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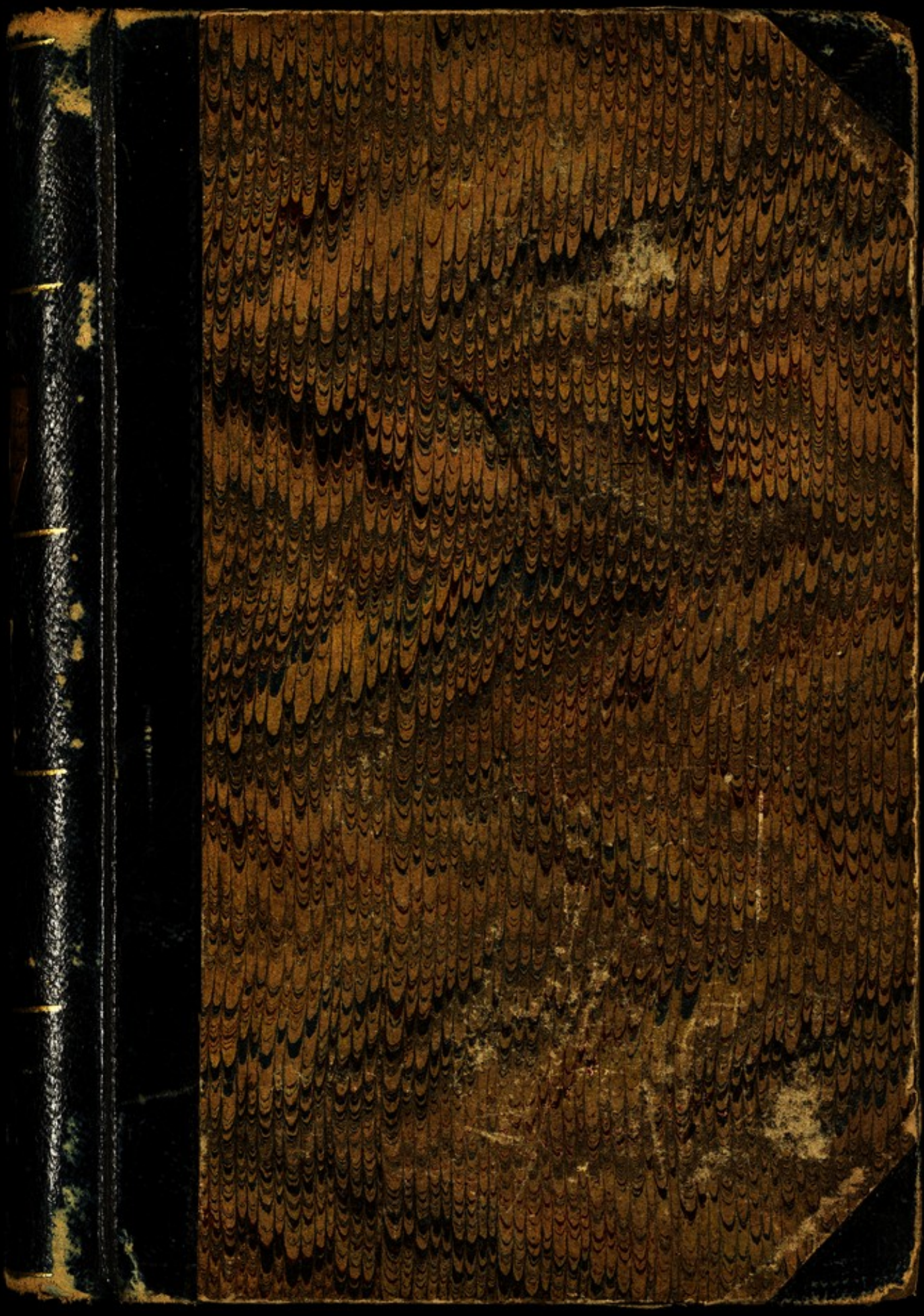


RAMC 1933

Chemistry

Chemistry is the science, which treats of the composition of bodies and in it all bodies are divided into simple and compound.

Simple bodies are those, which have never yet been decomposed, i.e. resolved into different kinds of matter; and are 65 in number of which 44 are metals and the other 11 nonmetallics or metalloids.

Metals have a peculiar brilliancy called the metallic lustre; are all of them solid at common temperatures except mercury; all of them are heavier than water except potassium and sodium; are good conductors of heat and electricity; most of them are malleable and ductile; are positive electrics and have a great affinity for Oy of the air, forming with it alkalies, alkaline earths, earths, oxides and acids. Nine only are commonly known, because the others are either rare or have so great an affinity for O, that they are with great difficulty procured and preserved.

Alkalies are soluble in water, are caustic and of an acrid taste; change vegetable yellows to browns and blues to green; they combine with acids forming neutral salts and with oils forming soaps. They are four in number; viz: Soda; Potash;

Ammonia is now considered to be the oxide of a metal called ammonium.

Ammonia and Lithia. But ammonia differs from the others by being alone volatile and not the oxide of a metal, but a compound of two gaseous nonmetallic elements Handf.

Alkaline earths are also four in number and are all the oxides of metals, viz.

1. Lime, the oxide of calcium.
2. Magnesia, the oxide of magnesium.
3. Strontia, the oxide of strontium.
4. Baryta, the oxide of barium.

They resemble the alkalies by being caustic and acrid; have the same effect on vegetable colours and also form neutral salts with acids; but they are less acrid and caustic; do not form soaps with oils and are very sparingly soluble in water; and their carbonates and most of their other salts are insoluble in water

Earths are many but two only need be learnt for the Hall

1. Alumina, the oxide of the metal aluminium, commonly seen as slate and clay and existing in the salt termed alume.
2. Silica, the oxide of the metalloid silicon, commonly seen as flint and sea sand and the basis of glass and the superior kinds of porcelain.

Acids are of a sour taste; are & nearly all & very soluble in

Graham's Theory

Formerly O was considered the sole acidifying principle, but now in the opinion of Liebig H is the sole acidifying principle and that there are no oxacids.

Every H atom has 1 equivalent of each element

Hydrated means comb. w Aq

oxacids comb

Hydracids comb

waters; change vegetable blues to red and combine with alkalies to form neutral salts. They are commonly divided into mineral, vegetable and animal. The chief mineral being Nitric, Sulphuric, Hydrochloric and Carbonic; but they are better arranged as.

Oxacids, whose acidifying principle is O; and
Hydracids, whose acidifying principle is H.

In chemistry the terms, which are employed, indicate the composition of the bodies, to which they refer. The names of all hydracids begin with hydro. The names of all acids end in ic except those of some oxacids containing but little O and which end in ous.

A true salt is a compound of an acid and a base
Bases for salts are of three kinds.

1. Oxides of metals { Alkalies + Earths
   Alkaline earths
   Other oxides neither alkalies nor earths

2. Ammonia, the volatile alkali {3 H. 1 N.}.

3. Alkaloids, vegetable proximate principles having alkaline properties {C. H. O. N.}.

The first great rule of chemistry {Barrows}
No acid can combine with a metal, but only with the oxide of a metal.

Sulphuric acid ——— Soda, forming sulphate of soda + or salt of the base of sodium

Hydrochloric acid { H. ——— Cl. } Soda.
{ Chlorine + Sodium } forming water and chloride

of sodium { Use of ox to form acid in to combine with ox of metallic oxide as Sulph ac S. O_4 + H | Sulphion

treat by nitric ammon

Hydronitric ox of Ethule in H Alk Nit

Arsenite Potash in Liq Pt Ars Pt

The second great rule of chemistry {Barrow's}.
No hydracid can combine with the oxide of a metal, because when they meet, the O and H unite to form water and the simple element of the acid combines directly with the metal to form a false salt. Therefore the hydracids can form salts with ammonia and the alkaloids only. On the above two rules depend all the decompositions of the pharmacopia.

A false salt is a compound of a nonmetallic (metalloid) simple body directly with a metal; thus common salt being a compound of chlorine with the metal sodium is a false and not a true salt.

Metalloid } chlorine
Metal } sodium

Nomenclature of salts.
True salts formed by acids in ic terminate in ate; but those formed by acids in ous terminate in ite.
False salts formed by simple bodies in ine terminate in ide, but those formed by simple bodies ending otherwise terminate in uret.

Examples.

Sulphate of iron {sulphuric acid and oxide of iron} true
Sulphite of iron {sulphurous acid and oxide of iron} true
Sulphuret of iron {sulphur and iron} false
Chlorate of potash {chloric acid and potash} true
Chloride of calcium {chlorine and calcium} false

False Salts

many comp.ds of non metallic
many comp.ds metallic ~~with~~ of metals have external appearance
& characters of salts as Chloride Sodium yet are false salts
as they have not base & acid (ine - ide) (ethereal ureas as Sulphuric
barbituric &c

nothing to do w alk & acid

Sublimation - solids rise in vapour & condense in capital
(~~Distill~~ Diffn. Distill).

Digestion is maceration & aid of heat

Chloride of sodium { chlorine and sodium } false
Iodide of potassium { iodine and potassium } false
Hydrochlorate of ammonia { hydrochloric acid and ammonia } true

A neutral salt is one that has neither acid nor alkaline properties.

A supersalt salt is one in which the acid is in excess.

A subsalt is one in which the alkali is in excess.

A binoxide is a compound containing 2 O and the same of bichlorides, biniodides, &c.

A protoxide is a compound containing the smallest quantity possible of O. with Law NB not one eq

A peroxide is one containing the largest quantity possible of O.

Bi prefixed to the name of a salt indicates 2 of acid; but di indicates 2 of base. Latin Greek

Bichloride { Diacetate / Tris nitrate } { Bi / Ter }

Both together seem to be used and practice

Distillation is the process of raising a liquid in vapour by heat and condensing it again by cold, so as to obtain it free from non volatile impurities.

Destructive distillation is the process of decomposing organic matter by intense heat in closed vessels and collecting all the products.

Elutriation is the process of obtaining an insoluble substance in fine powder by suspension in water.

Light acts ox from from N & C leaves of Plants (Day) but not
fro by preventing ox comb$ &c &c N & Sh

Lixiviation is the process of obtaining a soluble substance free from insoluble impurities by solution in water.

Divellant affinities (attraction increases) are those, which tend to produce decomposition, while those which tend to prevent its occurrence and preserve existing compounds are termed quiescent.

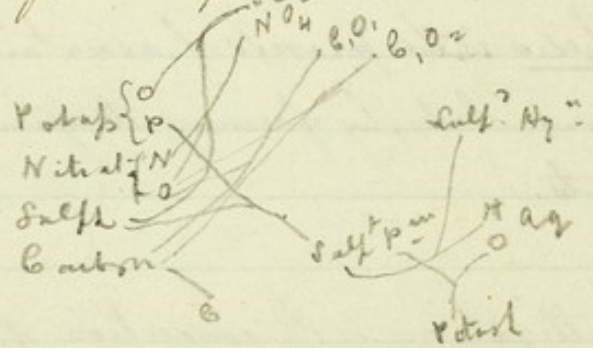
Analysis is the process of ascertaining the composition of a compound body by the separation of its elements.

Synthesis is the process of ascertaining the composition of a compound body, by forming it again by the reunion of its elements.

Crystallization is the concretion of matter in regular solid forms from the liquid or gaseous state, by the attraction of cohesion overcoming chemical affinity or the expansive power of caloric. It is promoted first by the evaporation of fluid, which allows the particles to come within the sphere of their mutual cohesion; secondly by the introduction of a solid into a liquid, upon which the crystals may form and the best solid to introduce would be a crystal of the salt to be obtained, because it presents the proper surfaces and angles, upon which the new matter may concrete.

the best instance of this is in gunpowder, where C and sulphur burn although enclosed in the chamber of a gun, because they are mixed with nitrate of potash, which becoming decomposed yields to them a sufficient supply of O. Carbonic acid gas, carbonic oxide gas, sulphurous acid gas and nitrous acid gas are instantaneously formed, and these expanding drive the ball before them, while the only solid residue is a little sulphuret of potassium and superfluous C. In sponging out the gun a portion of the water and sulphuret of potassium mutually decompose, the O with the potassium forms potash, while the sulphur with the H. forms sulphuretted H. which produces a fetid smell.

20 S
15 C
65 $KO.NO_5$



Here caloric gives the O sufficient elasticity to rise in the gaseous state and escape from the affinity which holds it to the manganese.

Here caloric is assisted by the affinity of sulphuric acid for the oxide of manganese and a whole equivalent of O is evolved.

Here caloric alone is sufficient to evolve all the O. because mercury has less affinity for O. than manganese has.

Deflagration is the process of burning a combustible body with another that can yield it a large supply of O, so that the combustion may go on independant of the O of the air. Nit Potash & Chlorate Pot both yield O

Oxygen is a simple body nonmetallic, which exists abundantly in the atmosphere 1/5 mixed with N. and in water 8/9 combined with H. when uncombined is in the gaseous state.
It is the great supporter of animal life and of all ordinary combustion and has a great affinity for metals, with which it forms oxides, alkalies, alkaline earths, earths and acids.
It is the acidifying principle, whence its name {oxys, and gyroμai}; it is the chief negative electric and has the most extensive affinities of any substance in nature, and its atomic number is 8.

To obtain oxygen gas.

1. Take binoxide of manganese and apply to it a red heat in an iron retort or gunbarrel, then ½ O flies off and a sesquioxide of manganese remains.
2. To binoxide of manganese add sulphuric acid and apply a gentle heat, in a glass retort, when 1 O flies off and a sulphate of the oxide of manganese remains.
3. Take binoxide of mercury and apply heat, when 2 O. fly off and metallic mercury remains in globules.
4. By applying heat to a salt called Chlorate of Potash

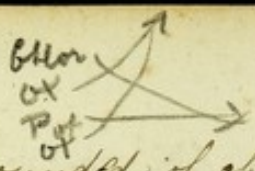
Gases when made are collected in inverted glass receivers filled with water (some m/ - some warm aq) and placed in a pneumatic trough. This method was invented by Dr Priestly.

Iron wire & Diamond alone burn in Ox not in air
Some metals burn in Chlorine gas as well as O_2

Mercury = Carb ac ammon Hydrochloric ac gas
Warm aq = Chlorine

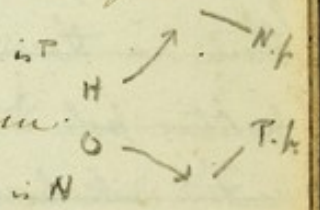
Calorific promotes combustion in 2 ways { by overcoming attraction of cohesion
by increasing chemical affinity
v.g. of combustible for Ox of air

It is always obtained by the decomposition of water.
except by decomposition of Hydrochloric Ac by oxidizing metal -



which is compounded of chloric acid and potash, when the chlorine unites with the potassium to form chloride of potassium, which remains (in solution), while 6 O. are given off i.e. 5 from the chloric acid and 1 from the potash.

6. By the decomposition of water by galvanism.



Hydrogen is a simple body nonmetallic, which exists most abundantly in water combined with O, when uncombined is in the gaseous state and is then the lightest of all known substances; it is highly combustible but cannot support combustion; it is one of the acidifying principles, it enters into chemical combination in the smallest proportion of all known substances, whence it is taken as the standard for atomic numbers, and its own set down as 1.

To obtain hydrogen gas

1. By adding zinc or iron filings to water and sulphuric acid when a part of the water becomes decomposed its O combines with the zinc forming oxide of zinc, with which sulphuric acid forms sulphate of zinc, which remains in solution and the H is evolved.
2. By passing steam over ironfilings, heated to redness in a gunbarrel, when watery vapour becomes decomposed, the iron filings take the O to form oxide of iron and the H flies off.

Decomposition of water by galvanism.

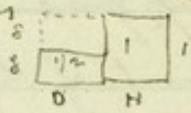
You take two test tubes, fill them with water and invert them in a saucer of water. You then bring the wires that form the poles of a powerful galvanic battery and place them in the water, one under each tube, taking care that the positive pole is of platinum. Then as the electric current passes, water will be decomposed; its O going to the positive and its H to the negative pole, and the other gases will collect in the inverted tube. The positive pole must be of platinum, because it is the least oxydisable and because with any other metal the O would combine and then only H. would be obtained. Half as much by bulk is obtained of O as of H, but if they were weighed, there would be found 8 O. and 1 H. so that the following is the composition of water

By bulk of its gases 1 O. 1 H.

By weight of its gases 8 O. 1 H.

one vol of O is 16 times one of H when in equal volumes

Electrolysis; i.e. fluid decomposed by electric current passed through it



3. By decomposing water by galvanism, whenever a red hot iron comes in with water, the water becomes decomposed.

Oxygen		Hydrogen
Appears at the positive pole		Appears at the negative pole
½ by volume		1 by volume
8 parts by weight		1 part by weight
Supports animal life		Cannot support animal life
Supports combustion		Cannot support combustion
Not combustible		Combustible

Atomic Theory totally distinct being atoms uniting as H_2O, but not H_2O_2 cannot be formed by H_2O

Chemical combinations are of three kinds.

1. Some bodies unite in all proportions without limit, as alcohol & water &c

2. Some bodies unite in all proportions in a certain limit as sugar and water, salt and water &c; when the water has dissolved as much as it can, it is said to be saturated, but water saturated with one salt, will sometimes absorb a small quantity of another or even a third salt.

3. Most bodies unite in a few fixed proportions only; the greatest number of combinations formed by any two bodies being 5 or 6 and generally not more than 1 or 2. And combinations of this kind take place according to two remarkable laws.

more than three atoms as can only form by compounds

a. The law of definite composition, viz, that the composition of a compound body is fixed and invariable and always

Faraday Dalton atomic theory

consists of the same elements united in the same proportions

3. The law of multiples, that when two bodies unite in more than one proportion, the quantity of one element in each succeeding compound is always a multiple by some whole number of the smallest quantity, with which the other element can combine; thus O and H form besides water another compound, an oily liquid, termed binoxide of H. in which one part of H. is combined with 16 O. i.e. with twice the quantity that it is in water.

And these laws are explained by supposing that matter exists in certain most minute particles called ultimate atoms, by which it enters into chemical combination; so that in each succeeding compound, one, two, three or more atoms of one element are combined with each atom of the other.

This is the atomic theory, which was first applied to chemistry by Dalton of Manchester.

Now a scale of numbers has been formed to show the proportions by weight in which bodies combine and these numbers are properly termed chemical equivalents, but if the atomic theory be true, they may also be called atomic numbers, because they will indicate the relative weight of the ultimate atoms.

In this scale H is taken as the standard and its number set down as 1, because it enters into combination

Ox. is taken by some as standard of chem equivalents cause its compounds so numerous Lance other is called Hydrogen scale

Two modes of stating analysis of comp^d bodies (Liebig founds)

Quantitative states the proportion of elements in certain weight as in 100 pts or per cent

Qualitative states composition by atoms (thought better cause enables us easier to perceive changes which substances undergo and predict that may result from it decomposition

1st
oxalic ac C —
O —
100

2nd Cr_2O_3 = results = $CrO + CrO_2$

What is weight of 1 atom of Sulphur

What are atomic numbers? No.s which express smallest proportions by weight in which bodies combine taking combining proportion of H as 1 or which also show weight of ultimate atoms

What are ultimate atoms? The most minute particles in which matter can exist or they which it enters into combination (chemical) (not say divided as they cant be divided)

What is use of atomic No.s? 1st/ they inform us in what proportion to use our materials to produce chemical results (as in PL)

2nd they enable us to correct results of analysis

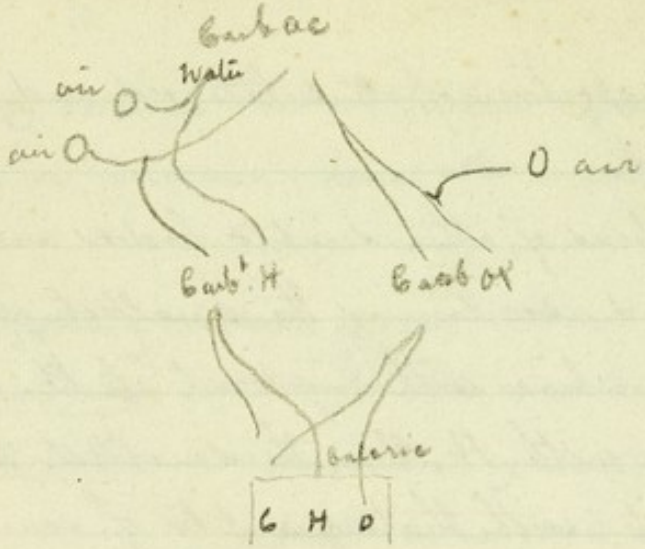
in the smallest proportion of all substances, and fractions are thereby avoided.

The atomic numbers of other simple bodies are found by experiment and ascertaining the smallest quantity, in which they will combine with one part of H. or if they will not combine with H, then the smallest proportion in which they unite with that quantity of some other substance, which does combine with 1. H.

The atomic numbers of compound bodies are found by ascertaining their composition and adding together the atomic numbers of their constituents.

Atomic numbers of the simple bodies.

		Symbol {indicate the weights & volumes of 1 eq of each}	{indicate the weight of each substance one eq}
1	Hydrogen	H	1
8	Oxygen	O	8
6	Carbon	C	6
14	Nitrogen	N	14
36	Chlorine	Cl	36
126	Iodine	I	126
16	Sulphur	S	16
16	Phosphorus	P	16
40	Potassium	K (Kalium)	40
24	Sodium	Na (Natrium)	24
202	Mercury	Hg	202
104	Lead	Pb	104
28	Iron	Fe	28
108	Silver	Ag	108



Theory of the combustion of a candle.

When heat is applied and the wax is melted and by capillary attraction ascends the wick where it becomes resolved into carburetted H. and carbonic oxide gases, these both burn by combining with O of the air, the former with a yellow and the latter with a blue flame, and the products are carbonic acid gas and watery vapour, the use of the wick is to raise the wax in a proper proportion to combine with O of the air.

The brilliancy of the flame is owing to its containing minute particles of C in an incandescent state.

The flame of pure H gives but very little light.

Combustion may occasion without ox as some metals in Chlorine

Carbon is a simple body nonmetallic, which exists in all animal and vegetable substances and also in the mineral Kingdom in the form of carbonic acid. When uncombined is in the ~~gaseous state~~ solid form, being commonly seen as charcoal and pure and crystalized in the diamond. It is combustible, a positive electric and atomic number is 6.

~~Bad conductor of caloric and electric~~

Combustion is rapid chemical union with evolution of heat and light.

For combustion to take place, three things are required

1. A combustible body.
2. A supporter of combustion
3. A temperature at which they will combine.

The chief combustible elements are C and H.

The chief supporter of combustion is O of the air.

Caloric aids combustion in two ways

1. By overcoming the attraction of cohesion } so cant act on gases
2. By augmenting chemical affinity

The result of the union is called the product of combustion.

The product of the combustion of C is carbonic acid

The product of the combustion of H is water.

Never a loss of weight from combustion (rather an increase) as matter can be destroyed

Flame is gaseous matter so heated as to be luminous

"incandescent gas"; but it is only luminous on the surface where combustion is going on by union with O. of the air; the interior is not sufficiently heated, whence some define flame to be a hollow cone of incandescent gas.

Smoke is unburnt, uncombined C and soot is the same concreted.

The compounds of C and O are three in number.

1. Carbonic oxide	1C. 1.O.	6C. 8O	14
3. Carbonic acid	1C. 2.O.	6C. 16O.	22
4. Oxalic or hypocarbonic acid	2C. 3.O.	12C. 24O.	36.

The compounds of C and H are very numerous of which the following are the chief.

1. Light carburetted H.
2. Heavy carburetted H.
3. Elefiant gas. $C_2 H_2$
4. Naptha, a clear liquid, which exists in some coal districts and is also made artificially in the course of making gas. It is used by chemists to keep the metal potassium.
5. Ethule, a compound radicle $C_4 H_5$.
6. Benzule, the basis of, benzoic acid.
7. Oil of turpentine and some other volatile oils.

All the above are highly combustible, their products are carbonic acid gas and watery vapour.

