufferable stench. The paste is laid in heaps, pressed close and smooth, and the blackish crust which forms on the outside, reunited, if it happens to crack. If this was neglected, little worms would be produced, and the woad would lose part of its strength. After lying for fifteen days, the heaps are opened, the crust rubbed, and mixed with the inside, and the matter formed into oval balls, which are pressed close and solid in wooden moulds. These are dried upon hurdles; they turn black on the outside, if in the sun; if in a close place, yellowish, especially if the weather be rainy. The dealers in this commodity prefer the first. The good balls are distinguished by their being weighty, of an agreeable smell, and when rubbed, of a violet colour within.

Woad not only affords a lasting and substantial blue, which, according to the scale of the dyers, may be reduced into many different shades, but is also of great use in dying and fixing many other colours. But the use of woad has very much decreased since the introduction of indigo, which affords a more lively and pleasing colour, is managed with more ease by the dyers, and does their business more expeditiously. Woad and indigo are frequently used in conjunction; the former to give solidity and substance, the latter brightness and colour.

Woad was once the great staple of Languedoc, and was cultivated also in Normandy, and other provinces of France. It now is cultivated in several parts of Great Britain, in Spain, Portugal, the Azores, and Canary Islands, in Switzerland, different parts of Germany, and in Sweden.

WOOL. (F. *Laine*; G. *Wolle*; D. *Wol*; I. *Lana*; S. *Lana*; P. *Laa, Lü*; D. *Uld*; S. *Ull*; POL. *Wolna*; R. *Wolna, Scherst*; L. *Lana*.)

Wool is the covering of the sheep; and like hair of horses, cattle, &c. compleats its growth in one year,

then falls off, and is succeeded by a fresh crop. Hairs are commonly of the same thickness in every part; but wool constantly differs in thickness in different parts, being generally thicker at the points than at the roots. That part of the fleece of sheep which grows during the winter, is finer than what grows in summer. Each fleece consists of wool of divers qualities and degrees of fineness, which the dealers take care to separate. The French, Spaniards, and English, usually separate each fleece into three sorts, viz. 1. Mother wool, which is that of the back and neck. 2. The wool of the tails and legs. 3. That of the breast and under the belly. These assortments are called prime, second and third quality. The Spaniards in packing their wool, mark each bag with a capital letter, denoting the sort. If the separation be well made, in fifteen bags of wool there will be twelve marked R, that is refined, or prime; two marked F, for fine or second; and one S, for the third quality.

In Spain, there are two kinds of sheep: the coarse wooled, which always remain in their native country, and are housed every night in winter, and the fine wooled, which are constantly in the open air, and travel every summer from the cool mountains of the northern parts of Spain, to feed in winter on the southern warm plains of Andalusia, Mancha, and Estremadura. Of these latter it appears, from accurate computation, that there are about five millions; and that the wool and flesh of a flock of ten thousand sheep, produce yearly about twenty-four reals a head, two of which belong to the owner, six to the King, and the remaining sixteen are allowed for the expences of pasture, tythes, shepherds, dogs, shearing, &c. Ten thousand sheep form a flock, which is divided into ten tribes, under the management of one person, who has absolute dominion over fifty shepherds and fifty dogs. They leave the North of Spain in the month of October, and return in April: and whether it be habit, or natural instinct, that draws them towards

the climate, which at those seasons becomes most proper for them, the inquietude which they manifest, might in case of need, serve as an almanack for their conductors.

The Spanish wandering sheep on the whole, resemble those of the South Downs; their legs are as short as those of that breed; a point which merits observation, as they travel so much and so well. Their shape is very good: round ribs, and flat straight backs; and would with us be reckoned handsome sheep, and in good order and flesh. The soil of these mountain pastures is in general stony, and the herbage has nothing peculiar, so that the fine quality of the wool seems principally owing to the constant exposure of a temperate atmosphere. The fleece of some of the finest rams, is said to weigh as much as eight pounds; but on an average, the fleeces of the flock weigh from four to five pounds English.

The number of stationary sheep in Spain, is computed to be eight millions.

In England, the best sort of sheep for fine wool, are those bred in Herefordshire, Devonshire, and Worcestershire; but they are small and black faced, and bear but a small quantity. Warwick, Leicestershire, Buckingham, and Northamptonshire, breed a large-boned sheep, of the best shape and deepest wool we have. The marshes of Lincolnshire, breed a very large kind of sheep, but their wool is not good, unless the breed be mended, by bringing in sheep of other countries among them, which is a scheme of late very successfully followed there. Suffolk also breeds a very valuable kind of sheep. The northern counties in general, breed sheep with long, but hairy wool: that however, taken from the neck and shoulders of the Yorkshire sheep, is used for mixing with Spanish wool, in some of the finest cloths. Wales bears a small hardy kind of sheep, which has the best tasted flesh, but the worst wool of all. Nevertheless it is of more extensive use than the finest Segovian fleeces:

for the benefit of the flannel manufacture is universally known.

The sheep of Ireland, vary like those of Great Britain ; those of Scotland, are of a small kind, and their fleeces coarse.

The finest French wool comes from Roussillon and Berry ; the latter is said to have the particular property, that it will knot or bind with any other sort, whereas other kinds will only knot with their own sort.

Among the ancients, the wools of Attica, Megara, Laodicea, Apulia, and especially those of Tarentum, Parma, and Altino, were the most valued. Varro assures us, that the people there used to clothe their sheep with skins, to secure the wool from being damaged.

**WORM-SEED.** (G. *Wormsaamen* ; D. *Zeverzaad* ; DA. *Ormfro* ; F. *Sementine* ; I. *Santonies* ; SP. *Semen contra* ; P. *Semente contre vermes*.)

A hot, bitter, drying kind of seed, often given to destroy worms in the human body: this seed is small, of an oblong figure, and a strong smell: it must be chosen new, greenish, and of a sharp bitter aromatic taste.

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## Y.

**YELLOW BERRIES, AVIGNON BERRIES.** (F. *Graine d'Avignon* ; G. *Gelb Beeren*.)

This is the fruit of a species of lycium, growing plentifully in different parts of France, and particularly in the neighbourhood of Avignon. The berry is somewhat less than a pea: its colour is green, approaching towards a yellow, and it is of an astringent and bitter taste. It is much used by the dyers, who stain a yellow colour with it; and by the painters, who also make a fine golden yellow of it.

## Z.

ZINC, SPELTER. (F. *Zinc*; G. *Zink*, *Spiauter*; D. *Zink*, *Spiauter*; I. *Zinco*; S. *Zinco*; P. *Zinco*; DA. *Zink*; Sw. *Zink*; POL. *Cynek*; R. *Schiauter*; L. *Zincum*.)

Zinc is a semi-metal, of a blueish white colour. It is the least brittle of any of the semimetals, and when amply supplied with phlogiston, it possesses a semi-ductility, by which it may be flattened into thin plates. When broken, it appears formed of many flat, shining plates or faults, which are larger when slowly, than when hastily cooled. Exposed to the air, it contracts in length of time a yellowish rust. Its specific gravity, is to that of water, as  $7\frac{1}{10}$  to one. It begins to melt as soon as red hot, but does not flow thin, till the fire is raised to a white heat; then the zinc immediately begins to burn with an exceedingly bright and beautiful flame.

Zinc, besides its medical qualities, is of great use in the arts: united with copper in different proportions, it forms brass and pinchbeck; and united with tin, it forms a kind of pewter. Its inflammable property renders zinc an useful ingredient in fireworks.

ZAFFER; see COBALT.

THE END.







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