Artificial respiration Make pressure on both walls of chest + abdomen same time + suddenly remove it when elasticity of ribs + ~~diaph~~ & expands (air keeps out) Pneumatic) the lungs being free of this pressure

analysis of bat ac

102

80 Potassium 16 ← 22 Carb. O_2

Potash 96 + 6

Eighty grains of potassium require 22 of carbonic acid gas for their perfect combustion; ninety six grains of potash will be formed and 6 grains of pure C will deposit as a black insipalpable powder.

96 Potash white

6 O_2 P

6 Carbon black

∴ 1 eq 6 O_2 = 22

2 eq. K = 80

1 of K burns 1 Pot so as 2 of O in C ac ac must have 2 Potassium

gas generating

If allowed to escape from liquid state heat is the cause that in becoming gas would

becomes liquid

(To get 6 O_2 liquid generate it in a confined space when the pressure of one render other 6 O_2 liquid

pressure are : 33 atmospheres at 32°

when solid it produces effect of burn

It takes from it & renders it solid

-1218°

expansion of vapour requires heat of which

what goes on with carbon in body Combustion causes heat is evolved.

5

Carbonic acid is the constant product of the combustion of C.; it is a mineral acid and exists in the atmosphere, of which it forms a 1000th part; it is also abundantly combined with many bases especially lime and magnesia. When uncombined is in the gaseous state and is a very heavy gas, sp. gr. 1500, whence it is called fixed air and can be poured from one vessel to another like water. Carbonic acid gas is not combustible because its C is already combined with its full complement of O and can take up no more. in fact already burnt {would combustion as it will take more oxygen} Neither will it support combustion, because its O is united to the C. by too powerful an affinity to leave it to enter into new combinations. But Potassium will burn it, because it has a greater affinity for O than C has; and in this way chemists analyze carbonic acid. or any thing

The natural sources of the carbonic acid gas of the atmosphere are respiration of animals and of plants during the night, combustion of all carbonaceous matter, every fermentation except the acetous and issues spontaneously from the earth in coal mines and other parts of the world. It usually collects at the bottom of any chamber in which it may be formed; but as given off from our lungs, it ascends, because it is expanded and rendered lighter by the heat of the chest; the same also happens when it is the product of combustion.

candle will burn when man cant breathe Lence a list of

The asphyxia from pure carbonic acid is occasionally seen in mines, where it is called choke damp, also when persons have gone down into old wells and brewers vats. by sodium formate

If called to a brewery, where a man lies insensible at the bottom of a vat, throw in lime and water or water alone to absorb the gas, as cast iron pan to vat when a person ties a handkerchief, dipped in lime water or water over his mouth and nostrils and goes down to fetch the other up. When he is brought up, you perform artificial respiration, also frictions with hot flannels over limbs and body, apply ammonia to the nostrils, and pass a series of galvanic shocks through the region of the diaphragm, it may also be necessary to bleed from the jugular vein. nVs 5-

The narcotism is seen, where persons sleep in rooms, where charcoal is burning or in persons sleeping near lime kilns. The person when found presents symptoms of coma with livid lips and countenance.

The person is more recoverable from the narcotism than the asphyxia, for pure carbonic acid gas must destroy life in 2½ minutes. But the narcotized patient may be recovered after many minutes by being exposed to the pure atmosphere.

8 Bleachers
Ox of air
Sulphurous ac Gas
Sunlight
Chlorine decomposes Aq to form Hydrochloric ac two vol of Hyd,
Charcoal by absorbing offensive matter
Ox of iron
Clay
Lime

state of oats before

Sulf to more transport neg electric
forms more transport positive
Lap volatile

Carbonic acid gas may be obtained artificially by the action of almost any acid on any carbonates, but usually by that of sulphuric acid on chalk. This I shortly explained in a former way. It must be collected through mercury, for water absorbs it rapidly, even its own bulk and might be made to take up more by cold and pressure. A pure atmosphere of carbonic acid gas would excite spasmodic closure of the rima glottidis and speedily destroy life by asphyxia, but when diluted with air, it may be respired and if in more than a certain proportion, it acts as a narcotic poison on the brain. Sp gr 1500 air 100

Charcoal is of two kinds, animal and vegetable.
Vegetable charcoal is made by burning wood without free access of atmospheric air, when the vegetable matter decomposes, watery vapour and carbonic oxide gas fly off and residual C remains mixed with some saline matters.
Animal charcoal is made by burning bones without free access of air, as in vegetable charcoal, when the animal matter decomposes and flies off in the form of water, carbonic oxide gas and ammonia, and C is left mixed however with a large proportion of phosphate of lime, from which it is purified according to WL by the action of hydrochloric acid. digesting
Charcoal is singular in being a very good conductor of electricity, but a bad one of caloric, is a bleacher, for it absorbs the colouring matter of vegetables, also has the property

Diamond consists by weight 16 of ox to 6 of it self = forms but ac

The diamond though pure carbon can only be burnt at a great temperature or in pure O, because its particles are united by so powerful an attraction of cohesion, which resists the power of chemical affinity.

Atmospheric air is not a compound of N and O, but a simple mechanical mixture of those two gases in the proportion of 79 N to 21 O. The proofs of which are.

1. The ready way in which the N leaves the O in respiration and other processes.

2. The uniform composition of the atmosphere in all situations The O and N in the air are mingled through each other by the general law of the diffusion of gases and vapours, by which which one gas penetrates and rushes into another as if into a vacuum, which is explained by supposing that although similar gaseous particles repel each other, they attract those of a different kind. Air also contains 1 part in 1000 of carbonic acid gas and on the average 30 in 1000 of watery vapour, also a minute portion of ammonia and all the other volatile principles in nature. It is on the presence of these latter adventitious matters that the different salubrity of the air in different situations depends. not on account N O always comes every where into & Dalt

Analysis of Air is proved by making Nitrogen

of absorbing large quantities of many gases, among which, of sulphuretted H. and on this its power of removing the taint of putrefaction depends. Chlorine decomposes both H gas sulphu + Hydrosulph ac

Azote

+ Nitrogen is a simple body anmetallic, which exists in the atmosphere abundantly mixed with O and in most animal and some vegetable principles; when uncombined it is in the gaseous state and is principally characterized by its negative qualities. It cannot support combustion, but is + incombustible; it cannot support respiration but is not 8 poisonous; it is tasteless and inodorous and has very little affinity for any principle except H, with which it forms ammonia; its atomic number is 14. Compounds of N and O.

Name	By atom	Characters (3 H O / 2 N O)
Nitrous oxide gas	1N. 1O.	A gas respirable but intoxicating
Nitric oxide gas	1N. 2O.	A gas which on mingling with the O of the air takes 2 O and forms red fumes of nitrous acid.
Hyponitrous acid	1N. 3O.	
Nitrous acid	1N. 4O.	Exists either as a reddish gas or dissolved in water forming an orange coloured solution.
Nitric acid	1N. 5O.	Exists either combined with bases forming nitrates or with at least 1½ water forming liquid nitric acid.

If deprived of these it decomposes and resolves into nitric oxide gas and O.

Nos O2 air mixture

Nitric acid when pure is colourless, but by the action of the sun's light a portion loses $1\,O$ and becomes nitrous acid, which gives the liquor a yellow tinge

metals not oxidised by decomposition of acid as with Sulphuric

To obtain nitrogen gas.

You burn phosphorus in a jar of air inverted over water, when the phosphorus combines with the O and a white cloud of phosphoric acid is seen in the interior of the jar; this is then absorbed by the water and the N is left and the water rises $\frac{1}{5}^{th}$ of its capacity into its interior. The N is at first impure being mixed with a small quantity of carbonic acid gas, which is to be removed by agitation with lime water. It may also be obtained by the action of Nitric acid on muscular fibre. Nitric acid gives morphia & forms with it with ag ammonia

Nitric acid commonly called aqua fortis because it is the most powerful oxydising agent we possess. It acts upon all metals except gold and platinum and most energetically on copper.

When nitric acid acts upon a metal a part of the acid becomes decomposed to oxydise the metal and a part of its O combines with the metal to form an oxide with which the undecomposed nitric acid combines and nitric oxide gas is given off, with which the O of the air combines and forms red fumes of nitrous acid. For perfect decomposition there are required 4 Nitric acid and 3 of the metal, because 1 nitric acid decomposing and nitric oxide gas flying off; 3 O combine with 3 of the metal to form 3 of oxide, which with the 3 Nitric acid undecomposed form 3 of the nitrate.

If the gases are not used in the proper proportion, part of that which is used in excess will be left.
Whenever H burns water is formed from H & O & air, but this apparatus is necessary to exclude the O of the air, which otherwise would unite with the H and the exact composition of water could not be obtained. Cavendish first performed this experiment.

Synthesis of water. seq analysis – Galvanometer

You take a strong glass bottle with a screw and stop cock at the lower end and at the upper end a cap through which two wires pass, which nearly but not quite meet in the interior. You first exhaust the vessel of atmospheric air by means of the air pump and you then fill it with 1 H and 1/2 O, which you have previously mixed in the proper proportion. You then pass an electric spark through the wires, when a flash of flame will fill the jar and a watery dew will be seen deposited in its interior. The vessel must be very strong to bear the sudden pressure of the atmosphere, when the gases unite. No vapour cause air can't mix together to fill the vacuum formed

Sulphur is a simple body non-metallic, which exists chiefly combined with metals forming sulphurets or sometimes pure and crystalline especially in volcanic districts, when uncombined is solid, highly combustible, a positive electric, atomic number 16 s & m alcohol & oil

It forms 4 compounds with O

Name	Atoms	Atomic number
Hyposulphurous acid		
Sulphurous acid	SO_2	32
Hyposulphuric acid		
Sulphuric acid	SO_3	40

Sulphurous acid gas is the constant product of the combustion of sulphur.

100 - 4 · 1.

Strong sulphuric acid is composed of, 1 real acid and 1/4 water and is a dense oily liquid commonly called oil of vitriol sp. gr. 1845.

Its most striking property is its great affinity for water, of which these are the proofs.

1. If exposed in a shallow vessel to the air in 24 hours it will double its weight and in 12 months 6 times its weight.
2. It chars all organic matter by depriving them of, their O and H in the form of water and setting C free.
3. It decomposes alcohol by taking away its water and converting it into ether. See Phillips H 90
4. When mingled with water condensation of volume ensues and great heat is evolved.

Sulphuric acid can be obtained without water by destillation from the sulphate of iron and is then in the solid form like hoar frost and is called glacial or anhydrous sulphuric acid; of course it can only be kept in sealed vessels. This has no acid properties, which is explained on the theory of Liebig that H is the sole acidifying principle.

Common theory.

Anhydrous sulphuric acid = SO_3 no acid properties
Strong liquid sulphuric acid = $SO_3 + HO$.
Sulphate of potash = $SO_3 + KO$.

It is an irritant suffocating gas and excites spasmodic closure of the rima glottidis. It is also a bleaching agent.

Sulphuric acid is made by deflagrating 8 sulphur with 1 nitrate of potash, in a vessel so contrived, that the gaseous products may pass into a leaden chamber, the bottom of which is covered with water. Bellows play on the deflagrating mass and steam passes into the upper part of the chamber from a boiler. Then the nitric acid decomposes, part of its O unites with 1 part of the sulphur to form sulphuric acid, which unites with the potash to form sulphate of potash, which remains in the deflagrating pot, nitric oxide gas flies off, which with the O of the air forms nitrous acid gas. The sulphur also by burning becomes sulphurous acid gas, so that we have together in the leaden chamber, nitrous acid gas, sulphurous acid gas and watery vapour. These three unite and form a crystalline compound composed of sulphuric acid gas, hyponitrous acid gas and water ~~vapour~~. It being thought that in its formation the sulphurous acid gas has taken O. from the nitrous acid gas. When this compound falls into the water, it decomposes; the sulphuric acid is retained by the water and the hyponitrous acid gas rises again in the chamber and attracting O from the air, it forms nitrous acid gas again and this, with more sulphurous acid gas from the burning

Liebig's Theory

Sulphuric acid = SO_4H. requires or to form ag

Sulphate of potash = SO_4K.

SO_4 is called by Liebig sulphon and is in his view the basis of sulphuric acid; also NO_6 he calls nitron and considers it to be the basis of Nitric acid.

Salt ac contains like other Hydrac acid - that the H given off comes from acid itself not from the ag as usually described The Hydrsulphon combines directly with the metal H acidifying principle (H) being thus lost may explain the neutrality of the salt resulting

(Hydrochloric ac same c silica)

Phosphorus non metallic & complete hydrates in human body form of phosphate lime also in some stone and + vegetable ac combined it is sold in sticks like white sticks positive electric atomic No. 16 & soluble in other soil

sulphur and more watery vapour, forms the white crystalline compound a second time and so the process continues until either deflagration ceases or the water is saturated.

Phosphorus is obtained by calcining bones, when the animal matter becomes decomposed and expelled in the form of ammonia, water and carbonic acid; and phosphate of lime is left, to this add dilute sulphuric acid, when the acid combines with the greater part of the lime forming an insoluble sulphate and a superphosphate of lime remains in solution, this solution is then evaporated down to the consistence of syrup, mixed with powdered charcoal and distilled in an earthen retort, the beak of which is placed under water; then the phosphoric acid in excess becomes decomposed, its O combines with the charcoal to form carbonic acid gas, while phosphorus distills over and is collected in the water and the neutral phosphate of lime remains.

There are five compounds of phosphorus and O.

1. Oxide of phosphorus — imperfect combustion of Phosph
2. Hypophosphorous acid
3. Phosphorous acid — $P.O.1\frac{1}{2}$ imperfect combustion Phs
4. Phosphoric acid composed of $PO_{2\frac{1}{2}}$.
5. Pyrophosphoric acid

Phosphorus emits light in the dark because it is constantly undergoing a slow combustion and becoming converted into

Chlorine gas must be collected over warm water, because by cold water it would be absorbed, but the caloric of warm water gives the chlorine sufficient elasticity to rise in the gaseous state and escape from the affinity, which will hold it in the water. Chlorine is a vapour and not a permanent gas, because by the pressure of four atmospheres at a temperature of 32° it is reduced to a liquid state. 4 Atmospheres Hydrog.

Chlorine gas is of use as a disinfectant to fumigate tainted apartments, and it certainly has the power of decomposing sulphuretted H, which is the most pestilential of gases, taking the H to form hydrochloric acid and setting the sulphur free, but whether it has any influence on the malaria of disease is undetermined.

phosphorous acid, which has a garlicky smell. It should always be kept under water and particularly should be cut under water, otherwise its temperature being raised by the friction of cutting, it will be liable in the open air to pass into open combustion.

Chlorine is a simple body nonmetallic, which exists most abundantly in sea water combined with sodium, when uncombined it is in the gaseous state of a greenish yellow colour irrespirable, because it excites spasmodic closure of the rima glottidis, but supports the combustion of some metals as gold silver, antimony, copper and zinc. It is the most powerful of bleachers, a negative element, atomic number 36.
It is obtained.

1. By heating 2 Hydrochloric acid with 1 Binoxide of manganese, then 2 H combine with 2 O and form water; 1 Chlorine unites with 1 Manganese to form chloride of manganese and the other equivalent of chlorine is given off.
2. By heating chloride of sodium with binoxide of manganese and sulphuric acid. Then 1 O of the binoxide of manganese unites with the sodium to form soda, which with sulphuric acid forms sulphate of soda and the sulphuric acid also combines with the oxide of Manganese forming sulphate of manganese, so that two salts remain in the retort and chlorine is evolved.

Diff atomic weight

N O_5 = 54 | P O_5 = 164

P O_5 }
- N O_5 }
C O_5 }

all in one pot

There are four compounds of chlorine with O.

1. Hypochlorous acid
2. Chlorous acid
3. Chloric acid composed of $Cl_2:O_5$
4. Perchloric acid ——— $Cl_2.O_7$.

The latter contains the largest number of equivalents of O of any compound known.

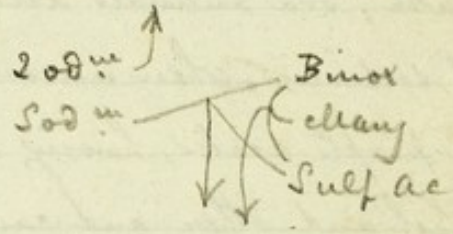
Iodine is a simple body nonmetallic, which exists in sea water, sea animals and sea plants in the form of iodide of sodium, when uncombined is in the solid form, being in purple scales, having a metallic lustre, soluble in alcohol and ether and can be made soluble in water by the addition of iodide of potassium; by heat it rises in violet coloured vapours and combines with starch to form a blue compound the iodide of starch. It is a negative electric; atomic number 124.

The compound of iodine with O is

Iodic acid. composed of IO_5 so that nitric, iodic and chloric acids have the same atomic number, so that each of these has the same equivalents of O.

With H. Iodine and chlorine each form an hydracid; an hydriodic and hydrochloric acids; both these like every other hydracid is composed of one equivalent of each of its elements. Hydrochloric acid when uncombined is in the gaseous state

Bromine & Iodine got in same way (Chlorine also)



but is commonly seen in the liquid form combined with water, for which it has a very great affinity and was formerly called muriatic acid. Hydrochloric acid can be analysed by the addition of metallic zinc, which will take the chlorine to combine with the zinc and set H free.

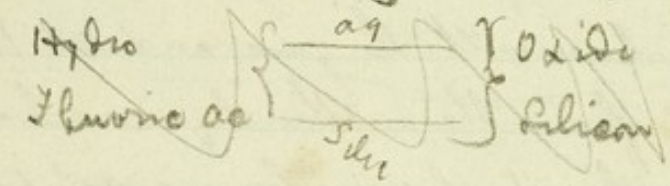
Iodine is obtained from the mother-ligior, which remains after crystalliying carbonate of soda from a solution of the ashes of sea weed, in which it exists in the form of Iodide of sodium, by heating it with binoxide of manganese and sulphuric acid. Then 1 O from the binoxide of manganese combines with the sodium to form soda, with which sulphuric acid unites to form sulphate of soda and the sulphuric acid also combines with the oxide of manganese to form sulphate of manganese, so that two salts remain in the cucurbit and the Iodine sublimes.

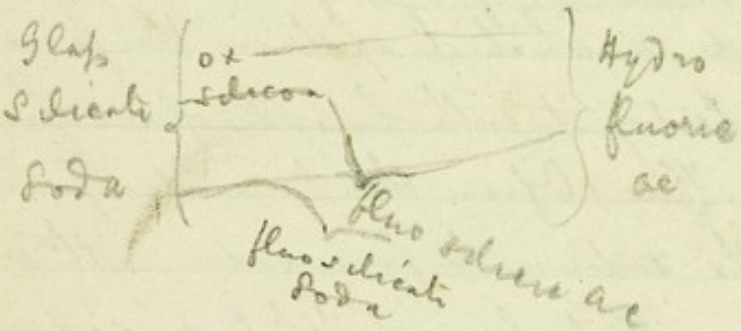
Fluorine is a simple body nonmetallic, which exists in Derbyshire spar, combined with calcium, when uncombined is in the gaseous state. Its most important compound is hydrofluoric acid, which is obtained by the action of hydrochloric acid on fluor spar, and which has an energetic action on glass, so that it must be made and collected in leaden vessels. It is used for engraving on glass.

Glass is made by fusing sea sand and soda. Sea sand is pow-

In the pure or white glass, there are oxides of lead and other metals, which is the reason, why white glass bottles ought not to be used for the strong alkaline solutions.

Green glass (common) being almost pure silicate soda





Ammonia Volatile alkali N H_3 = 17 exist: naturally in urine & in muriate guant in atmosphere & constant product of decomposition of all nitrogenised (ammonia organic principles uncombined is gas cons - great affinity for aq with which it is generally seen combined constituting Liq Amm highly acrid & possesses all other properties of an alkali Berzelius considers its oxide of Ammonium (a comp. metal ammonium N H_4) O = $NH_3 + HO$ and which combination there are the same elements as in 1 amm + 1 aq indeed when amm is decomposed by galvanism mercury placed about the positive pole with become hastily hospitably iron forming an amalgam with the

dered flint and is called by chemists silica being the oxide of silicon; it acts the part of an acid and combines with soda, so that glass may be termed the silicate of soda.

Bromine is a simple body nonmetallic, which exists in sea water combined with magnesium, when uncombined is in the liquid state, of a brownish colour, having a fetid odour, a negative electric. There is one preparation of it in the Ph: L: the bromide of potassium. Write for enlarged flues

Boron is a simple body nonmetallic which exists in a small quantity in India, in the form of boracic acid combined with soda, constituting the salt termed biborate of soda or borax.

Organic chemistry.

Organic substances are the products of animal or vegetable life, they either are or have been alive and are distinguishable from inorganic matters by 5 characters.

1. They are all composed of the same elements united in different proportions
2. They cannot be formed by direct union of their elements.
3. They have all a tendency to undergo spontaneous decomposition.
4. They are often convertible one into the other.
5. They are all decomposed by a red heat.

In organic chemistry compound bodies form combinations in the same way as simple bodies do in inorganic chemistry and the compound bodies, which in this way serve as bases are called compound radicles and organic chemistry is now often called the chemistry of the compound radicals.

Oils and fat contain no R.

this metal althe it cannot be obtained so pure The radicle salt from which all the Amm are got is Hydrochlorate of ammoniac // made by priests of Jupiter Ammon in Egypt from camels dung hence origin of name Ammonia (see how made in Ac comp[ositions])

Those compounds which exist ready formed in animals or vegetables are called animal or vegetable proximate principles, the simple bodies of, which the proximate principles are composed are termed their ultimate ~~atoms~~ elements. Every proximate principle, whatever contains C, most of them are composed of C. O. H and some in addition contain N and some also contain very minute proportions of sulphur, phosphorus, salts, iron &c.

As a general rule animals contain more of nitrogenized principles than vegetables do, hence the simplest mode of distinguishing animal from vegetable matter is by combustion, when from the presence of N. and formation of ammonia, animals give off a fator, which is not perceived in the combustion of vegetable matter.

No organic principle contains enough O to convert all its C into carbonic acid and all its H at the same time into water. For in the mineral kingdom the C exists in the form of carbonic acid and all the H except a little in the shape of ammonia exists in the form of water. Hence therefore the effect of life is take the C and H from compounds in which C and H are combined with a smaller quantity of O than they are in their inorganic state and during the life of animals and in the putrefaction of both animals and vegetables after death the C and H

take additional quantities of O from the air and return to the form carbonic acid and water. By this also is explained the combustibility of all organic substances, because at a sufficient temperature the C and H are sure to combine with the O of the air and returns to their inorganic state.

Starch, amyla or faecula is a vegetable proximate principle composed of $C_{12}H_{10}O_{10}$; which exists in the cotyledons and albumen of seeds, in the tubers and rhizomes of roots and parenchyma of leaves, is insoluble in cold water, but is dissolved in hot, with which it forms a jelly, which is explained by its existence in microscopic granules $\frac{1}{300}$ of an inch in diameter, whose outer envelope is unaffected by cold water, but is ruptured by hot, allowing the internal gummy matter to be dissolved. It is highly digestible and nutritious but as it contains no N cannot alone support life; it is liable to saccharine fermentation, by which it is converted into sugar.
Starch is obtained by the mechanical action of water on bruised wheat contained in linen bags, when it is washed away and afterwards deposited in cisterns, in which the water is allowed to settle; the gluten and episperm of the wheat is left behind in the linen bags.

There are three kinds of sugar, which differ from each other.

1. Cane sugar, which exists in the sugar cane, beetroot and maple and is the only one which readily crystallizes.
2. Grape sugar, which exists in ripe fruits, in diabetic urine and honey and is produced from starch in the saccharine fermentation.
3. Sugar of milk.

In malting the germination of seeds is made use of, to obtain sugar, barley is steeped in water and spread out on a warm floor, it germinates and its starch is converted into sugar, as soon as the radicle appears it is placed in a kiln, where by heat the young plants is dried up and destroyed and so the sugar is preserved for use.

Sugar is a soptable and aminal proximate principle composed of $C_{12} H_{12} O_{12}$ soluble to any extent in boiling water and a solution saturated at a common temperature is called a Syrup ℥ sugar lbx water Oiij ℥ has a sweet taste, liable to alcoholic fermentation, when it becomes resolved into carbonic acid gas and alcohol.

Fermentations are those spontaneous changes, which organic matter undergoes under certain ~~changes~~ circumstances. There are five principle fermentations

1. Saccharine
2. Alcoholic
3. Acetous
4. Putrefactive
5. Panumby Panarae, which is a modification of the saccharine and alcoholic.

Liebeg call it catalysis i.e. the element change their assignment

Saccharine fermentation

Required starch in one of its natural forms, moisture and warmth; then the starch takes up H and O in the proportions in which they form water, a little carbonic acid is given off, and it becomes converted into sugar.
It takes place naturally in the germination of seeds and in the growth of the tubers and rhizomes of roots, in order that the accumulated nourishment may become soluble

The fluid first obtained is by no means pure alcohol, but is largely diluted and usually contains much of vegetable impurities. If from an infusion of malt it is called Beer and if from the juice of fruits, wine. From this spirits of wine is procured by destillation and the purest alcohol by destilling rectified spirit with chloride of calcium, which retains the water while the alcohol comes over. The sp. gr. of pure alcohol is 815 and it boils at 172°. But sufficient cold has never yet been produced to freeze it although it has been reduced to an oily state. Alcohol is considered by modern chemists to be the hydrated opide of a compound radicle termed ethule.

Ethule 4C. 5H.
Oxygen 1.O.
Water 1H.1O.
Alcohol 4C. 6H. 2O.

The reason why alcohol has never been frozen is, because there is so little cohesion between its particles, that we cannot produce a sufficient degree of cold, for the cohesion to fix them in a solid state.

and capable of entering the vessels of the young plant for its nutrition.

Alcoholic fermentation.

Required a solution of sugar, a warm temperature 70° to 80° and a ferment; the most usual ferment is yeast; any nitrogenized substance in a state of decomposition will answer. Now then observe that carbonic acid is given off, sugar disappears and alcohol is formed.

Theory. 1 Sugar is decomposed = 12C. 12 H. 12 O.
4 Carbonic acid gas fly off = 4C. 8O.
2 of alcohol = 8C. 12 H. 4O.

So that 1 alcohol = 4C. 6H. 2O atomic number 46.

Acetous fermentation

Required a fluid that has undergone the alcoholic fermentation, summer heat and a ferment and exposure to the air.

Theory. The alcohol absorbs O from the air and becomes resolved into water and acetic acid.

Alcohol is composed of 4C. 6H. 2O
Absorbs from the air .4O
4C. 6H. 6O.
By absorption 3 of water is formed 3H. 3O.
and acetic acid remains 4C. 3H. 3O. 51.

Acetic acid differs from all other vegetable acids because it does not contain more O than is enough to convert all its H into water.

The fluid used is commonly fermented sweet wort or spoilt wine and the fluid first obtained is vinegar, which contains only 5 per cent of real acetic acid, the rest being water, mucilage and colouring matter and there is also added by the manufacturers one part in a thousand of sulphuric acid. And from these impurities vinegar is freed by destillation for use in medicine, when water and acetic acid come over and mucilage and colouring matter, + sulphuric acid remain behind. Besides by the acetous fermentation, acetic acid is also made by the destructive destillation of beech wood; beech wood is decomposed in closed iron retorts, then the elements of the woody fibre taking a new arrangement, tar, acetic acid and creasote distil over and a residue of C and salts remain in the retort. To the tarry ligiour lime is added, which combines with the acetic acid forming acetate of lime, which being a soluble salt is seperated by lixiviation from the tar; sulphate of soda is then added; when double decomposition takes place, sulphate of lime precipitates and acetate of soda remains in solution, which is crystalliyed and is the source from which strong acetic acid is made in the Ph: L: by destillation with oil of vitriol. This acetic acid is of the strength of 30 per cent and is sometimes called pyroligneous acid, because it was first obtained by fire from wood.

Putrefactive fermentation consists in the utter decomposition of organic matter and its resolution into inorganic compounds.

Those substances are most disposed to putrefaction, which contain N and which either contain much water or have a great affinity for water.

Nitrogen promotes putrefaction by introducing a new affinity viz that for H to form ammonia. Dissolvent

Water promotes putrefaction by giving the particles mobility and overcoming the contraction of adhesion.

Also putrefaction is promoted 2ly by warmth and water but either the freezing or the boiling point prevent it altogether, the former by fixing water in the solid form and the latter by driving off water in the gaseous state and expelling atmospheric air. For the O of the air is necessary to putrefaction, since it can only be by combining with an additional quantity of that element that the C and H can pass from an organic to their inorganic form of carbonic acid and water. Moreover the process of boiling retards putrefaction for some time afterwards and it is also checked by some substances called antiseptics as sugar, alcohol, turpentine and arsenic.

The products of putrefaction are divided into the gaseous solid and liquid.

1. Liquid are water, acetic acid and oil.

2. Gaseous are carbonic acid, carbonic oxide, sulphuretted H, phosphuretted H and ammonia; chiefly in the form of hydrosulphate.
3. Solid are chiefly C with metallic and earthy salts and are termed vegetable soil or humus, which constitutes the true nidus for the growth of plants; this humus however does not furnish the plants with C for that they obtain on the upper surface of their leaves by decomposing the carbonic acid of the atmosphere, it merely furnishes to them the various saline and mineral matters, which though in minute quantity are still absolutely necessary for their healthy growth.

Gum is a vegetable proximate principle composed of C.H.O. soluble in water, with which it forms a mucilage and insoluble in alcohol and precipitates in a flaky form from mucilage by the addition of alcohol. It is digestible and nutritious, though incapable alone of supporting life; it exists in the cellular part of plants, of which it is the chief constituent.

Resin is a vegetable and animal proximate principle composed of C.H.O. highly combustible because the C and H are in great excess over the O, soluble in alcohol, insoluble in water without the addition of an alkali, when it is

What animal principles contain N? fat & oils

vegetable — gum, resin, sugar & lignine
starch, dextrine & cane sugar
alcohol

are both animal & vegetable { Fibrine Albumen Caseine
consist of C H O N { Protein Gelatine
Agents Daily
mulberry vegetable
in gum

Theory of the formation of soap.

Every oil is formed of a mixture of 3 principles, one more liquid called Elaine, one more solid called Stearine. & a 3rd very small quantity called Margarine

When these meet with an alkali they play the part of two acids, combining with it to form salts, soluble in water, so that soap is an oleate and stearate of the alkali used. Soda forms hard soap; potash soft soap and the soaps formed by ammonia are called liniments.

they do in fact i.e. combined in glycerine which is rendered free in soft making

thought to play the part of an acid and form a soapy compound, a resinate of the alkali used, from its alcoholic solution it is precipitated by water.

Gum resins are mixtures of gum and resin, when rubbed down with water, the water dissolves the gum and forms a mucilage in which the resin is suspended constituting a turbid milky mixture.

Balsams are mixtures of resin and benzoic acid.

Oils are proximate principles composed of C. H. O highly inflammable because the C and H are in great excess over the O, not miscible with water, give a greasy stain to paper. They are of two kinds fixed and volatile.

Fixed oils are obtained by pressure from the cotyledons and albumen of seeds except olive oil, which is obtained from the sarcocarp of the fruit, they are insoluble in alcohol except croton and castor oils, they can be made miscible with water by yolk of egg, mucilage or by alkalies and they combine with alkalies to form soaps.

A lather cannot be formed with soap and hard water on account of the lime present, which decomposes the soap and precipitates it as an insoluble stearate of lime. A mixture of a fixed oil with water is called an emulsion.

Volatile oils distilled by heat — set in flame by Nit ac as it gives off O

Oak Lignine $C_{36} H_{22} O_{22}$
Lemon like sugar a nutritious comp?
Strike it forms Oxalic ac by Nit ac added
& Sulphuric ac strong a decomposed
charred by taking it off

giving off N & form
$C_2O_3 + HO$

many $C_8 H_{10}$ as Turpinth some $C_{10} H_{16} O_2$ as Cinnamon most exc of $C_{12} H_{10} O_2$ Hemen inflam oil

Volatile oils are obtained from any part of a plant by distillation, except the cotyledons and albumen of seeds, even the episperm often contains them; they are often termed essential oils, because upon them the flavour and property of the plant often depends, some as the oil of turpentine Camphor contain no O but are pure hydrocarbons. They are made miscible with water by yolk of egg, mucilage or carbonate of magnesia. They are all soluble in alcohol.

Lignum or woody fibre is the most abundant proximate principle of wood and bark, being the chief constituent of all the vascular parts of plants. It is obtained as the residue of the successive action of water, alcohol and hydrochloric acid upon sawdust; the water removes the gum and soluble salts; the alcohol dissolves and removes the resin and volatile oils; the hydrochloric acid removes earthy salts which are insoluble in water and lignum remains. Lignum is totally indigestible and therefore innutritious. Tow is almost pure lignum, being pure woody fibre in the botanical sense of that term.

Tannin is a vegetable proximate principle, the great source of all vegetable astringency, is of an acid nature and is now often termed tannic acid and usually

When $C H_2 O$ are nearly equal in quant as in sugar starch &c they are called "indifferent comp^{ds}". When O over H in excess forms acids as Tartaric $C_4 H_2 O_5$

When $H_2 C$ in excess over O they highly inflam as in oils resins

If no O as St Tercbinths many Volatile oils &c they are called Hydro carbons

When N — then C H O more abundant

morphine $C_{34} H_{20} O_6 N$

exists combined with gallic acid, but in kino and catechu there is no gallic acid. Both tannic and gallic acid have the property of forming black compounds with iron, which are the basis of ink.

But tannin has the peculiar property of combining with gelatine to form an insoluble compound, which is tanned gelatine, which is the basis of leather. Tannin, when obtained pure is in the form of a greenish powder and is soluble in ether and in that form is sometimes recommended to be applied in toothache and is said to be the basis of Ruspini's styptic.

Vegetable acids are composed of C. H. O except oxalic acid which contains no H; also the O is generally in excess over the H, but in acetic acid the O and H are in equal atoms.

Alkaloids are vegetable proximate principles composed of C. H. O. N. having the alkaline reaction on vegetable colours and capable of forming salts with acids, soluble in alcohol but usually insoluble in water and are usually the medical and poisonous principles of vegetable plants ex. gr. morphia, quina, strychnia &c. — differ from alkalies

Fibrine is a vegetable and animal proximate principle

Bisouits being intended to keep are not fermented and are also as the name implies twice baked.

Primary fermentation

Lence in subsiding forms separated layer

composed of C. H. O. N. P. S. and salts and exists in two forms
1. Solid; in muscle and in some seeds, especially of wheat where it is termed gluten; it is insoluble but gluten on kneading with water takes up a certain quantity and forms the viscid paste called dough.
2. Liquid; in blood, chyle and lymph and the juices of some plants as the turnip and is characterized by coagulating spontaneously, when drawn from its vessels; it is effused under inflammation to be a bond of union and is then called coagulable lymph and is capable of becoming organized and rendered a part of the living body; it is also seen pure in the buffy coat of inflammatory blood; and may be obtained artificially by washing blood that has been stirred during its coagulation with a bunch of sticks, when it is a dirty white stringy mass not unlike overboiled veal. It is digestible and most nutritious.

+ easily forms albumen

Wheat flour is a mixture of the two proximate principles starch and gluten; it is the starch that forms the paste when flour is boiled in water, and it is the gluten which forms the dough by kneading. And when this dough is mixed with yeast and placed in a warm situation, then the starch first undergoes the saccharine and then the alcoholic fermentation; and carbonic acid gas is formed

+ alcohol

exc. in Bright's Dis

All albumenous solutions are alkaline, containing soda, and some even think that albumen when in solution always exists combined with soda forming albuminate of soda, if so nitric acid probably coagulates albumen by combining with its soda. The most delicate test for albumen is galvanism, when soda passes to the negative pole and albumen coagulates around the positive pole.

The white of egg coagulates at 160°

The serum of the blood coagulates at 172° alkaloids

Liquid albumen when coagulated cannot be again dissolved; and solid albumen is also insoluble in water.

Whey or serum lactis is the fluid portion of the milk, which remains after the coagulated caseine has been removed.

Fibrine, albumen and caseine are considered by Liebig to be composed of one principle, which is termed proteine and which may be obtained from each of them.

which being confined by the viscidity of the gluten raises the dough, it is then baked to render it more digestible and by driving off the superfluous water to retard putrefaction.

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Albumen is an organic proximate principle composed of C. H. O. N. P. S. and salts and exists in two forms.

1. Solid; in the brain, tendons, cartilages, ligaments and other white parts of animals also in the seeds of, some vegetables as almonds and nuts. quite distinct from term albumen of seeds

2. Liquid; in the blood, fluid in serous cavities, bile, and in its purest and most concentrated form in white of egg and in some vegetable fluids and is characterized by being coagulated by heat and nitric acid, alcohol creasote and bichloride of mercury and some other metallic salts. All albuminous solutions are a

It is nutritious, but solid albumen is difficult of digestion.

Caseine; is an organic proximate principle composed of C. H. O. N. S. and salts; it exists in two forms.

1. Solid; in some vegetables as peas and beans

2. Liquid; in milk and is characterized by being coagulated by acetic acid as also by some other acids (hydrochloric) This happens when milk is taken into the stomach preparatory to its digestion and therefore the child at the breast is living upon a mixture of liquid and solid food. In

Pet theory in Muldees

{ Theory that gelatine forms only gelatinoms
{ life as we can't become Pet in Libys (Daff) twitt

making, chase the caseine is coagulated by an acid fluid called rennet, which is an infusion of the stomach of the calf.

obtained from bovine albumen 7 lb

Proteine is composed of C. H. O. N. so that these three great principles are compounds of proteine with varied proportions of C. H. and salts. These three compounds of proteine always originate in vegetables, which alone have the power of forming them from inorganic matter; animals being only capable of converting them into another; hence the great difference in the nutrition of vegetables and animals; the former taking their support from inorganic matter as carbonic acid, water and ammonia, but the latter feeding on organic matter alone. The three compounds of proteine are considered by Mulder to be the only principles that are truly nutritious, with the addition perhaps of gelatine, which he thinks may renovate the gelatinous tissues of the body, but starch and sugar and such nonnitrogenized compounds he considers not to be truly nutritious, but merely to supply it C and H to support the process of respiration and is the source of animal heat.

Gelatine is an animal proximate principle composed of C. H. O. N. exists chiefly in the skin, also in tendons, carti-

Except a little oil and iron, which the yolk of egg contains; an egg is composed solely of albumen; yet of these with the addition only of a little O. of the air inhibed through the shell every organ of the chicken is formed; the albumen undergoing conversion into the fibrine of the blood and muscles; also in the progress of chyle and lymph through the absorbent glands into the thoracic duct, it seems that the albumen undergoes a change into fibrine and thus approaches more nearly to the nature of blood.

* since in all changes of organic matter it is towards the inorganic state at least out of the body as in fermentations while albumen + bases cause (1st albumen rubefy) become higher i.e. towards living structure as fibrine and blood &c

tages, ligaments and other white parts of animals, especially of young animals, being in the old replaced by albumen; it is commonly seen as glue and pure as isinglass; it is soluble to any extent in boiling water and on cooling forms a tremulous jelly called hydropelatine; with tannin it forms an insoluble compound, termed tannogelatine, the basis of leather. It is very digestible and generally considered nutritious (but according to Liebig only renovates gelatinous tissues, ~~therefore~~ not being a modification of protein it is incapable of transformation into fibrine or albumen.*) Pat C_{40} H_{31} N_5 O_{12}

Zile is 20 of pat C_{40} H_{31} N_5 O_{12} S_1

Urea is an animal proximate principle composed of C, H_2 N, O, atomic number 30. It is formed in the round of the circulation in the systemic capillaries and afterwards eliminated from the blood by the kidneys, which are useful as a medium for the removal of it from the system. In cases of suppression of urine or Bright's disease of the kidney and also in animals from whom the kidneys have been extirpated, it is found in the blood. It is very prone to spontaneous decomposition, when with the elements of water, it becomes resolved into Carbonate of ammonia

	Carbonic acid	Ammonia		
Urea	C . O	H_2 . N.	carbonate of ammonia	atomic number 30. = 30/9
Water	O	. H.		

CO O_2 H_3 N

Evaporate urine to syrup & add Oxalic ac which forms oxalate Urea which being very soluble is separated from impurities by aq. Filter repeat evaporate again & again to clear solution add chalk = $C O_2$ gas escapes Oxalate Lime precipitates & Urea obtained in white crystals

That it is formed in the blood is proved by the accumulating from suppression of excretion of kidneys in animals causing typhoid & coma & death - with odour from excreta on P M in 3 days like carbonic ac in asphyxia in 3 minutes

Water urea Salts ext. { Phosphate of Magnesia & Lime (earthy) / Nitrate Ammonia & Soda (alkalies)

Cyanogen $C_2 N$.

Oxygen O.

Ammonia $N . H_3$ Cyanous acid

Water $O . H$.

2 Urea = $C_2 . N_2 . O_2 . H_4$

and this always happens when the urine is kept either in or out of the body; and in cachectic states of the system at the very time of its elimination by the kidneys ~~you~~ obtain urea by evaporating urine down to the consistence of syrup, nitric acid is then added, which combines with the urea and forms nitrate of urea, this is dissolved in water and the solution ~~saturated~~ strained from impurities and potash is then added, which takes the nitric acid, so that we have nitrate of potash and urea in solution and then on evaporation, the nitrate of potash crystallizes in six sided prisms and then the urea is crystallized in the form of white powder. Urea differs from all other organic principles, because it can be formed by direct union of its elements, which is explained by its being of no use in the system, but entirely excrementitious and perhaps it should be regarded because as an inorganic substance. It is termed by chemists the cyanate of ammonia because cyanous acid with ammonia and 1 water form the elements of 2 urea. The probable reason why N is eliminated in the form of urea instead of ammonia is to avoid the acrid mixture of the latter. It is the most highly nitrogenized principle in nature in proportion to its C and H.

either you or more in exception N present

The analysis of organic matter is of two kinds {proximate and ultimate}.

Binoxide of copper is employed because it is not decomposed by heat alone, although it readily gives up O when heated with organic matter.

If the proximate principle contains N, you interpose between the chloride of calcium and the graduated tube another vessel containing a certain weight of liquor potassae, through which the gases are made to pass and the carbonic acid gas is absorbed by the liquor potassae and the N passes on and is collected pure in the graduated tube.

1. Proximate, consists in the separation of the various proximate principles and obtaining each in a seperate form; and is done by solution, precipitation, crystallization and the other ordinary processes of chemistry.
2. Ultimate, consists in ascertaining the proportions of the simple elements of which the proximate principles are composed; and is performed as follows. You take a certain weight of the proximate principle to be examined and you heat in a small retort with a certain weight of the binoxide of copper; then the proximate principle becomes decomposed its C and H take sufficient O from the binoxide of copper to convert them entirely into carbonic acid gas and watery vapour; these two pass over together into a vessel which contains a certain weight of chloride of calcium, by which the watery vapour becomes absorbed, but the carbonic acid gas passes on by another pipe and is collected in a graduated jar filled with and inverted in mercury. When the decomposition is finished, you observe the bulk of carbonic acid gas in the graduated tube and estimate the weight of C and O which it contains; these you note down; you then the weigh the chloride of calcium, all that it has increased in weight is water and you note the weights of H and O, which this will contain, these you add to the weights of C and O in the carbonic acid gas; you now ascertain how much the binoxide

of copper has lost in weight; all this loss is O, which must be subtracted from the weight of O previously ascertained and the remaining weights C. H and O constitute the elements of the proximate principle examined. This operation is extremely delicate and the results are corrected by the atomic numbers.

4 .5 $5\frac{1}{2}$

Midwifery.

There are four bones in the adult pelvis, 2 ossa innominata sacrum and coccyx. The childs pelvis is formed of 15 bones and between the bases of the adult pelvis there are four joints; but of these the sacro coccygeal is the only moveable joint. The whole pelvis is divided into true and false. The true pelvis is divided into a brim, cavity and outlet. It is usual to take three measurements of the brim {antero posterior, transverse and oblique}. The antero posterior is the smallest and measures 4 inches, the transverse measures 5 ½ inches, the oblique measures 5 to 5 ¼ inches.

There are two sacrosciatic ligaments:

1. The great one arises from side of sacrum and coccyx passes downwards and forwards to be inserted into tuberosity of the ischium
2. The lesser one arises from side of sacrum and coccyx and is inserted into spine of the ischium.

The axis of the pelvis is an imaginary line extending across brim of the pelvis and may be explained by drawing a line from tip of coccyx to the umbilicus.

The axis of the outlet is an imaginary line through the centre of the outlet, which runs downwards and forwards and may be represented by a line drawn from second ~~lumbar~~ lower sacral vertebra to a line drawn between tuberosities of ischii. The upper edge of the symphysis is 3 inches below promontory

The os uteri is very liable to scirrhus

of sacrum and the lower edge on a level with the coccyx.

The uterus is a pear shaped body and is divided into a body fundus and cervix and os. The fundus above then the body, then the cervix and then the os. The os uteri is a transverse opening and presents two lips, of which the posterior extends into the vagina. There are a great number of follicles around the os uteri called glandulae nabothi, which secrete a viscid mucus like bird lime, which closes up the mouth of the uterus after impregnation. The uterus is entirely covered by peritoneum except the neck. It is lined internally by mucous membrane and is of a triangular figure; it has three openings the os and two fallopian tubes. The mucous membrane is smooth in the body and fundus, but in the neck is rugous. The proper coat of the uterus is termed muscular, but in the unimpregnated state is homogenous, but during pregnancy becomes developed.
From each side of the uterus, a great sheath of peritoneum comes off, called the broad ligament, which passes to each side of the pelvis and is composed of two layers of peritoneum joined by cellular tissue; each of these containing numerous important parts; viz the ovary and its ligament, round ligament, vessels and nerves by which the uterus and its appendages are supplied.

The ligament of the ovary and round ligament of the uterus taken together are the analogue of the gubernaculum testis of the male fœtus.

1. The round ligament, which is a cord of condensed cellular tissue coming off from the upper angle of the uterus and extending outwards through inguinal ring to inguinal canal to be lost in the mons veneris and labia; its use is to hold the uterus forward in pregnancy and cause it to ascend in front of the intestines, sometimes it has been found to contain muscular fibres.
2. The ovaries, which are the female testicles are oval bodies of a white colour and about one third the size of the male testicle and have a thin fibrous coat for their tunica propria, they project at the posterior part of the broad ligament and about 1/4 inch distant from the uterus, to which they are connected by a ligament of their own, which is a cord of condensed cellular tissue. On the external surface of the ovaries are seen numerous cicatrices, where the ova have at different times escaped from the ovary, on a section we find in its interior numerous minute cysts termed Graafian vesicles, which contain the ova, those towards the surface being larger than those in the centre, for it is thought that as they ripen, they come forwards from the interior of the ovary towards the surface and at last by rupture of the investing membranes they discharge their contents into the peritoneum; also corpora lutea are seen in the ovary, which are Graafian vesicles from which the ova have escaped and have become

The fimbriated extremity is larger than the extremity, which opens into the uterus. The fimbriae have an erectile property, by which when distended they grasp the ovary.

filled with yellow fibrine.

The fallopian tubes are canals 4 inches long, each coming off from the upper angle of the uterus and extending outward to upper end of the broad ligament and at last terminate by a fimbriate extremity, which hangs over the ovary and has an opening into the peritoneal cavity from the uterus.

Impregnation is considered to take place on the surface of the ovary, at the moment the ovum escapes from the Graafian vesicle, in proof of which there is extrauterine foetation, when the foetus attains a considerable degree of developement, in the fimbriae, fallopian tube or even in the cavity of the abdomen. The child however seldom lives to the full period and when it dies, the woman generally dies also, but sometimes it acts as an irritant and becomes the centre of a great abscess, which opens in the groin or elsewhere and the bones of the foetus are discharged with the pus. The ovum occupies about a fortnight in descending the Fallopian tube to the uterus, and during this time the uterus is prepared for its reception by the closure of its os by the viscid secretion of the glandulae nabothi and the cavity of the uterus also becomes lined by a false membrane termed the decidumm. When the ovum enters the cavity of the

The vessels of the chorion are filled with blood by the action of the foetal heart and their use is to obtain nourishment from the blood of the mother for the support of the child. Now the fundus uteri is the most vascular part, hence from that situation most nourishment is to be obtained and towards the fundus uteri the vessels of the chorion enlarge and constitute the placenta, while through the rest of their extent these vessels waste away and the chorion becomes a mere membrane.

uterus, it is composed of two membranes called chorion and amnion, a fluid termed liquor amnii in which the embryo floats and the embryo itself. Most externally is the chorion which is a loose, shaggy, vasular and flocculent membrane, and internally is the amnion, which is a smooth serous membrane and the embryo is suspended in the liquor amnii by its umbilical cord.

Now the child has altogether three membranes; one formed by the uterus which is the decidua and which is most external and the other two by its own vital powers; the chorion and amnion and according to some the decidua becomes reflected by the entry of the ovum into the uterus and therefore is a double membrane, the layer next the uterus called the decidua vera and the layer next the chorion called the decidua reflexa.

The placenta is a vasular cake formed chiefly by the enlargement of the vessels of the chorion and is usually towards the fundus uteri to answer two functions.

1. That the vessels of the child may obtain nutriment from the blood of the mother for the support of the fœtus.
2. That the blood of the fœtus may obtain oxygen by exposure to the oxygenated blood of the mother.

In the latter view the umbilical artery corresponds to the pulmonary artery of the adult.

The fœtal surface of the placenta is covered by the amnion. The mode of connection of the uterine surface with the uterus is a much disputed point. Now it is usual to consider that this part of the placenta is of a cellular structure, that these cells are filled with the mother's blood and that the vessels of the fœtus project into them in a tufted manner. It is of the decidua that the maternal part of the placenta is formed. The whole decidua and all is expelled at birth. Some describe large vessels passing from the walls of the uterus into the cells of the placenta. According to others they are merely openings into the uterine vessels over the seat of the placenta. At any rate, when the placenta seperates in labour, haemorrhage is quickly stopped by the contraction of the fibres of the uterus.

The walls of the uterus are muscular, but the fibres are not perceptible in the unimpregnated state. There are two principle sets of fibres; the longitudinal or external and the circular or internal. The duration of pregnancy is 40 weeks or 10 menstrual months. It is the fundus which is developed first in pregnancy and afterwards the neck becomes gradually added to the cavity till at last the neck entirely disappears and the walls of the uterus spring directly from the os. It is a growth and not a dilatation which takes place in pregnancy; the walls are but a little thinner at the termination than at the commencement of pregnancy.

Quickening is that period at which the uterus rises out of the pelvis into the cavity of the abdomen and it commonly happens about the fourth month of utero gestation often suddenly and if so the woman is liable to experience great sickness and fainting and it is called quickening, because then the movements of the child are first felt, both because then the child is much stronger and it has risen from a bony into a muscular cavity.

8

The symptoms of pregnancy are a cessation of the menses, enlargement of the breasts and a shooting pain in them, darkness of the areolae and enlargement of the follicles around the nipples, morning sickness, enlargement of the abdomen and movements of the child {the menses sometimes continue}. The morning sickness is mostly at the early months of pregnancy and occurs when the woman first assumes the erect posture in the morning; probably because then ovum falls upon the neck of the uterus, which is more irritable than the fundus and the vessels of the uterus are more turgid with blood. On examination per vaginam the uterus is found lower than natural having sunk from its weight, but after quickening it becomes higher so as scarcely to be reached and at the fifth month the neck of the uterus begins to shorten also, the uterus feels heavier {the woman being on her knees}, the os

3

3

1

3

uteri is closed and we can feel the ballotement of the fœtus or the floating of the fœtus in the liquor amnii, when you give the uterus an impulse with the finger. On examination of the abdomen with the stethoscope you hear the fœtal heart {140 to 160 beats in a minute} and the placental soufflet (bellows sound) at the same rate as the womans heart and is owing to the rush of blood through the tortuous arteries of the uterus

Division of labour.

1. Natural, where the head presents and is over within 24 hours without assistance
2. Difficult, where the head presents but is not over within 24 hours nor without assistance.
3. Praeternatural, where any other part but the head presents.
4. Complicated, with haemorrhage, placenta, turning &c.

Stages of labour.

1. Dilatation of os uteri and rupture of the membranes.
2. Passage and birth of the child.
3. Expulsion of the placenta.

On going to a woman we have first to ascertain whether she is in labour; true uterine pains are owing to contraction of

In making an examination, we ascertain that the woman is in labour during the pains, because it is then the os uteri dilates, but we must not try to make out the presentation till after the pain has gone off, lest we rupture the membranes, to do which at an early period is bad practice, because they are required as a soft wedge to dilate the os uteri and external parts.

Labour

presentation

Natural presentation

vide D. bowel

the uterus and opposition to the expulsion of its contents; they recur at regular intervals and are felt at the back extending round the hips to the pubis; but false pains are irregular, such as colicky pains ~~with~~ which will be felt in the abdomen of a twisting character around the umbilicus, and when you make an examination you ascertain that the woman is in labour by this viz, that if during the pains the os dilates, for it is the longitudinal fibres which first contract and their effect is to dilate the os; besides ascertaining that the woman is in labour you have to discover the presenting part its situation and position; by the presenting part is meant that part of the child which is over the centre of the os uteri and over the centre of the pelvis; by its situation is meant how far it has descended, whether it is in the cavity, at the brim or at the outlet of the pelvis; by position is meant, how it lies with respect to the bones of the mother's pelvis. In natural labour the vertex presents and at the brim the heads lies obliquely with occiput towards one acetabulum and forehead towards sacroiliac joint, as it passes through the pelvis it makes a half quater turn, the face passing into the hollow of the sacrum and the occiput protruding under the symphysis pubis, and thus the head is born with its long axis in long diameter of the outlet; the occiput turning round the arch of the pubis as if round a pulley

and the face sweeping the perineum; then the body of the child makes a quarter turn to bring long axis of shoulders also to long diameter of outlet; it is the spine of the ischium encroaching on the cavity of the pelvis which tends to give the child's head a turn during its passage.
The long diameter of the childs head is from the fore head to the occiput and the short diameter between parietal protuberances; and each of these is about an inch less than the long and short diameters of the brim so as to allow for the soft parts. ½ inch

Sickness occurs during the first stage of labour, while the os uteri is dilating, the involuntary expulsive efforts of the diaphragm and abdominal muscles take place; when the head has cleared the os uteri, being excited by the pressure which it makes upon the walls and nerves of the vagina, when the child's head is born you pass your finger to its neck to ascertain, if the funis umbilicalis is round it, to guard against the trachea and jugular veins being strangulated and prevent the chord being pulled upon. When the child is born you put your hand upon the abdomen of the woman to ascertain if there is another child.

The position of the child's head is ascertained by the fontanelles which are places where the bones of the head are in-

complete and the brain covered only by membrane and so called, by the pulsations of the brain being there felt.

There are two fontanelles, anterior and posterior.

The anterior has four points of bone and four sutures.
The posterior has three points of bone and three sutures.
The posterior fontanelle is felt first in labour because the occiput is towards the pubis, where the pelvis is four times shallower than it is posteriorly; the depth of the symphysis being only 1½ inches, while that of the sacrum and coccyx is 6 inches. But there are four positions, in which the vertex may present at the brim.

1. Occiput to left acetabulum
2. Occiput to right acetabulum
3. Forehead to left acetabulum
4. Forehead to right acetabulum.

The first and second positions are equally favourable, because the occiput as it descends passes under the pubis; but in the third and fourth positions it will be the face that will descend under the pubis and then the child cannot be so easily born, because the head is much deeper from the forehead to the chin than it is from the vertex to the nape of the neck; therefore if the anterior fontanelle be felt first in labour towards the pubis, we should if it has not too far descended, endeavour to turn the head with pressure of the finger till the occiput is brought forward.

3

Arrest is sometimes treated by a full dose of opium, which procures rest for a time and afterwards the uterus acts with increased energy; sometimes by diffusible stimuli to arouse the powers of the system and frequently by ergot of rye, which is especially adapted to this form of difficulty.

5 To give ergot of rye with propriety, the presentation must be natural, there must be no want of proportion between the size of the head and pelvis; the os uteri must be dilated or dilatable the soft parts relaxed and it ought not to be a first child.

3 In inpaction, if there is hot skin and bounding pulse you would bleed from the arm and then give Antimonii potassiotartras in nauseating doses and if these means do not succeed, you must proceed to apply the forceps.

3 reasons

Difficult labours are of two kinds.

1. Difficulty by arrest, where there is no want of harmony between the size of the head and pelvis and because there is insufficient uterine power to expel the child.
2. Difficulty by impaction, where either the head is too large or the pelvis too small and the head becomes locked in the cavity.

The differences between arrest and impaction are to be found, both in the state of the child's head, in the state of the soft parts of the woman and in her general system.

Arrest.	Impaction.
The bones do not overlap.	The bones of the head overlap
There is no scalp tumour.	There is a scalp tumour.
The finger can be carried round the head.	The finger cannot be carried round the head.
The head advances during the pains and retires when they go off.	The head maintains the same position.
The soft parts are cool and lubricated with their natural secretion.	The soft parts are tumid, hot, dry and painful.
The woman is languid without distress or anxiety, and disposed to sleep.	The woman is anxious, restless with headache, thirst and a bounding pulse.
Uterine pains if any are feeble.	Uterine pains are frequently strong and frequent.

some say that you should only act during the pains or in want of them you omit occasionally to imitate the pains.

2 cases for forceps
Impaction if deflexion fail
face presentation of

If the meconium comes away the inference is that the child is dead.

For applying the forceps, you prepare the woman by emptying the bladder if necessary and clearing the rectum by an enema, then bring her over the edge of the bed with a pillow between her knees and you oil and warm the forceps. The forceps are to be applied over the parietal protuberances and the guide to find them is the tip of the ear; you apply the lower one first and act with them from blade to blade, taking care to draw through the axis of the pelvis through which the head is at the time moving.
In extreme cases, you must open the head and sometimes you use the scalpel, but one of the blades of the forceps will answer the purpose.
Sometimes when the head presents, it does not do so by the vertex but by the face, but that is very rare and usually requires the forceps.

Preternatural labour; besides the head there are presentations of the breech hand or shoulder, foot or knee.
The breech is recognized by its softness, by the genital fissure and by the escape of the meconium.

The child can be borne by the breech by bringing down the feet, keeping the back of the child to the abdomen of the mother, protecting the umbilical cord from pressure, bringing down the arms, making them sweep the face of the child

You do not push up the arm that is down, because you might rupture the uterus; as the foot come down the arm is sure to return, and if a pain come on, while your hand is in the uterus, you keep it still, that you may present no sharp knuckle to the uterus, because you might rupture it, then you bring down the foot and proceed as in a breech case. If the child was not turned and the woman did not sink under the constitutional irritation that arises, after some

then putting your finger into the child's mouth to depress the chin upon the breast, that the occiput may be the last part borne; you also tell the nurse to have hot water ready for a warm bath for the child, if it should be asphyxiated (kept warm as no breath is moving / Kattn is suspended animation) then sprinkle on cold aq ro off it's mate + blow into lungs by laryngeal tube (with rectal inflation)

<u>The presentation of the foot</u> is recognized by the shortness of the toes, projection of the heel and malleoli; you seek for the other foot and proceed as in a breech case.

<u>The presentation of the hand</u> is known by the length of the fingers and mobility of the thumb, the power of pronation and supination and absence of the heel and malleoli. It is impossible for the child to be borne with the upper extremity first; therefore the operation of turning must be performed, which consists in introducing the hand into the uterus and bringing down the child by the feet. The proper period for turning is as soon as the os uteri is sufficiently dilated and before the membranes are ruptured and the liquor amnii have escaped, because then the child moves readily as if it floated in a bucket of water, and this is the reason why the presentation must be made out as early as possible; you prepare the woman by emptying the bladder if necessary and clearing the rectum by an enema, bring her over the edge of the bed and put a pillow between

days spontaneous evolution would come on, i.e. the child would be revolved in the uterus and eventually protrude feet first.

If the cord presents hold it up till the head be borne lest pressure during birth stop its circulation

Retard Placenta remove as for as hand
grasp cord in uterine uterin
dig into it with tips of fingers,
if adherent peel it off towards its centre

her knees, then take off your coat, turn up your shirt sleeves and anoint your arm to the elbow, you then introduce your hand and dilate the os uteri if necessary and rupture the membranes and proceed to find the feet; to find the feet you pass your hand along the palm of the child's hand, because in that direction the feet lie.

Haemorrhage in labour is primarily divided according to the period at which it occurs. viz.
1. Before the birth of the child.
2. After the birth of the child.
3. After delivery of the placenta.
And that, which occurs before the birth of the child is further subdivided into the accidental and unavoidable, this subdivision was first made by Dr. Kigby.

Unavoidable haemorrhage is that which arises from detachment of the placenta at or near the entrance of the uterus and is called the placenta praevia.

Accidental haemorrhage is where the placenta is naturally situated towards the fundus uteri, but from some cause or other has become too early detached from the uterus.

Diagnosis. In accidental haemorrhage the blood flows be-

In accidental haemorrhage we rupture the membranes in order that the liquor amnii being evacuated, the uterus should contract and we might expect that the woman would be soon delivered and perhaps you would administer ergot.... The most frequent period for haemorrhage to occur is after delivery of the child and before the delivery of the placenta.

view inside of Pl. Brain Brow gow Land this placenta

A H
As Excess pains

P P
As during pains
feel placenta pressed
As from 6th month

tween the pains, when the uterus is relaxed. In unavoidable haemorrhage the blood flows during the pains, because at each contraction of the uterus the os becomes dilated more and more and the placenta more and more detached. Also on examination in unavoidable haemorrhage we feel the placenta as a loose and spongy mass presenting, but in accidental we feel the membranes and waters or the presenting part of the child. Also in placenta previa the woman will have been subject to occasional gushes of blood from the sixth month, because from that period the cervix uteri begins to dilate and to form part of the body of the uterus and the placenta becomes partially detached. As soon as the os uteri is sufficiently dilated you pass your hand in between the placenta and wall of the uterus, then through the membranes a little higher up, you find the feet of the child and deliver by turning and the placenta is expelled afterwards.

Treatment. You introduce your hand into the uterus to remove the placenta, but when you have fully grasped the placenta you should not remove it immediately, but you should wait until the uterus contracts and expels your hand and the placenta together. You also make sudden application of cold on the abdomen or nates. You also make friction and pressure over the fundus uteri and grasp it to cause it to contract. You then make a compress and

Abortion is the discharge of an ovum before the period of quickening, after that period up to the seventh month is miscarriage

bind it tightly upon the fundus uteri. And after this is done you may plug the vagina but not before otherwise the blood might collect by internal haemorrhage in the cavity of the uterus, and you lay the woman with her head low. You also cool the room both because external cold produces contraction of the internal cavities and NB warm diluents &c &c in order to condense the atmosphere of the apartment, so that she may have a large amount of oxygen supplied to her. You also give diffusible stimuli, by teaspoonfuls at a time, very frequently, because too large a quantity would be rejected. Sometimes you give ergot of rye. Now in cases where the woman is already far reduced, it is better not altogether to remove the placenta, but to do so when she gets better after the vagina has been plugged &c. You perform transfusion when the woman is very far gone. You must be careful that no air enters the vein, that syringes &c. all the instruments are of a blood heat and that you do not throw in too much.

In the case of twins, each has its own membrane, but usually the placentae are in one mass, but not always and generally both children are expelled first and both placentae afterwards.

Abortion. There are two chief symptoms of threatened abortion which are pain and haemorrhage; pain indicates contraction

from that time to parturition is called premature labour.

3 A.C.A
P.M.
H.C.

4

3

of the uterus and haemorrhage detachment of the placenta. In the early months haemorrhage is most dangerous to the child, but in the latter months to the woman. In all cases of miscarriage quietude and the recumbent posture are necessary; in some cases, where there are symptoms of arterial excitement as heat of skin &c, it is proper to take blood from the arm, and where pain is the chief symptom you give opium to take off the action of the uterus; but where haemorrhage is the chief symptom, you give sulphuric acid and infusion of roses and if it proceeds to such an extent as to be dangerous to the woman we give ergot of rye to promote contraction of the uterus and evacuation of its content.

The signs of the child being dead in the uterus are cessation of its movements and of the sound of the foetal heart, a sensation of weight or coldness as of a ball in the abdomen, flaccidity of the breast, foetid vaginal discharge and if during labour desquamation of the cuticle, with looseness of the bones of the head and discharge of the meconium, although the pains do not present.

Prolapsus uteri is a sinking of the uterus into the vagina and arises usually from the woman assuming the erect posture after labour, sometimes it protrudes beyond the

os externum and is then termed procidentia uteri.

Prolapsus uteri is to be distinguished from Polypus by feeling the os uteri, also because the uterus is a sensitive tumour, while a polypus is insensible and harder and is larger below and tapers above. It must be treated by pessaries and astringent injections to keep it in its place.

Inversio

Transversus uteri occurs during labour, usually from too much traction made on the cord for the removal of the placenta, made while the uterus is in a state of relaxation and the fundus descends with the placenta through the os, and so the whole organ is turned inside out. It must be treated by returning the placenta with the fundus to its place and subsequently remove the placenta. If the placenta were removed previously to the reduction of the uterus being accomplished, there would be probably death from uterine haemorrhage, and indeed most of the patients in whom this happens die.

Retroversio uteri is a falling back of the fundus under the promontory of the sacrum and occurs in pregnancy just previous to quickening, when the uterus is already of sufficient size to occupy the space between the sacrum and symphysis pubis, but has not as yet risen into the cavity of the abdomen and is commonly brought on by the woman holding her water

Puerperal fever has been considered by Drs Lee and others to be uterine phlebitis, probably excited by the putrescent coagula left in the mouths of the uterine vessels and pus has often been found in the veins and walls of the uterus. Most probably different diseases have been described under the same name; that some cases are uterine phlebitis, while others are a peculiar fever attacking puerperal women and accompanied with abdominal inflamation.

too long. The bladder rising out of the pelvis lifts up the neck of the uterus towards symphysis pubis and at the same time throws the fundus uteri under the promontory of the sacrum, while the os uteri compresses the neck of the bladder against the symphysis pubis and the surgeon is generally sent for to relieve the retention of urine, which consequently arises accompanied by inability to go to stool, distressing sensations in the pelvis, faintness and sickness. It is to be treated by drawing off the water, for which purpose a longer catheter than usual is required and by throwing up a copious enema and the woman must be cautioned not to hold her water too long until the period of quickening has passed. If necessary manual assistance

There are three diseases of lying in women viz hysteritis; peritonitis and puerperal fever.

Puerperal fever differs from peritonitis by being an epidemic and apparently contagious disease, and therefore dependant upon a miasma, whereas peritonitis is sporadic and arises from cold or some other ordinary cause of inflamation. Also the pain is more confined to the region of the uterus and is less increased upon slight pressure at the commencement. It sets in with very violent rigors and severe headache and the pulse is excessively rapid from 140 to 160; there soon comes on great prostration of strength, tongue becomes brown and there

is delirium. It comes on about the third day after delivery; the woman is careless of the child, the milk and lochia are suppressed and there may perhaps be fœtid discharge from the vagina; it proves fatal in three days; before death the abdomen becomes tympanitic and excessively tense so as to be sometimes even as large as before delivery. On a post mortem examination; the fundus uteri is found of a greenish colour, covered with flakes of fibrine and a dark acrid fluid in the abdomen, and the mucous membrane of the uterus in a sloughy state.

Treatment: Consists in moderate bleeding at the beginning, leeches over the region of the uterus followed by poultices and fomentations, injections of warm water or decoction of poppies to remove putrid coagula and shreds of the placenta from the cavity of the uterus; also in giving a full dose of calomel to act as a purgative and smaller doses of calomel with effervescing or other antefebrile saline draughts; but in epidemic cases in which the strength rapidly gives way, much calomel is not borne, but it is necessary to give diffusible stimuli as amonia, serpentary and oil of turpentine and when the bowels become tympanitic use ammoniacal or turpentine enemata and a large blister to the abdomen.

Phlegmasia dolens is the swelled leg of lying in women and is a subacute inflamation of the iliac and femoral

veins (It was thought by Dr Lee to arise from the distension of the inflamed veins of the uterus) but ~~more~~ probably arises from cold or some other cause acting on the irritable condition, into which a puerperal woman is brought; a similar affection is sometimes seen in other persons when recovering from fever or in some other similar condition.

Symptoms. Great pain on pressure in the course of the femoral vein, which is felt as a hardened cord and the pain is increased on motion; the limb is tense white and shining with the superficial veins enlarged so that it looks like marble. There are slight febrile symptoms; it comes on rapidly but cannot be quickly removed.

Treatment. Abundant and repeated leechings in the course of the femoral vein, fomentations and poultices; mercurial purgatives and antefebrile medicines to act on the secretions, and small doses of calomel and opium at bed time, and after the acute symptoms are subdued by applying a flannel bandage to the limb, making pressure and frictions, It will be very long if ever before it is restored to its healthy natural condition. It does not prove fatal.

Matter is considered to exist in the form of most minute particles called ultimate atoms which are never so closely approximated but that intervals exist between them, whence all masses of matter even of the densest nature are of a porous structure. Tricer which is caloric
in the particles electricity in cymolite

Natural Philosophy.

General and primary properties of matter

1. Gravitation, that it has weight.
2. Extension, that it occupies space.
3. Impenetrability, no two bodies can occupy the same space at the same time.
4. Mobility, that it can be moved.
5. Inertia, that cannot move itself, nor arrest its own movement, when in motion.
6. Indestructibility, that it cannot destroy.

All matter is divided into.

1. Solids, in which the particles are so united by the attraction of cohesion, that they cannot move one upon the other.
2. Fluids, in which the particles are free to move one upon the other.

Fluids are subdivided into

1. Inelastic or liquids, which cannot be diminished in bulk by pressure.
2. Elastic or gases, which can be diminished in bulk by pressure, and when the pressure is taken off again expand.

Gases are subdivided into

1. Vapours, which by cold and pressure can be brought to the

There are only two permanent gases, H and N. for although O was lately considered one, Faraday has now reduced it to the liquid state.

Of cohesion there are two important varieties.

1. Adhesion, which exists between dissimilar particles at imperceptible distances, which is illustrated by the hanging of water to glass, and which is a great cause of friction.
2. Capillary attraction, by which liquids are raised along fine tubes or hairs contrary to their gravity.

The particles united by the attraction of cohesion are called the integrant particles of matter, because they are not only similar to each other but also to the integer or whole, which they go to form, but those united by chemical attraction are called the constituent particles.

liquid state as chlorine by a absorption at 32°

2. Permanent gases, which never yet by cold or pressure have been brought to the liquid state.

So that matter may exist in one of four conditions; solids, liquids, vapours and permanent gases.

The attractions which operate upon matter are.

1. Attraction of cohesion, which operates between similar particles at imperceptible distances. It is also called the attraction of aggregation and is the cause of the solid and liquid states. It exists with most power in solids, but also exists in liquids as is proved by the spherical form of drops, in which all the particles are drawn to one common centre and also by the hanging of a drop before it falls [illegible]

2. Chemical attraction or affinity, which operates between dissimilar particles at imperceptible distances and produces new and compound bodies different from either of their constituents

3. Attraction of gravitation operates between all bodies at perceptible distances and is always proportioned to the mass of matter. The most familiar example of it is the falling of bodies towards the centre of the earth, which is because the earth is immeasurably larger than any thing else; the effect of this attraction is inversely as the square of the distance at which it operates; other attractions are those of electricity and magnetism.

What consequences of removing atmosphere from surface of earth? All liquids would evaporate in all animal & vegetable life cease & earth would be left a dry & barren rock & no diffused day light owing to reflection & refraction of suns rays in passing thro' atmosphere sky would appear black & the sun a blazing body

Some observed in vacuum of Air Pump

The atmosphere is an elastic fluid, like gases which extends 45 miles from the surface of the earth; being an elastic fluid its particles repel each other and it is held to the surface of the earth by the attraction of aggregation. It is calculated to extend 45 miles by considering that at that height the attraction of the earth is so much diminished by distance as to be unable to control the elasticity of the air and in consequence it flies off and is gone. The air becomes rarer as we ascend, because the attraction of the earth and the superincumbent pressure are both diminished; the greatest height to which persons have ascended is probably 3 miles and above this the rarified state of the air renders it impossible for a person to breathe; the pressure of the atmosphere at the level of the sea is 15 lbs on the square inch, so that a man bears on his body a weight of 14 tons, of which he is insensible, because the pressure is equal and uniform in all directions and because the cavities and tissues of the body are filled with gases and liquids capable of bearing it; the weight of the atmosphere is measured by the barometer.

The barometer is made by taking a glass tube 30 inches long closed at one end, you then fill this with mercury previously boiled to expel any air that it might contain, then put your finger upon the open end and invert the tube, placing the open end in a cup of mercury, you then take away your

never get by any means perfect vacuum
because of perfect elasticity of gases &c
they air pump is given p 68

lb than an inch square lb. mercury
as acting on 1/2 an inch support 7 1/2 lb. mercury

known after pumps were sometimes

The true theory of a pump was first discovered by Torricelli on account of a well having been dug too deep for the pressure of the atmosphere to raise the water through the lower valve and in practice in fact the lower valve cannot be placed above 28 or 30 feet from the water in the pipe, before this

finger, when the mercury falls in the tube, until a column is left balancing the pressure of the atmosphere acting on the mercury in the cup. The upper part of the tube is the most perfect vacuum known and is called the Torricelian vacuum; but it is not a perfect vacuum, for it contains a little vapour of mercury. The mercury commonly stands 30 inches high, but it varies from 29 to 31 inches; and as a column of mercury 30 inches high and one inch square all the way up would weigh 15 lbs, we know that the ordinary pressure of the atmosphere on each square inch is to that amount. The pressure of the atmosphere will support a column of water 33 feet 9 inches high; i.e. 13½ times as high as a column of mercury.

The domestic pump is composed of a cylinder called the barrel, a pipe which descends to the well, a piston moved up and down within the barrel by means of a pump handle and two valves both opening upwards, one placed at the upper end of the pipe and the other within the barrel.

Mode of action of a common pump.

When the piston is raised the pressure of the air is taken off the water in the pipe and the surrounding atmospheric pressure causes a part of the water in the well to ascend the pipe and rise through the lower valve into the barrel, then when

it was thought to be on the principle that nature abhorred a vacuum. From this observation Torricelli discovered the pressure of the atmosphere and made the barometer.

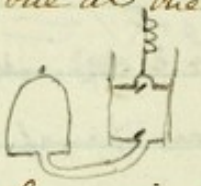
A perfect vacuum cannot be made with the air pump for two reasons.

1. Perfect expansibility of air, however little is left is enough (no bound or limit to exp.) to expand and fill the entire space.
2. Because after a short time the air in the receiver has not sufficient elasticity to open the lower valve and therefore of coarse the working of the pump is at an end.

How by air pump prove pressure of atmosphere? By a receiver with hole in top to place hand & so exhaust air the hand will be fixed 2 cant move receiver when air exhausted

the piston descends the water passes through the upper value and gets above the piston and when the piston ascends a second time, it lifts the water on its upper surface to a level with the spout out of which it flows. This is called a lifting pump. forcing pump being very diff.t

The air pump is an instrument, in which the air can be removed from the cavity of a glass called a receiver, which is placed upon a metallic plate covered with washleather; It is formed in the same manner as the common pump, there is a pipe leading from the receiver, a barrel a piston to be moved within the barrel and two values, one in the piston and one at the orifice of the pipe, both opening upwards.



Mode of action of an air pump.

When the piston is raised, the pressure of the air is taken off the air in the receiver, which by its own elasticity expands and a part passes through the upper value and makes its escape. The only difference therefore between an air and a water pump is, that in the air pump the air leaves the receiver by its own elasticity, but in the water pump, the water is raised through the lower value by the atmospheric pressure.

In all statements of specific gravity and in all experiments concerning it, there is one thing to be remembered, which is temperature, because bulk depends upon caloric. The standard temperature is 62° at which all things are supposed to be when the specific gravity is taken.

In taking the specific gravity of a gas we have also to look to the pressure of the atmosphere, because gases are elastic fluids and their bulk in part depends upon pressure; the gas also must be perfectly dry or otherwise it is likely to obtain watery vapours and gases are artificially dried by exposure to chloride of calcium. The standard pressure is 30 inches to the square inch, and if the pressure and temperature are not, the difference must be allowed for by calculation.

Take gas bottle & weight it while cont[ains] air & stop cock at one end then exhaust the air by screwing it on air pump & weigh again the loss of weight shows weight of air it contained now fill it with gas to be weighed & again weigh & subtract weight of empty flask from will give you weight of gas which is of same bulk as the air from being cont[ained] in same vessel hence compare the two & you get the sp. gravity

= Sp. gr. liquid =

2 ways 1st 1000 gr bottle cont[ains] exactly 1000 grs of pure water put it into scale & shot in opposite scale to balance the empty bottle fill it with liquid to be examined & weigh again & add 1000 gr weights Then if bottle cont[ains] eq. balance would be true but the liquid heavier or lighter than eq. the difference is ascertained by putting enough grs in light[er] scale to equal balance & the number of grs is to be added or subtracted from 1000 & is the sp. gr.

Water is 815 times as heavy as air.

difference due to more particles in same space from greater attraction of cohesion –

Specific gravity is the comparative weight of equal bulks of different substances, some bodies ~~possessing~~ possessing a greater density than others, causes them to be of a different specific gravity. There are two standards of comparison viz atmospheric air for gases and water for liquids and solids; these are chosen because they are commonest and easiest to obtain pure and the specific gravity of each is estimated at 1000.

Water	Standard	1,000.
Platinum, heaviest known substance.		21.000.
Gold		19.000.
Mercury		13.500.
Sulphuric acid		1,845.
Blood	20	1,030.
Diabetic urine	25	1,025 to 1050.
Healthy urine	20	1,020.
Albuminous urine	15	1,015. to 1004
Liquor ammoniae		,960.
Potassium, lightest metal.		,864.
Alcohol		,815.

Air	Standard	1,000.
Carbonic acid gas		1,500.
Oxygen gas		1,111.
Hydrogen gas, lightest known form of matter.		,069.

Aether boils 96 alcohol 170°

2nd by Hydrometer bulb cont. air to be floated in liq and to be examined on its upper part is graduated stem + lower is weight as ballast + serves

Sp gr by distance to which it sinks below surface as shewn by scale as (law) every floating body sinks below surface till it has displaced quantity of liquid equal in weight to itself hence lower hydrometer sinks the lighter is the liquid

N B Thermometer must be used & Hydrometer
- to find that temperature is of standard or
- to allow for difference

hence thick stopper in test as fresh is lighter than salt

different hydrometers & diff scales are prepared for diff liquids as sp gr mks saccharometers for wine vinometers

The emission of light by phosphorus in the dark is not phosphorescence but combustion.

Light is 8½ minutes coming from the sun to the earth, which is a distance of 195 000,00[illegible] miles

On the surface of the cornea and also at the crystalline lens, the light which passes through the eye is refracted whereby the rays are made to converge and are brought to a focus on the retina. the rays coming to eye diverge from the object conelike so few come to one persons eye

In young persons the cornea is excessively convex and the eye has a high refractory power [illegible] rays too soon form a focus behind [illegible] again diverge [illegible]

In old persons on the contrary the cornea is flattened and the refracting power is small, by this may be explained the shortsightedness or myopia of young persons, hence double concave glass and the longsightedness or presbyopia of the old double convex glass

The eyes of fishes are very globular to compensate for the density of the liquid in which they live, and divers are obliged to have increase refracting power

see 72-73-66

8

Light. The sources of light are the sun and fixed stars, electricity, combustion, phosphorescence, incandescence and sometimes mechanical action and animal life.

Incandescence is the emission of light from bodies intensely heated.

Phosphorescence is the emission of light without either chemical action or accumulation of calorie.

Light travels in straight lines called rays constantly diverging from every luminous or illuminated point and with inconceivable velocity viz 192 000 miles per second. When the rays of light fall upon any solid or liquid surface they are either reflected, transmitted or absorbed.

By reflection is meant that they are sent back again through the medium through which they came and the law of reflexion is that the angle of reflection is always equal to the angle of incidence. When rays are transmitted or through transparent substances they are liable to undergo a refraction.

By refraction is meant a change of direction experienced by a ray of light in passing from a dense to a rare medium

x + compare ẽ wt of solid & liquid is sp gr in comparison of equal bulks

double convex lenses in telescopes for the same purpose; old persons ~~~~ require double convex glasses to increase the converging power of their eyes, but young persons on the contrary double concave

wt — wt in aq : wt :: 1 : —

See on

Hume MS

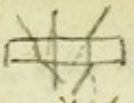
Sp gr of solids more difficult than of gs to cause of irregularity of shape + difficulty of finding weight of equal bulk of aq. 2 ways 1st fill cup to brim ẽ aq + placed in saucer then let down solid suspended by hair into aq equal bulk of aq flows over into saucer - weighthis - yet may err by more or less aq. may flow over than equal bulk or some may cling to outside of cup + so not be weighed at all hence not used now

This way in which sp gr 1st discovd by Archimedes of Syracuse

Present mode 1st weigh substance in usual manner 2nd weigh it when suspended by scale by hair into aq - subtract what it now weighs from its original weight & so ascertain weight of equal bulk of aq whose place it has taken (or take weight from scale which is too much now) now compare these wts of equal bulk to get sp gr or difference

now make rule of 3 + say same proportion of weight of substance as weight in aq which is weight of equal bulk of aq bears to weight of substance same will be number one which represents sp gr of aq bear to another number which is to be found which will represent sp gr of substance So work this sum you multiply 2nd & 3rd terms together + divide by 1st but multiplication being lyable may be omitted therefore short rule of finding sp gr of solids is to weigh it in air weigh it in water + divide original weight by the difference & you get sp gr short sp gr of any substance sp gr may be found by bringing its weight by that of equal bulk of standard + you get sp gr

end



or the reverse, provided it passes obliquely to the surface and the law of refraction is, that the ray of light is always turned towards a perpendicular line drawn in the denser medium. [illegible] hence proof appears shallower than really if looked at obliquely than if perpendicular (shilling + basin exp.)

(refracting power depends on density of medium (more & more refr) & density of rays D.

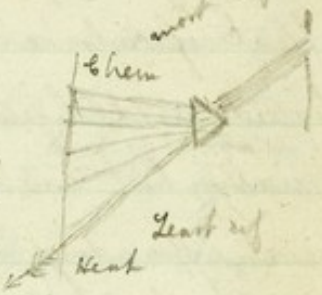
Caloric is an imponderable agent diffused through all nature and is the cause of the sensation of heat and cold, and when caloric is producing in us the sensation of heat, we suppose that it is entering into our bodies and when it goes out, it produces cold and it is thus continually moving from its tendency to equilibrium of distribution. The most universal effect of caloric is expansion and gases expand more than liquids and liquids more than solids, also all gases expand equally, but among liquids and solids there are differences, some expanding more and others less. These differences are owing to the attraction of cohesion, which is the great antagonist to the expansive power of caloric and which exists in different degrees in different solids and liquids, but is totally wanting in gases. Hence its particles roll and [illegible]

To this otherwise universal plan there is only one exception, viz in water between 32° and 40° for the 8° contract as they warm and expand as they cool, so that water is of its greatest density at 40°, for if cooled from a higher point down to 40° it contracts, but if cooled down again it begins to expand; in the act of freezing which takes place

S mis light is compound { rays of col & rays of heat & chemical rays } & diff. col.

Chemical
V violet
I indigo
B blue
G green
Y yellow
O orange
R red
Heat

Analyse S mis light = admit beam of sun thro hole in shutter into dark room place in its course a prism of glass & white paper at certain distance beyond present y col. beyond these may be discovered chemical rays by Chlorid Argent (Horned) beyond red heating rays may be discovered by thermometer. Rays are separated because they are refracted on passing thro prism: some being more refractible than others chemical violet rays most refrangible NB refracted by prism separate by property of own appearance of colours are called Prismatic Spectrum (c c rays of col)



colours, solves off called primitive colours yet really only 3 primitive colours Blue Yellow & Red others are shades or compounds Rainbow natural & phenomenon in which diff colours are seen from refraction & decomposition of light in drops of falling shower

Newtonian theory colour depends on different power which substances have of decomposing light absorbing some of its compound rays & reflecting others, every substance appearing to be of same colour as those rays which it reflects If substance reflects all rays it receives & absorbs none it appears white: if absorbs all & reflects none it appears black because blackness is absence of light see over

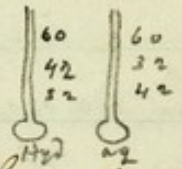
Rays of heat are invisible (light are visible)

Ice is lighter than eq. of water very much depending on temp. gr.

at 32°, water expands very much, because its particles then assume a new and crystalline arrangement and perhaps at 40° the particles are already beginning to assume their new arrangement. All matter is considered to have an atomic structure and the densest solids are pervious from possessing vacuities between their ultimate atoms. Calorie is thought to produce expansion by entering between the ultimate particles of matter and seperating them.

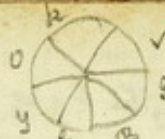
There are three modes in which calorie is communicated from one substance to another viz, conduction, radiation and convection.

2nd What is taken particles of matter? Calorie



Conduction is its communication from particle to particle in contact and is its mode of communication through solids; the best conductors are metals; (charcoal, wood, glass and all animal and vegetable coverings are bad conductors. (usually proved by tipping rods of different substances with wax and placing them in hot water, when it will melt immediately on those of metal, but not so with those of glass or wood). Animal and vegetable coverings are bad conductors, to preserve uniformity of temperature and prevent the loss of that heat, which living beings generate.

Radiation is the passage of calorie {through air or a vacuum} in straight lines called rays, diverging from every solid and



Synthesis of sun's light is done by having circular card dividing it into 7 compartments painted with primitive colours in proper proportions when if whirled rapidly round it appears white because the mingled coloured rays fall on Eye (Nature of light 2 theories 1st Corpuscular of Newton i.e. Light consists of particles & one weight projected continually in straight lines from surface of luminous bodies 2nd Undulatory Herschels & moderns waves of ether excited by luminous bodies in peculiar ether (pervading all nature)

White clothes are coolest in summer by not absorbing the heating rays of the sun, but also warmest in winter by not radiating the caloric we generate within. { Blackbottest in summer & white in winter } Abs Not Rad ker

Air & Gases bad conductors of Caloric est if dry Hence loose clothes warmest than close because of air retained tween it's folds (yet if damp not so bad as liquid present hence easier take cold) hence double windows in same way retain caloric – yet caloric does travel thro air gases by radiation

How is Caloric communicated thro Liquids? Convection!!!

Proof Hang 2 thermometers (at night) one under tree one open sky - Hint 1/3.
without tree fall most as tree radiates caloric to that near it

liquid surface; it is constantly going on even from bodies that we term cold, but the effect is only perceived, when there is a difference between the quantity given out and the quantity received (i.e. equilibrium is disturbed). Black and rough surfaces are the best radiators of caloric, which is proved by having a tin box filled with hot water and one side polished one scratched and the other black and one white. = White + polished worst =

put thermometers to each successively at equal distance when highest at black rough lowest at white + polished

When the rays of caloric fall upon any solid or liquid surface, they are like light either absorbed, reflected or transmitted.

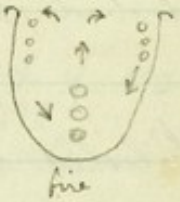
Absorption. The best absorbing surfaces are the same as those that radiate best, viz black and rough and this is proved by covering the bulbs of two thermometers, one with black and the other with white and placing them at equal distances from a heated body, when the black will rise most rapidly.
white absorb & reflect no rays of light

Reflection. Polished metals are the best reflectors as in roasting and the rays of heat are reflected by the same law as light; viz; that the angle of reflection equals the angle of incidence. The effect of radiant caloric diminishes as the square of the distance increases and the effect of light and also of the attraction of gravitation diminish in the same proportion.
as rays of light by mirrors (mirrors)

×

Convection. Gases are bad conductors of caloric unless damp;

The reason that caloric is communicated through water by convection only and that water is at its greatest density at 40°, is to preserve deep water of an uniform temperature suitable to the lives of fishes, for under a hot sun the water on the surface will expand and maintain its position and although under a cold (cool particles sinking) wind, warmer water may be caused to contract and sink (cooled), yet at 40° the current of convection will cease, for as the water cools lower, it will expand and the surface only will be reduced to the freezing point. that depth never under 40° else it would expand & float
The current of convection can be seen by putting powdered sealing wax or any other powdered insoluble substance in a flask of water, when if heat be applied below the middle particles, they will be seen ascending and the lateral descending with the currents of the liquid.



(Ice may change to other state)

liquids are also bad conductors of caloric, which is communicated through them by convection, which is an internal movement among their particles, the result of the difference of gravity, which are the effect of the expansive power of caloric; thus when a kettle of water is set upon the fire the water below being heated becomes expanded and lighter and therfore rises to the top and the water above which is more contracted and heavier sinks to the bottom. That liquids are bad conductors of caloric and that it is communicated through them only by convection is proved by attempting to heat water from the top which is impossible because the heated and expanded liquid will not descend, you can also see the currents.

Caloric exists in two states.

1. Free or sensible caloric, which can be communicated from one substance to another and therefore is perceptible to our senses or the thermometer.
2. Latent or insensible caloric, which is so combined with matter as to be incapable of communication from one substance to another and therefore is inappreciable by our senses or the thermometer.

Free caloric becomes latent in the change of state from a solid to a liquid form and from a liquid to a gaseous

Water can be frozen by its own evaporation, by taking a saucer of water and placing it under the receiver of an air pump with another saucer of strong sulphuric acid, then on working the pump and forming a vacuum the water evaporates with great rapidity and so much caloric becomes latent in the vapour that is formed, that the remaining water loses even its caloric of fluidity and is reduced to the solid state of ice. The use of the sulphuric acid is to absorb the watery vapour as it rises and preserve the vacuum perfect, that the evaporation may go on with the requisite rapidity.

as more latent caloric is necessary in becoming gaseous than in becoming fluid

hence colder in the regions
characteristic effect of caloric
and no expansion of volume without change of state.
In the change of ice into water, as much caloric becomes
latent as would raise the temperature of an equal weight
of water 140°, and this is called caloric of fluidity and
is proved by taking

Ice 1 lb at 32° } = 1 lb of water 32° (all the ice melting + water remains not ice at 32°.
Hot Water 1 lb at 172° } (2 ozs remains of same heat this 140° disappears)

As much caloric becomes latent in the change of water into
steam as would raise the temperature of an equal weight
of water 1000° and this is called caloric of vaporization; to
prove this you convert 1 lb of water into steam and pass
it into a chamber surrounded with ice when 8 or 9 lbs of ice
will be dissolved by the caloric given out, as the steam
condenses back into water. Now each pound of ice in
melting takes up 140° of caloric and 7 times 140 being 980,
is a near approach to the statement made.
The apparatus is called a calorimeter.
That caloric becomes latent during the expansion of volume
is proved by holding your hand in the steam rushing from
a high pressure boiler, (expansion rapid enough in steam from kettle)
when although the steam is very
hot, a sensation of cold is felt, because a part of free caloric
of the hand becomes latent in the steam during the rapid
expansion which it undergoes in escaping from its con-
finement, also if a thermometer be placed under the

Latent becoming free — rises

In the condensation of steam the thermometer indicates heat, because latent caloric of evaporization becomes free. as in Dyeing water must be cold to freeze

Ice applied to a person's head produces cold by the free caloric of the person's head becoming latent during the change of ice into water. Free becoming latent

A freezing mixture of nitre and sal amoniac produces cold by free caloric becoming latent during the change of those salts from the solid to the liquid state. Free becoming latent

An evaporating lotion produces cold by free caloric becoming latent during the change from the liquid to the gaseous state.

Sulphuric ether evaporating the most quickly of all liquids produces the greatest cold. may even freeze water

wood round bulb cast Q. Eq. let ether drop on wood some time when the caloric goes

If a man have one hand hot and the other cold and then put them into the same vessel of water at a moderate temperature. This will feel hot to his cold hand, and cold to his hot hand. Again if a man touch a good and a bad conductor, both hotter than his hand, the good conductor will feel the hottest; but if they be both colder than the hand, then again the good conductor will feel the coldest. Therefore we judge of temperature by the thermometer.

as ice & wood on a gate

receiver of an air pump, then as the pump is worked the thermometer will fall, because some of its free caloric will become latent during the expansion, which the air in the receiver undergoes. not measured

Latent caloric becomes free in the change of state from the gaseous to liquid, from liquid to solid and in the condensation of volume without the change of state.

The freezing of water in the winter time serves to mitigate the severity of the weather because a large amount of latent caloric becomes free. That during condensation of volume latent caloric becomes free is proved by mixing sulphuric acid and water, or alcohol and water, in both which cases it is one source of the augmented temperature which is observed but also from rapid chemical union

There is also an apparatus in which sufficient caloric is given out during the condensation of air to set combustible matter on fire. but (condensation of vol) proved here by liquid in but by vapour or steam

Our sensations of heat and cold are incorrect bad indices of temperature for two reasons.

1. Because they are entirely comparative and depend upon whether we are giving out or receiving caloric.
2. Because some substances communicate and receive caloric with different degrees of facility, i.e. diff conducting powers

Hence we judge by thermometer.

Ebullition or boiling is the rapid formation of steam and

between 212° & 32° of F

In vacuum of air pump liquids boil at 140°. Lower than under atmospheric pressure.

Water in becoming steam expands 1800 times cubic inch gets cubic foot

Pure steam is an invisible gas - dry as air.

(continued)

An Thermometer most delicate in which a bubble of air is made to travel by warmth

a legnd thro a tube

(other advantages of alcohol - it is more expansible so shows less variation. It could not go above 172° or then it boils so for lower we use alcohol as never freezing)

The lowest temperature that can be taken on a mercurial thermometer is 39° below zero at which mercury freezes

The highest temperature that can be taken on a mercurial thermometer is 656° at which mercury boils.

Therefore for temperatures above this we use the pyrometer, of which the most delicate is Daniell's platinum Bar, but the most simple is Wedgewood's or the clay one.

Mercury is the best liquid of which to make a thermometer.

1. On account of the great range between its boiling and freezing points.
2. Because it expands more equably than other liquids and in the same ratio with glass. Hence not affected by tube expanding & contracting
3. Because it has no adhesion to glass and therefore rises and falls without impediment.

the temperature at which it takes place depends upon the pressure of the atmosphere to which the liquid is subjected; for the greater that pressure is the greater is the amount of caloric required to give the vapour sufficient elasticity to rise. At the level of the sea water boils at 212° but at an ascent of 530 feet it boils at one degree less. There is an instrument called Papping's digester, in which under an enormous pressure, the water becomes so exceedingly hot as to be probably red hot.

Shews temp.re by expans.n contract.n of Mercury

The thermometer is made by taking a fine glass tube of equal bore throughout with a bulb at one end, you heat the bulb to rarify and expel the air, which it contains, then invert the open end of the tube in mercury and as the air within cools and contracts, the mercury will enter by atmospheric pressure; you then heat the bulb again in order to expel all the remaining air and raise the mercury to the top of the tube, you then close the open end hermetically and as the mercury cools and contracts it sinks towards the bulb; leaving a vacuum in the upper end of the tube.

You then immerse the bulb in a mixture of ice and water, which is always of the same temperature; viz 32°. and make a mark on the tube at the point to which the mercury sinks, which is called the freezing point. You then immerse the instrument in a tall jar of boiling water and mark on the

as steam & dry in a boiler

Because a thermometer shows that two substances are of the same temperature, it does not follow that they contain the same quantity even of free caloric, because some substances have a greater capacity for caloric than others i.e. require more caloric to raise them to the same temperature; thus water has 23 times the capacity for caloric that mercury has or in other words requires 23 times as much caloric to bring it to the same temperature and as the proportion varies in every species of matter, we have the term "specific heat" or "capacity of caloric."

Fahrenheit called it zero, because it was the greatest cold he could produce, which he effected by mixing equal weights of snow and salt at the temperature of 32° and he thought that at that point all caloric was removed from substance.

Fahrenheit is the best mode of graduating the thermometer for two reasons.

1. Because there being more degrees between the boiling and freezing points, the degrees are smaller and indicate lesser variations of temperature.
2. Because the 0 being placed 32° below the freezing point we are able to state all common temperatures with facility and without the trouble of distinguishing whether they are on an ascending or descending scale.

tube the point to which the mercury rises, which is called the boiling point, but here we must observe the pressure of the atmosphere as indicated by the barometer, in which if the mercury should not stand 30 inches high, the difference must be allowed for by calculation.

It must then be graduated, which consists in dividing the space between the boiling and freezing points into a number of equal parts called degrees.

There are three modes.

1. Fahrenheit; the intervening space is divided into 180 degrees and the freezing point is numbered 32, which makes the boiling point 212. and Fahrenheit places the 0, 32° below freezing point and called it zero. He could not get colder ice and equal to mixture of ice at 32°.
2. Reaumur; there are 80 degrees between the boiling and freezing points and the freezing point is numbered 0, which makes the boiling point 80
3. Centigrade; there are 100 degrees between the boiling and freezing points and the freezing point is numbered 0, which makes the boiling point 100.

What to attend in taking boiling & not freezing? atmos. press.

<u>Wedgewood's pyrometer</u>. You have a metallic groove, wider at the upper than at the lower end and a scale along the side, and several pieces of a particular kind of clay made to fit the upper end, you put one of these in the furnace and when you would know the temperature you take it out

9) 180 to 100
9) 9 4 5 5/9

How can you convert degrees of Fahrenheit into Reaumur or Centi
grade? As F. more minutely divided twixt 212° & 32° each degree 4/9 of a
degree of R. + 5/9 of C. hence to bring R. to F. you must multiply
by 9 & divide by 4 (40×9 = 360 ÷ 4 = 90) — if Centigrade
multiply by 9 & divide by 5 only also recollect 32° which
F. is below freezing point 2nd proceeding to bring F. & R. a
C. 1st subtract 32 then multiply by 4 or 5 & divide by 9

F. 40 − 32 = 8 × 4 = 32 ÷ 9 = 3 5/9 R

1. bring F. & R.

4/9 F. is 0 1/9 R

5/9 F. is 1 1/9 C

multiplying by num. of R. by 4 & dividing by 9 then from that we also invert 32°
reverse to bring R. to F.

Light

= for 10 days +
Construction only

—

—

animal oil

take 1

Phosphorescence
Incandescence

add 2

and drop it into the groove, and the lower it sinks the greater the temperature to which it has been exposed, because this sort of clay contracts instead of expanding by heat. But this is only an apparent and not a real exception to the general rule, and is owing to the clay losing water and undergoing a partial Nitrefaction. Of course therefore the same piece of clay cannot be again used except for higher temperatures, because it does not again expand.

The sources of caloric are

1. The sun's rays
2. Chemical action, which includes combustion and the fermentations.
3. Electricity
4. Mechanical action as friction and percussion
5. Animal and vegetable life
6. The circumstances under which latent caloric becomes free.

The effects of caloric are

1. Expansion
2. Contraction of water between 32° and 40°
3. Sensation of heat.
4. Chemical action, which includes combustion.
5. Liquefaction
6. Evaporization,

That vapour and vapour baths can be borne of an enormous temperature, is explained 1st by air and vapour not communicating their caloric so readily as water 2nd also a stratum of cooler air or vapour forms over the surface of the body and protects it from the temperature of the rest. In the case of air a copious perspiration comes on, the evaporation of which carries off latent caloric, shortly however oppressed breathing and headache comes on and they are obliged to come out.

must touch nothing cloath or woollen

The cause of the great cold of the upper regions of the atmosphere is.

1. Because the air being rarified has a great capacity for caloric when ascend in balloon and heat is abstracted to become latent in air
2. Because the air is not warmed by the sun's rays coming through it but by radiation from the earth, which at that height is of little effect.

7. Ebullition
8. Incandescence, emission of light by bodies intensely heated. Gases Liquid Solids flames melting iron & cold iron
9. Evolution of animal life. cgs

Temperatures according to Fahrenheit.

1. Blast furnace, highest known, for extracting iron from the ore. 3500
2. Solids luminous in day light, white heat. 1000.
3. Common fire 800 to 900.
4. Solids luminous in the dark, red heat, here all organic substances decompose 700 to 800.
5. Mercury boils 656.
6. Fixed oils boil 600.
7. By mixing sulphuric acid and water, 4 acid to 1 water 300.
8. Highest temperature endured by man 272.
9. Water boils under standard pressure 212.
10. Alcohol boils {serum of the blood coagulates}. 172.
11. White of egg coagulates 160.
12. Vapour baths not breathed 140 – 150.
13. Vapour baths breathed 115 – 130
14. Blood in scarlatina anginosa 106 – 110.
15. Arterial blood 100.
16. Venous blood 99.
17. Blood heat 98.
18. Ether boils 96.

Theory of a cupping glass when the lamp is used.
When the flame is introduced, the air in the glass is rarified by the heat and in a great measure expelled, then when the glass is applied and begins to cool the air within contracts and being no longer able completely to fill the glass the surrounding atmospheric pressure drives the flesh and blood up into the interior.

How fevers are by its own evaporation W L 75

Water in becoming steam at the boiling point expands 1800 times or in other words a cubic inch of water yields more than a cubic foot of steam.
Clouds are vapours of atmosphere partly condensed by coldness of upper regions

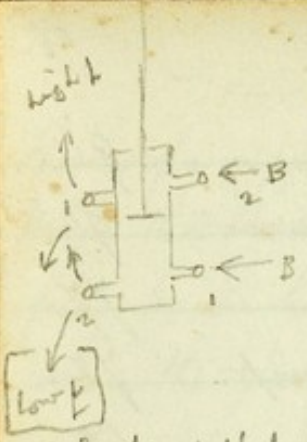
How frost is frozen dew
The earth cools during the night principally by radiation, therefore the most dew will be deposited on the best radiators of caloric and there is more dew after a clear than after a cloudy night, for when there are clouds overhead they radiate caloric back to the earth and so compensate in part for that, which is lost.

19. Warm bath, highest 104. 96.
20. Warm bath for an infant. 90.
21. Blood in Asiatic cholera and cyanosis. 77.
22. Water boils in the vacuum of an air pump. 72.
23. Standard temperature of specific gravities. 62.
24. Comfortable temperature for an apartment. 60.
25. Comfortable temperature for a patient with haemoptysis. 55.
26. Water of its greatest density. 40.
27. Water freezes 32.
28. Zero of Fahrenheit 0.
29. Mercury freezes -39.
30. Carbonic acid solid, nearly lowest known -148.
Lowest known by chemical art 187

Steam is an invisible gas and perfectly dry. The white cloud commonly called steam is partially condensed steam termed vesicular vapour, because the water exists in minute bladders. The clouds of the sky are of this nature. There is always water in the gaseous form in the atmosphere on the average 30 parts in 1000, but more in hot weather than in cold from the influence of caloric. Steam in a boiler is of the same temperature as the water yet steam contains additional heat which is latent.

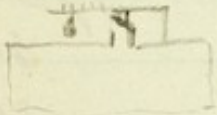
Dew is the vapour of the atmosphere condensed by the cold earth abstracting its latent caloric of vaporization, and an artificial dew can at any time be produced by bringing a cold body into a warm atmosphere.

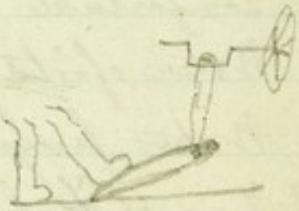
How do you demonstrate the atmosphere?



1 2 open & shut at same time

B for steam to enter other for it to come out





The condenser is kept cool by a fountain playing in its interior and is kept a vacuum by an air pump connected to it and worked by the engine itself. The force of the steam is measured by a mercurial ~~thermometer~~ guage and regulated by a safety valve, which is a valve placed on the boiler, opening outwards and loaded with a weight. It is called the safety valve because it obviates the bursting of the boiler and it should be loaded to only half the weight to which the boiler is tried.

Low pressure engines are worked at from 3 to 6 pounds on the square inch, but high pressure engines at from 30 to 40 and even to 80 or 90 pounds on the square inch.

Alo

The steam engine. The movement is produced by the elasticity of the steam admitted alternately above and below the piston moving in an air tight cylinder. The piston rod is connected to one end of a beam which vibrates upon a centre and the opposite extremity of which is connected by another rod to a fly wheel (in a similar manner to that in which the treddle is connected to the wheel of a lathe) so that by the rising and falling of the piston a continuous circular movement of the fly wheel is produced, which may be applied to any purpose whatever. The fly wheel by its great weight soon acquires a momentum which carries the engine over all difficulties.

When the steam leaves the cylinder, it either is allowed at once to evaporate into the air or it is conducted into a cold chamber called a condenser, where it is instantly reduced into water.

In the former case the engine is called high pressure because the steam must be of sufficient elasticity to move the piston into air in opposition to the atmosphere. steps are which must keep on

But condensing engines are called low pressure, because the steam need not be of such high elasticity, having no resistance from the atmosphere to overcome, but as it were to move the piston through a vacuum. steam where is acting + then it goes the piston as the steam turns into water & leaves the piston to play in the vacuum where steam was

Condensing engines are the best. how to

1. Because they are the safest
2. Because they economize fuel which they do in two ways.

In steam vessels beam is below the cylinder in locomotives no beam at all but cylinder is placed horizontally piston rod directly turns moving wheel of carriage

The sea always possesses a more uniform temperature than the land and continental countries are those in which the extremes of heat and cold are mostly found.

1. The steam not being required so elastic need not be of so high a temperature Lower by calorie resp
2. The latent calorie given out by the steame during its condensation serves to warm the water before going into the boiler.

Still high pressure engines are used.

1. Being of simpler construction they are cheaper in the beginning
2. Because sufficiency of water cannot always be obtained to condense the steam. Hence used in locomotives can't be warmed

Land and sea breezes.

In hot climates during the day the earth becomes intensely hot heated by the sun more than the sea, in consequence of this the air over the land becomes rarified and rises and the air from the sea rushes in to supply its place; this constitutes the sea breeze which blows from 9 in the morning to 5 in the evening. During the night the land being a better radiator of calorie than the sea cools most quickly and the air over the sea is now the warmest and rises and the cooler air from the land rushes out to supply its place; this constitutes the land breeze which blows from 7. P. M to 5 A. M.

Trade winds are winds which continually blow the same way on each side of the equator. The sun is vertical near the equator consequently the heat is intense, the air therefore

Liquids and solids are both better conductors than air is of sound and use is made of this point in the stethoscope. That air is necessary for the propagation of sound is proved by striking a bell in the vacuum of an air pump, when no sound is heard and even in hydrogen gas from its extreme tenuity scarcely any sound is heard.

over the equator is rarified and rises and the cooler air from the temperate zones rushes in to supply its place. If this were all, there would be a wind to the north of the equator continually blowing from the north and a wind to the south of the equator continually blowing from the south, but the earth revolving daily from west to east and the equator from its great diameter turning more rapidly than any other part, the air as it rushes in from the northern and southern regions is met by the surface of the earth, which gives the effect of a wind blowing on the north of the equator from the north east and on the south of the equator from the south east.

At the equator between the trades is a region of calmness although interspersed with violent storms, the sea is like glass and the ships for days together making but little progress.

Sound consists in vibrations of the air excited by sonorous bodies and communicated to the portio mollis. It travels at the rate of 1142 feet per second and we can thence calculate the distance of a thunder storm or a cannon shot, because the flash from the rapidity of light is seen the instant it occurs, but the report requires an appreciable time to reach the ear.

Electricity is an imponderable agent diffused through all

electron
amber

Electricity is used in medicine in two ways, viz; by sparks and shocks. To give sparks to a person we merely bring a metallic rod (or chain) from the prime conductor, but to take sparks from them, they must be insulated by being placed on a glass stool and hold a metallic chain which comes from the prime conductor, of which they then form a part. To give an electric shock we require a Leyden jar.

When a substance electrified either positively or negatively approaches another which is at present in a state of equilibrium, the latter becomes electrified in the contrary manner and this is called induction, because the contrary state is induced in the second body by the presence of the first.

Faraday calls non-conductors dielectrics, because induction of electricity takes place through them.

An electrified body is able to attract light substances by induction i.e inducing in them a contrary electrical state (as dried sealing wax &c)

3. Cor. negative bodies attract bodies to gain more electricity as they contain less electricity

nature, & calorie same but not ordinarily perceptible, because it is in a state of equilibrium. The readiest mode of disturbing its equilibrium is by friction and the substances which & bad conductors when rubbed give evidence of its presence are amber, & bad conductors that by attracting light bodies resin sealing wax, glass, silk and a cat's back. In other bodies it is not readily perceptible by attraction of small bodies because being good conductors they conduct it to earth they return quickly to a state of equilibrium. Usually the same substances as are good conductors of calorie, are also of electricity and vice versa, but charcoal is remarkable for being a bad conductor of calorie but a good one of electricity.

<u>There are two theories of electricity.</u>

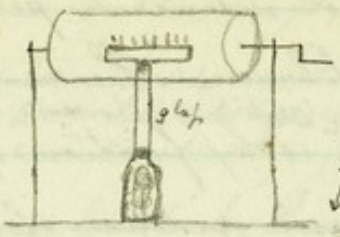
1. Dufay's; that there are two kinds, vitreous and resinous, which usually exist combined, but under excitement separate and then produce their effects. vitreous = good conductors resinous = as sealing wax

2. Franklin's, that there is only one kind of electricity, which is usually in a state of equilibrium, but under excitement becomes unequally divided, one body acquiring more and the other less than its proper share. That which has too much is said to be positive and that which has too little negative. positive = good conductors you can't get negative = sealing wax

The positive agrees with the vitreous of Dufay and the negative is the same as his resinous.

The phenomena may be explained by either theory; Franklin's being the simplest is usually adopted. hence both wrong probably & yet to be proved correct

The simplest electrical phenomena are sparks and the at-



Sparks are employed along the spine in chorea, chronic rheumatism and local paralysis. Local irritation taken from or given to

Shocks are employed chiefly through the pelvis in amenorrhea and are said to be the only true emmenagogue.

A thunder storm resembles in its phenomena the Leyden jar; the cloud being from sudden & great changes in other regions or bodies near it in an electric state, induces the contrary electric state in the part of the earth, which is nearest to it, in consequence of which an attraction begins between them and the cloud comes up even contrary to the wind, as soon as it comes sufficiently near a discharge takes place and both return to a state of equilibrium.

If over-charged a little lateral stream flows communicating

Lightning conductor

P. collects here

traction and repulsion of light bodies.
Bodies in the same electric state repel each other, those in the opposite state attract each other.

men women
resit ⊥ negatives
attract oppd

3 ℔ heat to gain equilibrium

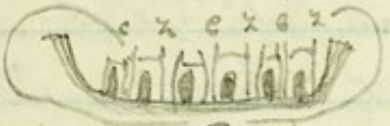
An electrical machine is made of a cylinder or plate of glass to be rapidly turned and to be rubbed while turning by a silken cushion, upon which is placed an amalgam of mercury and zinc. The electricity is collected in a cylinder of metal termed the prime conductor, supported on a glass leg so that it may be insulated and provided with points for its reception.

metal contained must be heated + called alloys as Brass ♃ ♇ – Hyd: ♃ of lobes no heat

The Leyden jar is a bottle lined inside and coated outside with tin foil to within a certain distance of the top, with a metallic rod passed through the cork, having a knob on the top and a chain which passes down into the interior; to charge this jar we cause the rod to communicate with the prime conductor, when the interior of the jar becomes positive and the exterior becomes negative at the same time by a principal of electricity called induction.

To discharge the jar, you form a communication by conductors between the interior and exterior; then the accumulated electricity of the interior passes round to the exterior and both return to a state of equilibrium. Every thing or person which forms part of the circle of communication feels effect of ♃ shock

Batteries for electric telegraph's are made as below (other Different)



a porcelain trough Divided into compartments to be filled & acid fluid in each is placed zinc & copper plates those of adjoining cells are connected by wires from extreme plates has other wires called Poles as in simple circle wire from last zinc is N to last copper Positive Power depends on number of plates not size

i.e. equilibrium disturbed

Galvanism is electricity excited by chemical action and for a simple perfect galvanic circle are required plates of two different metals, one more oxydisable than the other, a saline or acid fluid capable of acting upon one of them and wires to connect them. The metals usually taken are zinc and copper, the fluid is water acidulated with sulphuric acid and the wires may be of any metal, but generally are of copper. When this arrangement is made chemical action takes place on the zinc plate, which in consequence becomes positively electric within the fluid, while that part of it out of the fluid and its wire are negative. The copper plate is at first unaffected, but when the wires are joined, it becomes negative, because it is the source from which the electricity is derived to the zinc plate, and a current is established, which runs through the wires from copper to zinc, but through the fluid from zinc to copper, which will continue as long as the wires are joined and the chemical action lasts. That such a current takes is known by a spark when wires first joined & slight shock same time & by bubbles of hydrogen

A compound circle is called a battery and is formed of many pairs of plates, the action is the same but the power is increased by the number of the pairs of plates employed. The zinc being the most oxydisable metal is always positive within the fluid, but the wire connected with it is termed the negative pole, while the wire from the copper

In passing galvanic current avoid clothes moisten the cuticle by sponge on each end of poles holding them surrounded by glass tube

plate is called the positive pole. These terms however have must joined really in equilibrium
no real meaning and Faraday calles the wires electrodes, because they are the paths by which the electricity travels.

An imperfect circle may be formed of one metal and two fluids, other 2 metals & one fluid which are applied upon its opposite sides and act upon it chemically in different degrees. that side positive where most energetic action

Galvanism is inferior to common electricity because it has less tension i.e. has less power of making its way through non conductors, which explains why it does not yield so good a spark or shock and it is necessary to moisten the cuticle to enable it to enter the body.

Galvanism is superior to common electricity because it can be obtained in greater quantity and in a continued stream and particularly because the current is always accompanied by the decomposition of the liquids through which decomposition
it runs. 5 one decomposite 3 going to one pole 2 one the other It is by this means that chemists analyse water and many other substances and it was thus that Davy first obtained potassium and other kindred metals.

Electrolysis is the process of decomposing by galvanism and some elements of the substance decomposed pass to the positive and others to the negative pole. The former are

from acid Red

Green from alkali

In cells of the Battery where Copper & Zinc plates are electrolysis takes place as tween the poles + as the water decomposed to oxidise Zinc plate (to form Sulphate of Oxide of Zinc) Hydrogen gas will be found not to be given off there but to be separated to a distance from it & given off in bubbles on surface of copper plate

Golding Bird's Theory of Electrolysis

That it is developed by chemical decompositions that take place that chemical compounds result from a union of electric forces & when the elements of these Cs are set free they give up their respective electricities some positive some negative if true chemical affinity must depend on different electrical conditions of bodies

termed negative electrics and the latter positive electrics.

Negative electrics (i.e. elements that under electrolysis pass to the positive pole) 3

Oxygen. 4
Simple bodies ending in ine (name from the salts)
Acids (Chlorine, Iodine, Bromine, Fluorine)
as in a simple current

Positive electrics (i.e. elements that under electrolysis pass to the negative pole) 4

Potassium and other metals
Simple bodies not ending in ine
Bases for salts as alkalies &c
Hydrogen.

Kations anions

P ← O+ O+ O+
H H H → N

Theories of electrolysis.

1. Davy thought it depended simply on the power of attraction exerted by the poles, and as common electrical attraction operates between bodies in different (like) states (from induction), it was he who first named those going to the negative pole positive electrics and the reverse.

P ← O+ O+ O+ (same as / same as)
H+ → H+ → H → N

2. Faraday thinks that a series of decompositions and recompositions takes place all through the fluid (oxygen, the poles) some elements moving with and others against the electric current, and being at last given up at either pole. Whence he terms galvanism current affinity, because in its course current affinity is put in motion and the elements, which it before united are set free. He also rejects the unmeaning terms of positive and negative electrics and terms the latter kations and the former anions, because they respectively go down and up the electric current.

Sheathing of ships. Davy proposed to defend the copper of ships from corrosion by the negative electrics of sea water by attaching to it pieces of zinc. Then the zinc being more oxydisable than the copper underwent corrosion and becoming positively electric induced a negative state in the copper, which accordingly could no more be corroded. This experiment only proved too successful for the copper became incrusted with lime and magnesia, which are the positive electrics of sea water and on these weeds and animals became attached so as to impede the sailing of the ship. A compound metal is now usually employed.

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3 imponderable agents Light Heat Electricity

(on matter atoms) (in matter) (tween matter)

S. F. W.

Sulphuric Acid

Always know the process used by considering what product you are to get if volatile solid as Hydrochl Acid you sublime
if to get volatile liquid distillation as Vola Oils
if to get a fluid mixture boil as Acet Pot

The heat must not be too much raised lest part of the sulphuric acid should be driven over.

Acet Sod
Sulph Ac
Aq

An empyreumatic oil rises with the acid, which results from the decomposition of part of the resin by the heat employed and is afterwards separated by compression in blotting paper. Its ultimate elements are C. H. O. and it is said by chemists to be an oxid of a compound radicle called Benzule composed of C. H. only.
Citric acid thus obtained can be kept, whereas lemon juice from the press ~~juice~~ sauce of succulage putrifies when kept.
Citric acid gr: XIV = ℥ß of lemon juice
Citric acid gr: XIV = ℈ij of bicarbonate of potash decomposes
Citric acid gr: XVij = ℈j of carbonate of potash
Citric acid gr: XVij = ℈j of sesquicarbonate of soda
Citric acid gr: XXIV = ℈j of sesquicarbonate of amonia

Lemon Juice
Chalk

Decompositions.

Aceteum destillatum. When vinegar is distilled, water, acetic acid and a little alcohol come over and colouring matter, mucilage and sulphuric acid are left behind. The sulphuric acid must be got rid of, particularly, because it would decompose and spoil many medicines especially acetate of lead.

Acidum aceticum is made with the acetate of soda, sulphuric acid and water. Then single decomposition takes place, sulphate of soda remains in the retort and acetic acid and water distil over.

Acidum benzoicum is made by subliming benzoin, when the acid rises in vapour and benzoin remains behind

Acidum citricum.

Lemon juice { Water, Mucilage, Citric acid, Carbonic acid } Chalk. add to Lemon juice

Citric acid + Lime (Affinity stronger than)

You then wash Citrate of lime which unites with sulphuric acid + add Sulph. ac. till { Citric acid — Water (crystals by evap.) = Lime — Sulphuric acid. = }

greater affinity for oxides in Lime than Citric ac. - insoluble salt

Chloride Sodium
Sulph acid
aq

a Ferrocyan Pot.m
b Sulp ac
aq

Cyanogen C4 — N — C2 N Department of Waste Organic Radicle

This dilute acid contains only 2 per cent of real acid and its strength is proved by the quantity of nitrate of silver, which it will decompose. throwing down cyanide silver forming aq

Hydrocyanic acid is also made extemporaneously from cyanide of silver, hydrochloric acid and water, which are to be shaken together in a bottle; double decomposition takes place; the H with the cyanogen form hydrocyanic acid, which remains in solution in the water, and the chlorine and the silver form chloride of silver which precipitates, which is of the same strength as that made by destillation. By light hydrocyanic acid is decomposed, ammonia is formed, and a black powder precipitates called azulmic acid.

1 Nit N
2 S 4 ac

Two of sulphuric acid are used for two reasons.
1. To give sufficient water to the nitric acid to prevent it undergoing decomposition, for nitric acid must be combined with at least 1½ water, while strong sulphuric acid has only 1/4. 10. 5 Eq dry N.A. + 13½ aq = 4 Eq. N A 67½ Eq. atom wt.
2. To form the bisulphate of potash, because the sulphate is soluble. 40 Eq dry a + 11½ aq = 2 Eq S 4 ac 51½

Acidum hydrochloricum is made by distilling chloride of sodium with sulphuric acid and water. When the water becomes decomposed its O unites with the sodium to form soda, which with the sulphuric acid forms sulphate of soda, which remains in the retort and the H with the chlorine forms hydrochloric acid gas, which passes over and condenses into the water put into the receiver.

Acidum hydrocyanicum dilutum. Two of ferrocyanide of potassium are distilled with six of sulphuric acid and water. Each equivalent of ferrocyanide of potassium is composed of 2 cyanide of potassium and 1 cyanide of iron. Three cyanide of potassium and 3 water mutually decompose. The 3 cyanogen and 3 H form hydrocyanic acid which distils over into the water put into the receiver, while the 3 O and 3 Potassium form 3 potash, which with 6 of sulphuric acid form bisulphate of potash, which remains in the retort, together with the yellow salt of Everitt, which is composed of 1 cyanide of potassium and 2 cyanide of iron.

Acidum nitricum is made by distilling nitrate of potash with 2 strong sulphuric acid; then the 2 real sulphuric acid combine with the potash and form bisulphate of potash, which remains in the retort and the nitric acid with the water of the sulphuric acid distils over.

what is its character on Nit at Mch

hard a salt and so sparingly soluble, that it could scarcely be removed without breaking the retorts.

48 Potash	40 sul ac
54 Nit ac	11½ aq
102 = N. Pot:	51½

℔ ii Nit ac
ac ℥ix ac Nit ℥i

Don't confound it & Ø Phosphorus

Acidum phosphoricum dilutum is made by digesting phosphorus with water and nitric acid in a retort. The nitric acid becomes decomposed, nitric $\frac{II}{O}$ oxide gas flies off and part of the O unites with the phosphorus to form phosphoric acid, $PO_{2\frac{1}{2}}$ which remains in the water in the retort. The liquor that first distils over is to be returned into the retort, because part of the nitric acid is liable to distil over without having acted upon the phosphorus. The remaining liquor is then evaporated down to get rid of any superfluous nitrous or nitric acid and is done in a platinum capsule, because the nitric acid would act upon any other metal and the heat is too great for glass; and sufficient water is afterwards added to make it of a proper strength, which is 10 ½ per cent of real acid.

Acidum tartaricum. You boil bitartrate of potash with a ½ part of the chalk, when carbonic acid gas flies off and the tartaric acid in excess combines with the lime forming tartrate of lime, which precipitates and tartrate of potash remains in solution. To this you then add chloride of calcium, which you have previously made by dissolving the second half of the chalk in hydrochloric acid, then the chlorine unites with the potassium to form chloride of potassium, which remains in solution and the O of the potash unites with the calcium to form lime, which with

alcohol being Hydrated oxide Ethule

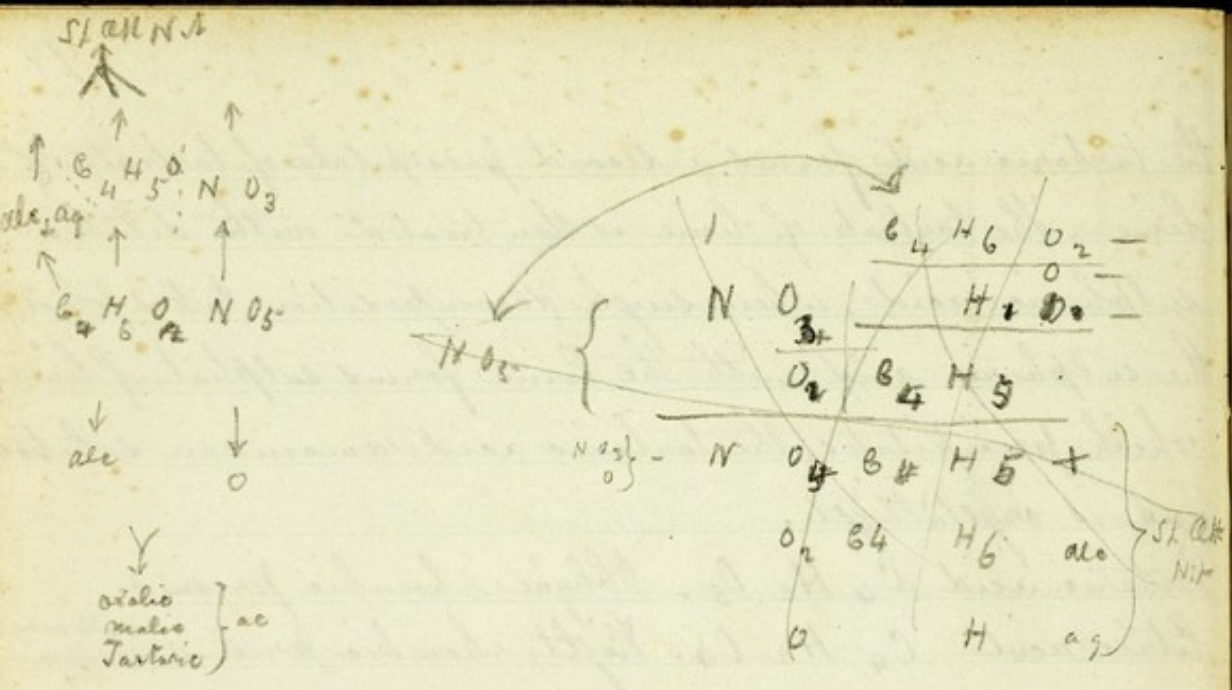
$C_4H_6O_2$ H O C_4H_5

O

the tartaric acid forms a second precipitate of tartrate of lime. The tartrate of lime is then treated with dilute sulphuric acid, when single decomposition takes place, the sulphuric acid with the lime forms sulphate of lime, which precipitates; the tartaric acid remains in solution and is crystallized.

Tartaric acid $C_4 H_2 O_5$. Oblique rhombic prisms.
Citric acid $C_4 H_2 O_4$. Right rhombic prisms. {oxalic and nitric for effervescence}

Sulphuric aether is made by distilling rectified spirit with sulphuric acid. Then, when the ingredients are first mixed and before heat is applied, 2 sulphuric acid unite with the alcohol of the rectified spirit to form a temporary compound called 2 sulphate + 1 ole sulphovinic acid as is known by the sulphuric acid losing much of its saturating power, but when heat is applied this sulphovinic acid becomes again decomposed. The sulphuric acid returns to its original state and takes the water of the alcohol, which it retains in the retort, while the oxide of ethule distils over and takes the name of ether. The ether is then rectified by a second destillation with carbonate of potash, which combines with and removes water, also any sulphurous acid that may have come over with the ether from partial decompotition of sulphuric acid.
Ether boils at 96°.



It loses its odour by keeping, because the ~~carbonate of~~ ammonia continually flies off, leaving a bicarbonate behind which is inodorous.

Hydrochlorate ammonia = burn animal matter or coal gas in closed vessels (& ferment accessory) & ~~sulph~~ ammonia by some ~~sulph~~ plants

Add sulphuric acid to common salt (which is formed by expelling both HCl, hydrosulphuric acid gas) & sodium chlorid = aq decomposes = oxygen to form soda which & sulph acid forms sulphate soda in the retort = H & chlorine form hydrochloric acid which forms hydrochlorate ammonia which has not

Chlorid sodium 5th radical for chlorine

Spiritus aetheris nitrici is made by distilling rectified spirit with nitric acid. Then the nitric acid becomes decomposed as well as a part of the alcohol. Hyponitrite of the oxide of ethule distils over together with some undecomposed alcohol and water and these three together form spiritus aetheris nitrici; while the O of the decomposed nitric acid and the elements of another portion of alcohol $C_4H_6O_2$ form oxalic, malic and tartaric acid, which remain in the retort.

Spiritus aetheris sulphurici compositus is better in medicine than sulphuric ether or ethereal oil would themselves be, because containing rectified spirit which makes them more miscible with water and is called Hofmann's anodyne and is the best of antispasmodics.

Ammoniae sesquicarbonas is made by subliming hydrochlorate of ammonia with chalk, then the H of the hydrochloric acid unites with the O of the lime and forms water and the chlorine with the calcium forms chloride of calcium and the carbonic acid with the ammonia forms carbonate of ammonia, which sublimes in the capitol. That a sesquicarbonate is formed instead of a carbonate is explained by supposing that 1 ammonia out of every 3 is lost during the process so that 3 carbonic remain divided between 2 ammonia.

You slake lime when you want it to be prevented from becoming carbonate by uniting with the carbonic acid of the air.

The solution is always slightly acid when first made because of minute bubbles of carbonic acid gas diffused through the liquor.

Acetate of ammonia is a neutral salt.

Liquor ammoniae is made by distilling hydrochlorate of ammonia with fresh slacked lime and water, then the H of the hydrochloric acid unites with the O of the lime forming water and the chlorine unites with the calcium to form chloride of, calcium and ammonia and water distil over together forming liquor ammoniae. Uncombined ammonia is a gas, therefore liquor ammoniae is a solution of ammoniacal gas in water. The sp. gr of Ammonia is 960, therefore it is lighter than water and the stronger it is the lighter it is, for the addition of this gas to water renders it lighter by entering between its particles and making it occupy more space.

Liquor ammoniae acetatis or spiritus mendereri is made by adding sesquicarbonate of ammonia to distilled vinegar until it is saturated.

You know that it is saturated by the effervescence ceasing and by testing with litmus and turmeric. taste

Morphiae hydrochloras is made by first making a strong hot watery solution of opium, which will contain the meconate of morphia and the stimulating principles are precipitated by the addition of cold water to the hot solution; you then add chloride of, lead, when the water becomes decomposed

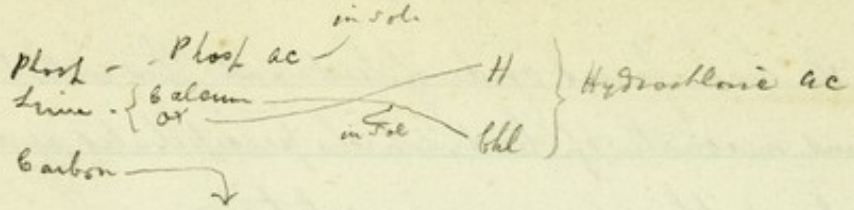
Opium subject to Adulteration

Hydrated are more easily discovered
as powders are detected

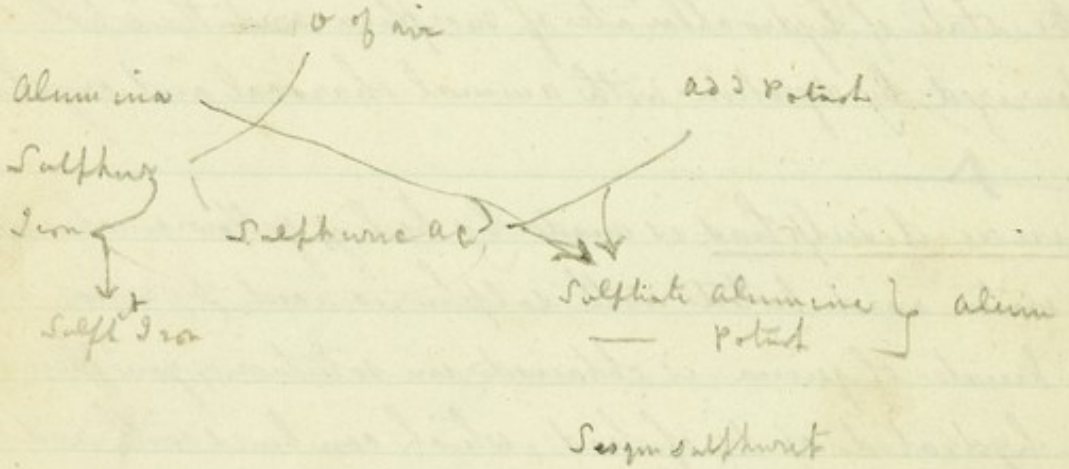
its O with the lead forms opide of lead and this with the meconic acid forms meconate of lead, which precipitates and the hydrochlorate of morphia remains in solution.
On evaporation a part of this hydrochlorate crystallizes, but a part still remains in solution, because there is a quantity of vegetable matter present and to obtain this portion you drop in liquor ammoniae, which combines with the hydrochloric acid and hydrochlorate of ammonia remains in solution and morphia precipitates. This is then to be saturated with hydrochloric acid to bring it back to the state of hydrochlorate of morphia and the whole is decolourized by digestion with animal charcoal and crystallized.

Quinae disulphas is made by boiling yellow cinchona bark in water acidulated with sulphuric acid by which means the kinate of quina is obtained in solution; you then add the hydrated opide of lead, which combines with and precipitates the sulphuric acid, while the kinate of quina remains in solution. You then drop in liquor ammoniae, which combines with the kinic acid and kinate of ammonia remains in solution and quina is precipitated. This is then to be saturated with sulphuric acid to convert it into a disulphate and is decolourized by digesting it with animal charcoal and crystallized.
Quinae disulphas gr j = Pulvis cinchonae ℈j.

x 2 of last



Aluminium is a metal
Alumina is an earth the oxide of aluminium
Alumen is a double salt of alumina and potash.



Carbo animalis purificatus is made by burning bones without free access of air and is of course mixed with a large proportion of phosphate of lime and to remove this salt it is here acted upon by hydrochloric acid and water.

See Chemistry p. 75 Digest 2 days Pour off fluid Wash the charcoal off to rid of the acid

Alumen exsiccatum, here the alum by heat first melts in its own water of crystallization, then by increased heat all the water is expelled and an opaque powder remains. Alum is a double salt composed of 3 sulphate of alumina and 1 sulphate of potash. It is made in Yorkshire by roasting a kind of slate called alum ore, which contains alumina and sulphur, and potash is afterwards added. It crystallizes in octohedrons and contains 25 water of crystallization {about 50 per cent}. It is used as a styptic externally when dried.

Antimonii oxysulphuretum is a red powder put into Plummer's pill.

When the sesquisulphuret of antimony is boiled in liquor potassæ a part of each is decomposed; the sulphur with the potassium forms sulphuret of potassium and the O with the antimony forms sesquioxide of antimony, which as well as the sesquisulphuret, which is undecomposed is held in solution by the free potash. So that when the boiling is over we have together in solution the sulphuret of potassium, free potash

Scoquis alphwitandiele fo Antiss.

sesquioxide of antimony and the sesquisulphuret of antimony that was never decomposed. You then drop in sulphuric acid and water, when the sulphuret of potassium and a part of the water mutually decompose. The sulphur with the H forms sulphuretted H, which escapes, the O with the potassium forms potash, which with the sulphuric acid forms sulphate of potash and the sulphuric acid also combines with the free potash and the sesquioxide and sesquisulphuret of antimony having no longer any thing to hold them in solution precipitate together and form the oxysulphuret.

Antimonii potassiotartras is made by deflagrating the sesquisulphuret of antimony with nitrate of potash and hydrochloric acid upon an iron plate, when the nitric acid becomes decomposed, nitric oxide gas is given off, part of the O with the antimony forms the sesquioxide of antimony and part of the O with the sulphur forms sulphuric acid, which with the potash forms sulphate of potash and on account of the nitric acid decomposed there would be free potash left were it not for the hydrochloric acid, the H of which removes the O in the form of watery vapour and the chlorine and potassium form chloride of potassium, so that when deflagration has ceased, there remains in the iron plate, sulphate of potash, chloride of potassium, sesquioxide of antimony and a little sesquisulphuret, which was not decomposed.

Scognosolphuratradiche fo Antim.

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This powder is made to resemble James's powder, but is said to be inferior, because the antimony is more highly oxydized.

Pulv ant { antimonious ac SbO_3
Phos Lime

It is only useful to make hydrocyanic acid extemporaneously.

These are then to be powdered and washed to remove the two soluble ingredients, the sulphate of potash and chloride of potassium. You then boil the sesquioxide and sesquisulphuret in water with bitartrate of potash, the tartaric acid in excess combines with the 2 sesquioxide of antimony forming ditartrate of antimony, which passes into solution with the tartrate of potash, the sesquisulphuret of antimony is still insoluble and is got rid of by straining and when you crystallize, the crystals consist of ditartrate of antimony, tartrate of potash and water.

Pulvis antimonii compositus is made by roasting horn shavings and sesquisulphuret of antimony in a red hot and open crucible. The animal matter is decomposed and expelled in the form of water, ammonia and carbonic acid gas, the sulphur is also expelled in the form of sulphurous acid gas, the antimony with Or of the air becomes antimonious acid (sesquioxide in Jacques') which remains behind in mixture with the phosphate of (K) lime.

Argenti cyanidum, the same as that by which the strength of hydrocyanic acid is proved

Acid: Hydrocyanic: Dil: gr 100 { A. — nitric acid — O — silver — Cl. } solution of nitrate of silver gr 12.7.

gr x.

For perfect decomposition there are required 4 nitric acid and 3 silver. Then 1 nitric acid becomes decomposed, 2O fly off in nitric oxide gas and the remaining 3 combine with the 3 silver to form 3 oxide of silver, which with the 3 nitric acid undecomposed forms 3 nitrate of silver.

The sources of the heat are first the water changing from a liquid to a solid state and secondly the rapid chemical union of the water with the lime.

Argenti nitras is made by digesting silver with nitric acid in a sand bath, then part of the nitric acid becomes decomposed nitric oxide gas flies off and with the O of the air forms red fumes of nitrous acid and part of the O with the silver forms oxide of silver, which with the nitric acid undecomposed forms nitrate of silver.

Liquor potassae arsenitis is made by boiling arsenious acid with carbonate of potash in water, when simple decomposition takes place, arsenite of potash is formed and remains in solution and carbonic acid gas is given off.

Bismuthi trisnitras is a whitish powder composed of 3 bismuth and 1 nitric acid; used as a sedative in pyrosis and gastrodynia. A solution of nitrate of bismuth is first made and then a large quantity of water is added, when the nitric acid becomes unequally divided and a ternitrate remains in solution and a trisnitrate is precipitated.

Calx is quick lime made by roasting chalk, when carbonic acid gas and watery vapour are driven off and lime remains. When lime is slacked with water, the lime falls to powder great heat is evolved and the water combines with the lime and hydrate of lime is formed.
Lime water is kept with lime at the bottom of the bottle

The lime is not decomposed by the chlorine, but is simply combined with it and held by a feeble affinity, so that it is easily exhaled again through the gaseous state.

to keep the solution saturated to obviate the effects of the carbonic acid of the air in precipitating the lime already in solution, because lime is so sparingly soluble in water. Cold water dissolves more lime than hot. You can tell that a bottle contains lime water by warming it when part of the lime is precipitated as it is not so in hot ag

Calcii chloridum is made thus in Ph: L:

Carbonate of lime { Carbonic acid ↑ / Lime { O.——H / Calcium——Chlorine } } Hydrochloric acid

In solution it is a most deliquescent salt. Use is to dry gases

Calx chlorinata is made by passing chlorine gas over slacked lime till it is saturated.

Creta preparata is made by first levigating the chalk and obtaining it in a fine powder by elutriation, the larger particles subsiding, while the finer particles remain suspended in the water.

Ferri sulphas is made by dissolving iron filings in sulphuric acid and water, when the water is decomposed its O with the iron forms oxide of iron, which with the sulphuric

It was formerly called subcarbonate of iron of a reddish brown colour. Source of the strong salts of iron

acid forms sulphate of iron and its H is given off in the gaseous state, afterwards the sulphate of iron is obtained in a solid form by crystallization; it is of a light green colour, but when kept in the air it becomes of a reddish brown colour, because it attracts O from the air and becomes a sulphate of the sesquioxide and it is also very deliquescent.

Ferri sesquioxidum is made by making solutions of the sulphate of iron and carbonate of soda, then double decomposition ensues sulphate of soda remains in solution and the carbonic acid with the oxide of iron forms carbonate of iron, which precipitates; then during the washing and drying the oxide of iron combines with an additional ½ O of the air and becomes a sesquioxide, while the carbonic acid is lost.

Tinctura ferri sesquichloridi is made by dissolving sesquioxide of iron in hydrochloric acid and spirit, then the 1½ O combine with the 1½ H to form water and the 1½ chlorine unites with the 1 iron to form the sesquichloride of iron, which remains in solution.

Ferri potassio tartras is made by first dissolving the sesquioxide of iron in hydrochloric acid to obtain a solu-

& Acidulated requisite to combine Tart &c

Lime water ℥j commonly decomposes calomel gr iv.

tion of the sesquichloride of iron, then adding liquor potassae when the 1½ chlorine combine with the 1½ potassium and form chloride of potassium, which remains in solution and the 1½ O from the potash unites with the iron to form sesquioxide of iron, which is precipitated in combination with water; this is then to be boiled with the bitartrate of potash, when the tartaric acid in excess combines with the iron forming tartrate of iron, while the other equivalent of iron, remains united with the potash, so that we obtain a double tartrate of potash and of iron a greenish preparation said to be tonic and diuretic.

Hydrargyrum cum creta is made by mechanically dividing the mercury, for during the rubbing the mercury becomes finely divided by the action of the chalk and also a great part of the mercury combines with the O of the air and forms oxide of mercury.

Hydrargyri oxidum. When calomel is mixed with lime water, double decomposition takes place, the chlorine with the calcium forms chloride of calcium, which remains in solution and the O with the mercury forms oxide of mercury, which is precipitated and is of a greyish black colour.

Chloride Sodium great nitrate for Chlorine

Hydrargyri binoxidum. When bichloride of mercury is added to liquor potassae double decomposition ensues; 2 chlorine unite with 2 potassium forming 2 chloride of potassium, which remains in solution and 2 O from the potash unite with the mercury to form binoxide of mercury which precipitates and is of a yellow reddish colour.

Hydrargyri nitrico oxydum is an orange red powder commonly called red precipitate. It is a binoxide of mercury made by decomposing the nitrate of mercury by heat.

Hydrargyri bichloridum is made by boiling mercury with 4 sulphuric acid; then 2 sulphuric acid are decomposed and 2 sulphurous acid fly off and 2 O with the mercury form binoxide of mercury, which with the 2 sulphuric acid undecomposed forms bisulphate of mercury, which remains behind as a white salt. This is then to be sublimed with 2 chloride of sodium, when the 2 O with the 2 sodium form soda, which with the 2 sulphuric forms 2 sulphate of soda. which remains in the cucurbit and the 2 chlorine with the mercury forms bichloride of mercury, which sublimes.

Hydrargyri chloridum. You obtain the bipersulphate in the same manner as in making the bichloride; you then rub this with a fresh portion of mercury, which

This is explained by the superior affinity of sulphuric acid for soda, which causes those principles to combine and then the carbonic acid must unite with the magnesia

deprives it of one half of its O and one half of its sulphuric acid, so that the whole of the mercury is reduced to the condition of a sulphate, this is then sublimed with chloride of sodium, when the O from the mercury unites & with the sodium to form soda, which with the sulphuric acid forms sulphate of soda, which remains in the cucurbit and the chlorine with the mercury forms calomel which sublimes. It is then to be powdered and most carefully washed to remove any bichloride that may be mixed with it. For if the hyper-sulphate was not properly reduced to the state of sulphate, then on sublimation with the chloride of sodium, the bichloride must be formed.

Magnesia is made by calcining the carbonate of magnesia in a crucible, when the pure alkaline earth remains.

Magnesiae carbonas is made by mixing solutions of sulphate of magnesia and carbonate of soda. Double decomposition ensues, sulphate of soda remains in solution and carbonate of magnesia precipitates.

Plumbi acetas. A simple instance of composition; the acetic acid uniting with the oxide of lead.

Liquor plumbi diacetatis is made by adding an additional

The potash exists in the wood in combination with various vegetable acids, so that the use of the incineration is not merely to expel vegetable matter but to bring the potash to an uniform state of carbonate. Then when the ashes are lixiviated, the carbonate of potash becomes dissolved in the water and in that way seperated from the earthy salts.

Plants-land – Pot Carb{ – Pot Bicarb – Pot Hydrate – Pot

If the bicarbonate is heated to redness Icarbonic acid is driven off and the potassae carbonas remains.

The latter not because lime has greater affinities for Carb Ac than P. Ct contrary to Chrt 12 because the lime has less affinity for carbonic acid than potash has, but is able to remove it, because carbonate of lime is an insoluble substance, which as soon as formed seperates itself from its solution.

equivalent of the oxide of lead to the acetate of lead.

Potassae carbonas impura or pearlash is obtained by incineration of wood and any land plant and lixiviation of their ashes. During the incineration the vegetable matter and wood fibre is decomposed and expelled in the form of watery vapour and carbonic acid gas and a part of the carbonic acid unites with the potash which is present, forming carbonate of potash in mixture with earthy salts. It is chiefly made in Canada, because there is plenty of wood there, but the plant which is said to yield the largest quantity is the artemesia absinthium or wormwood. The preparation in the Ph: L: is merely to obtain it in a greater state of purity. It is obtained in a confused granular mass, not in regular crystals on account of its extremely deliquescent nature. {but it does crystallize} {like all ferns in order}

Potassae bicarbonas is made by passing a stream of carbonic acid gas through a solution of the carbonate. It is in crystals of a considerable size permanent in the air. {in rectangular four sided crystals}

Liquor potassae ~~effervescens~~ is made by adding fresh slacked lime to a solution of carbonate of potash, then the lime combines with the carbonic acid, carbonate of lime precipitates and liquor potassae remains.

This is the nearest approach that can be made to pure pot-
ash as it is impossible to have it without one of water.

Potash Hydrate is skin for ½ hour: it kills skin – decomposes it O. H from
Ag O. C. forms Carbonic Acid N H from ammonia K O ½ C O from Carb Potash
not acted on this might be
sent undecomposed leaving Carbon, no strength

Potassae hydras is made by evaporating down liquor potassae. All the water becomes expelled except 1 equivalent, which remains united to the potash forming hydrate of potash, commonly called potassa fusa. This is kept in sticks and wrapped in paper to defend it from the watery vapour and carbonic acid gas of the atmosphere for which it has a great affinity.

Potassium is obtained from potassae hydras and was first procured by Davy by the action of a powerful galvanic battery, but it is now procured by causing melted hydrate of potash to flow over iron filings heated to whiteness in a gun barrel, then the potash and the water both become decomposed and potassium and H distil over. It is a soft metal of a whitish colour and the lightest of all metals sp. gr. 864, and must always be kept in naptha, which is pure carburet of H containing no O, when thrown on water it floats and the water becomes decomposed with great rapidity ½ part with the O of the water forms potash, which remains dissolved ½ part with the H forms potassiuretted H which passing into the air takes fire spontaneously. The H with the O of the air forming watery vapour and the potassium forming potash.

K + O = KO

KO + HO = KO, HO

Acetate Potash Pot Carb

Ace ac

use warm aq

Philips says that the iodine and the iron unite directly with each other consequently the greenish solution contains the iodide of iron instead of the hydriodate of the oxide and this is more in accordance with the general rules of chemistry. It crystallizes in cubes. with to obtain a Pot[ash] free known by – alkaline reaction & diligent heat & alcohol

Sol Iod Iron { Iron — Pot or Carb Potash
Iron — Carb ac

Potassae sulphas. The salt remaining after the destillation of nitric acid is a bisulphate of potash and the excess of sulphuric acid is here driven off by heat. It crystallizes in dodecahedrons and is an anhydrous and the hardest salt in the Ph: L: called also sal polychrest.

Potassae bisulphas. Here more sulphuric acid is added, because in dissolving for the purpose of fresh crystallization the water used would otherwise deprive the salt of part of its sulphuric acid. Also some say because the salt which remains after distilling nitric acid is not a perfect bisulphate but in part a sesquisalphate.

Potassae tartras differs most particularly from the bitartrate by being very soluble in water and is therefore called the soluble salts of tartar.

Potassii iodidum. You first heat iodine and iron together in water, when part of the water becomes decomposed, its O unites with the iron forming oxide of iron and its H unites with the iodine forming hydriodic acid and this with the oxide of iron forms hydriodate of iron which remains in solution and the water becomes of a greenish colour. You now add the carbonate of potash when the carbonic acid unites with the oxide of iron

Iodide of potassium is commonly called hydriodate of potash, on the idea, that the salt contains the elements of water, the H of which would form hydriodic acid and the O with the potassium would form potash.

forming carbonate of iron, which precipitates, the H unites with the O of the potash to form water and the Iodine with the potassium from Pot^{sh} forms iodide of potassium, which remains in solution

Liquor potassii iodidi compositus is a watery solution of iodine, for iodine is not by itself soluble in water, but is rendered so by the addition of iodide of potassium It is called Lugol's solution of iodine

Potassii sulphuretum is made by heating sulphur and carbonate of potash together in a covered crucible. Then 4 of each are consumed and all the carbonic acid gas is expelled; 3 potash become decomposed and 3 potassium with 3 sulphur form sulphuret of potassium and the 3 O with 1 sulphur form sulphuric acid, which with the potash undecomposed forms sulphate of potash; so that when the process is complete there remain 3 sulphuret of potassium and 1 sulphate of potash, which together form potassii sulphuretum, sometimes called liver of sulphur. It is used for making sulphuretted H baths or artificial Harrowgate water and when put into water the sulphate of potash remains unchanged, but the sulphuret of potassium and a part of the water undergo mutual decomposition. the H with the sulphur forms sulphuretted H. and the O with the potassium forms potash.

Most carbonate of soda is not now made from seaweed but by chemical process from chloride of sodium.

Iodine is got from mother liquor of the lixiviation

The sesquicarbonate of soda and bicarbonate of potash are what are commonly termed the carbonates. The present carbonates formerly called subcarbonates are too caustic and acrid for internal use.

Sodium ols diffs from Pot.m lighter & gr of Pot.m

Sod. Like Potassa in all its stages for Sodium &c

Sodae carbonas is called kelp or barilla and is made by incineration of, seaweeds and lixiviation of their ashes. It is made chiefly in the northern parts of Scotland and on the coast of Spain. It is here obtained pure and is crystallized in oblique rhombic prisms like Sarlaq.e as usually of a very large size containing 10 water of crystallization or 62 per cent, which is more by weight than any other salt in the Ph: L: but it is highly efflorescent.

Sodae carbonas exsiccata. Here the water of crystallization is driven off and it is better on that account for pills, because of lesser bulk and because if pills were made of the crystallized salt they would fall to powder during the efflorescence.

Sodae sesquicarbonas is made by transmitting carbonic acid gas through a solution of the carbonate to saturation, so that it corresponds to the bicarbonate of potash.

Potassae Carbonas.	Sodae Carbonas.
Formerly the subcarbonate	Formerly the subcarbonate.
Used in decoctum aloes.	Used by washerwomen to soften curd for medicine
A confused granular mass.	In large crystals.
Deliquescent.	Efflorescent.
	Has crystals of oblique rhombic prisms.

In the old Ph: L: the salts were named according to their properties and not according to their atomic composition and it may be doubted, whether it was not a better plan.

Carbonates of potash

Potassae bicarbonas used in medicine, formerly the carbonate in crystals permanent in the air

Carbonates of soda.

Sodae sesquicarbonas used in medicine by gouty persons in beer. A confused spongy mass formerly and still commonly called the carbonate.

Sodae sulphas is the salt that remains after the destillation of hydrochloric acid with an excess of sulphuric acid neutralized by fresh carbonate of soda.

Sodae potassio tartras is made by adding a hot solution of carbonate of soda to bitartrate of potash. Then the carbonic acid is given off and the tartaric acid in excess combines with the soda, so that when we crystallize, we obtain a double tartrate of soda and of potash. This was formerly called soda tartarizata, and there are three salts now called potassiotartras and formerly called tartarised; viz soda, antimony and iron and they are all made upon the same principle viz by adding a new base to the excess of tartaric acid in the bitartrate of potash. This salt is called Rochelle salt and is put into sedlitz powders.

Liquor sodae chlorinatae is made by passing chlorine

The chlorine gas is first passed through water in order to free it from any hydrochloric acid gas, by which it may be accompanied, and which will be formed, if water should be decomposed to oxidize the sodium instead of the binoxide of manganese

gas through a solution of carbonate of soda, until it is saturated. The carbonate of soda is not decomposed, when the chlorine gas comes in; the chlorine is simply imbibed and held by a feeble affinity and therefore being readily given off, this solution is used for gargles, lotions and other purposes in which free chlorine is desired.

Zinci oxydum. You add a solution of sulphate of zinc to one of carbonate of ammonia, then double decomposition ensues, sulphate of ammonia remains in solution and the carbonate of the oxide of zinc precipitates and the carbonate of zinc is afterwards roasted in a crucible and carbonic acid gas being given off and the oxide remains in a white powder. It is only used for lotions and ointments, sometimes but very rarely internally.

Zinci sulphas.

Zinc — O — H — Water.

Sulphuric acid.

The posterior umbilical artery differs from the anterior, because it is pervious from where it gives off the superior vesical artery

Anatomy.

The bladder; when the bladder is contracted, it lies in the pelvis behind and below the symphysis pubis, and when distended it lies in the hypogastric region; it is of a conical figure the large end being below; its base on the rectum and neck in contact with the prostrate gland; its posterior and superior half, is covered by peritoneum; something like the hairy scalp of a man. It has five false ligaments formed by peritoneum.

1. One superior or anterior.
2. Two lateral.
3. Two posterior.

The superior ligament extends from apex to abdominal muscles and it contains 3 cords, the urachus and two umbilical arteries. The two lateral are reflected from each side of the pelvis to each side of the bladder, in each of these lies the vas deferens. The two posterior one from each side of the rectum to each side of the bladder, in which the ureters and umbilical arteries are contained. The rest of the bladder is covered by cellular tissue very loosely above more densely below. There are four true ligaments made by the pelvic fascia; two anterior from the symphysis pubis to upper part of the neck of the bladder and prostrate gland and two lateral, one from each side of the pelvis to the base of the bladder. Their

It is considered a voluntary muscle supplied by spinal nerves

use is to fix the neck and base in their places, but the peritoneal or false ones to allow of the rise and fall of the bladder. The bladder has three coats.

1. The muscular coat has two separate and distinct layers, one longitudinal and one spiral, which sometimes receive the name of detrusor urinae.
2. The mucous is in rugae, which unfold as the bladder distends, of a pale colour and smooth in the trigone vesicale, which is situated at anterior part of the base of the bladder immediately behind the urethra.
3. The peritoneal

The uvula vesicae is a projection of mucous membrane and is here smooth, because it is stretched on a layer of elastic tissue, only a few longitudinal fibres pass over it and not any circular; a ring of this elastic tissue surrounds the neck of the bladder just behind the prostrate gland, to keep the orifice always closed and to hold the urine in an involuntary manner; the trigone and uvula are the most sensitive part of the bladder, in irritation of the trigone there is desire to pass water and pain referred to the end of the penis.

Prostrate gland is of the size and shape of a chesnut, lying before neck of the bladder and surrounding neck of the urethra, resting upon the rectum about an inch

and a half above the anus. It is a compound mucous gland composed of a collection of mucous follicles, gives off ten or twelve ducts, besides entering into the urethra and secretes a fluid to unite with the semen to increase its bulk; of a very firm feel like gizzard, has a strong external fibrous coat, perforated by the urethra, which passes through the upper part and also two ejaculatory ducts. It is divided into two lateral lobes and an isthmus, so that the two lateral are divided by the passage of the urethra and a groove underneath for the rectum, the isthmus is seperated from the lateral lobes by the ejaculatory ducts.

Vesiculae seminales are two pearshaped bodies placed under the base of the bladder between it and the rectum and are reservoirs for semen; each is formed of a convoluted mucous tube and is thought to secrete a mucus to mingle with the semen. They are nearest each other near the prostrate gland; along the inner edge of each runs the vas deferens and joins the duct from the vesiculae seminales to form the common ejaculatory duct, which pierces the prostrate and opens into prostatic portion of the urethra. It is likened to the ductus communis choledicus.

Penis, is composed of three bodies two corpora cavernosa and

a corpus spongiosum. Each corpus cavernosum commences by two processes called the crus penis, each arises from the inner side of the rami ischii; they then converge and unite in front of symphysis pubis, become large and take the name of corpora cavernosa and extend as far as the corona glandis, where they terminate. It has a dense white fibrous and a white and opaque internal cellular structure and the cells are filled with erectile tissue, where blood accumulates during erection of the penis; there is a partial division between them, called septum pectiforme, so that it is impossible to inject one side without the other. The corpus spongiosum begins from a swelling called the bulb and extends forwards in a groove on the under part of the corpora cavernosa, at its extremity it swells again and forms the glands so that the bulb is at one end and the glans at the other; the fibrous coat is thinner than that of the corpora cavernosa; internally of a spongy texture and erectile tissue; the mucous canal of the urethra runs through it. In the groove between the corpora cavernosa on the upper surface run the dorsal vessels and nerves; the subcutaneous cellular tissue contains no fat. The prepuce is a fold of common integument, skin externally, mucous membrane internally and cellular tissue between. Around the corona glandis are the glands of Tyson.

A ray of light passing through the eye passes through the ~~cap~~
Conjunctiva
Cornea
Membrane of the aqueous humour
Aqueous humour of anterior ~~humour~~ chamber
Aqueous humour of the pupil
Aqueous humour of the posterior chamber
Membrane of aqueous humour again
Capsule of lens
Lens
Capsule of lens again
Hyaloid membrane
Vitreous humour
Vascular, nervous and serous layers of the retina and is then absorbed by the pigmentum nigrum of the choroid coat.

Eye; the eyeball is composed of, coats and humours and the coats are divided into proper and adventitious.
The two most external proper coats are the sclerotic and cornea. The sclerotic forms the posterior $\frac{4}{5}$ths of the globe and is a fibrous coat, strong, white and opaque perforated by the optic nerve at the bottom of the eye about one line to the inner side of the centre and in the centre of the optic nerve the arteria centralis retinae enters and around the optic nerve the ciliary arteries and nerves passing. The use of the sclerotic is as a case to the eye and to give attachment to various muscles which move it; it is strengthened on the forepart by the tunica albuginea, which is an adventitious coat of the eye.
The cornea forms $\frac{1}{5}$th of the anterior part of the globe, where the sclerotic is deficient and is more convex than the sclerotic so that it bulges in front of the eye, it is joined to the sclerotic by being let into a groove like a watch glass into its case. The front of the cornea and sclerotic are both covered by conjunctiva, which is a mucous membrane reflected from the eyelids and is the second adventitious coat of the eye.
The conjunctiva adheres loosely to the sclerotic but closely to the cornea. Its use is to secrete a fluid to lubricate the front of the eye and to connect the eyelids to the globe to prevent foreign bodies penetrating too deep into the orbit.

The cornea of children are more prominent than those of old people.

The iris is more highly vascular and receives more nerves than any other structure of the same size in the body. In the foetus up to the seventh month the pupil is occupied by a membrane called the membrana pupillaris.

The cornea is kept prominent and projecting by the aqueous humour, which is behind it and therefore is lined posteriorly by a serous membrane, which is the membrane of the aqueous humour and is composed of five or six laminæ laid one inside the other like the layers of cartilage.
Inside the sclerotic lies the choroid coat, which is a dark brown vascular coat, it is made of a dark colour from secreting a dark mucus called the pigmentum nigrum, which is of use to absorb the rays of light, after they have been impressed upon the retina. Between the sclerotic and choroid coats are seen the ciliary nerves and long ciliary arteries. At the forepart of the eye is the ciliary ligament, which is a white ring of condensed cellular tissue, serving to connect the sclerotic, the choroid, the iris and the cornea and is perforated by all the ciliary nerves and arteries passing in to supply the iris.
The iris is a circular membrane with a central aperture called the pupil, placed in front of the eye suspended from the ciliary ligament and floating in the aqueous humour. It is coated on each side by the serous membranes of the aqueous humour, is coloured blue or hazel in front, but posteriorly is of a dark colour and called the uvea, because it secretes the pigmentum nigrum. It is of use to regulate the quantity of light admitted into the eye and to adapt the eye to the vision of near objects. It is muscular and is said to

The stimulus, that causes the circular fibres to contract, is light.

The serous membrane is called the tunica Jacobi.
The most sensitive portion of the retina is the foramen of Sœmmering in the centre of the bottom of the eye. The entry of the optic nerve is not sensitive either because the optic nerve is not yet sufficiently expanded or else because the trunk of the arteria centralis retinæ passes through it

have two sets of fibres. Circular around the margin of the pupil to ~~dilate~~ contract it and radiating to dilate it.

Pupil contracted	Pupil dilated.
In a bright light	In the dark and in a weak light
In vision of near objects	In compression of the brain
During sleep	In amaurosis
In poisoning by opium	In poisoning by most narcotic poisons especially belladonna.
In meningitis and acute hydrocephalus	After great losses of blood
In epilepsy	In scrofulous diathesis and other forms of constitutional debility.
In rabies	
often in concussion of the brain	

The next internal coat of the eye to the choroid is the retina, which is formed of three layers; outer or serous; middle or nervous; and internal or vascular.

The eye has three humours.

1. The vitreous humour forms the posterior two thirds of the globe of the eye; it is convex posteriorly and concave anteriorly; it appears to be gelatinous, but is contained in a membrane divided into cells and is no denser than water; the membrane is called the hyaloid membrane; the vitreous humour is of use to support the retina.

On the front of the vitreous humour around the circumference of the lens are the ciliary processes, which are plaiting

The cornea as well as the lens refracts the light
The lenses of fishes are more globular to compensate for the density of the fluid in which they live and to enable the rays to be reflected on the retina in a proper focus.

The anterior chamber is four times the size of the posterior.

of the choroid coat, 70 or 80 in number, secreting a large quantity of pigmentum nigrum so as to make the front of the eye perfectly opaque except where the lens lies.

2. The crystalline lens is doubly convex, most convex posteriorly contained in a capsule of its own which also contains a little fluid called the liquor Morgagni, but this is a post mortem appearance. The lens and its capsule are contained in their place by the splitting of the hyaloid membrane, by this splitting is formed the canal of Petit, which runs round the circumference of the lens; it is a very small passage. The ciliary striae are seen on the front of the vitreous humour, they are dirty marks left after the ciliary processes are detached. The use of the lens is to refract the rays of light and to bring them to a focus on the retina; the lens is densest in the centre to counteract the unequal refrangibility of the rays and to prevent the appearance of prismatic colours on the retina.

3. The aqueous humour occupies the space between the anterior surface of the lens and the posterior layer of the cornea and is divided into two parts by the iris called the anterior and posterior chambers and these communicate through the pupil.

Kidneys lie in the loins in the lumbar and hypogastric regions corresponding to the two inferior dorsal and two superior

Above the umbilicus the veins lie in front of the arteries and below they lie behind.

lumbar vertebrae; the left is a little higher than the right because of the liver and they lie on the psoas magnus, broad muscle of the diaphragm and quadratus lumborum and are imbedded in fat and are only covered by peritoneum on the anterior surface and the peritoneum adheres very loosely to them; the hilus towards the spine and at the hilus the vein lies in front, artery next and ureter behind. The anterior surface is convex and the posterior flatter and the upper end is the largest. The kidney has also a thin fibrous coat of its own called the tunica propria and when you cut a kidney you find a cavity in its centre and glandular structure around the circumference, divided into two parts cortical and medullary.

The medullary is composed of straight tubes called tubuli uriniferi arranged in conical bundles, papillae or pyramidal processes of which there are 10 or 12 in each kidney and these project into little cups called calices and these communicate with the central cavity of the kidney by three passages called infundibula and the central cavity is called the pelvis, from which the ureter proceeds.

The cortical part is highly vascular composed chiefly of blood vessels intermingled with microscopic convoluted tubes in which the urine is first secreted, also when the kidney is minutely injected and the cortical part examined with the microscope, there will be found numerous

plexuses of bloodvessels called corpora Malpighiana, by which the urine was first thought to be secreted, and the tubuli and cavity are lined by mucous membrane prolonged through it to the ureter, so that the urine is secreted in the convoluted tubes in the cortical part of the kidney, then passes down the straight tubes in the tubular part and drops from the papillae into the calices, from which it passes by the infundibula into the pelvis and thence descends through the ureter into the bladder.

There are two forms of glandular substance in the kidney.

1. Cortical, vascular or secreting.

2. Medullary, tubular or excreting.

The ureter is about 10 inches long and passes downwards and inwards upon the psoas muscle, crosses the common iliac artery at its bifurcation and then descends in posterior false ligament of the bladder into the pelvis and opens obliquely through the coats of the bladder into its interior at the posterior angle of the trigone. It is crossed on the psoas by the spermatic artery and has two coats a cellular and mucous and opens obliquely into the bladder to prevent regurgitation of urine.

Stomach is a muscular membranous bag, the most dilated part of the alimentary canal and is of a conical

figure or compared to a bag of bagpipes, the large end towards the left side and small end to the right. It is situated in the epigastric and left hypochondriac regions and the right end is lower than the left on account of the liver on the right side. It has two orifices, the cardiac, which communicates with the œsophagus and the pyloric, which communicates with the duodenum. The cardiac orifice is one third from the left end of the stomach; the upper edge is concave and is the lesser curvature and the lower is convex and is the greater curvature. There are three omenta attached to the stomach; the great omentum to the great curvature, the lesser to the lesser curvature and the splenic omentum to the left end. The stomach has three coats, peritoneal muscular and mucous; the peritoneal coat is wanting where the omenta are attached; there are two layers of muscular fibres in the muscular coat; the longitudinal outside and the circular within, the longitudinal are continued from the œsophagus and are chiefly placed upon the upper surface along the lesser curvature and within these are the circular from the great left end towards the pylorus. The mucous membrane is disposed in rugæ to allow of distension, when they unfold; the mucous membrane of the stomach differs from that of the œsophagus because that of the œsophagus is covered by skin and is not so

It is the most fixed of all the intestines, because it is only covered in front by peritoneum and is connected behind to the kidney and spine by cellular tissue.
The ascending part is more moveable than the rest being covered both before and behind with peritoneum, i.e. to the same extent as the stomach is.
It is the widest part of the small intestine, while the narrowest is the ileum

vascular, while the mucous membrane of the stomach is covered by the epithelium. The pylorus is known by its being constricted and feeling hard and thick, because there is a circular fold of mucous membrane and a circular fold of muscular fibres, which are useful to prevent the food passing into the duodenum before being converted into chyme; it is more the nature of a sphincter than a valve. About the pylorus there are numerous mucous follicles, which secrete a fluid which assists in digestion, which explains why the pylorus is more subject to scirrhus; there is no sphincter at the cardiac orifice, because the fibres of the diaphragm form a sphincter for it.

The small intestine is divided into three parts, duodenum, jejunum and ileum.

Duodenum is the first part and is the length of 12 fingers breadth. It commences at the pylorus in the epigastric region, passes first upwards to the right side as far as under surface of the liver and neck of the gall bladder, then turns downwards in front of right kidney as low as third lumbar vertebra and then turns upwards and inwards across the spine to left side of second lumbar vertebra, where it ends in the jejunum. The duodenum is divided into three parts, ascending, descending and transverse.

Ductus communis choledochus and pancreatic duct

Jejunum is said to be so called, because it is generally found empty after death.

The mesentery is the largest and most important sheet of the peritoneum.

Within the curve of the duodenum lies the head of the pancreas and at its termination it is crossed by the superior mesenteric artery and vein. It is called by physiologists the second stomach, in it chylification goes on and these vessels are thought to act as a sphincter to retard the passage of food from its cavity. There are two ducts opening into it at the lower part by a common orifice and they open obliquely in a valve like manner into the bowel and at this orifice a little papilla is seen.

Jejunum and ileum are together 25 feet in length; the upper two fifths is called jejunum and the lower three fifths ileum; they are very moveable, but still they are connected to the spine by the mesentery. These are the small intestines properly so called and they have three coats, peritoneal muscular and mucous and they are all completely covered by the peritoneal coat except where the mesentery is attached. The muscular coat is weak and is composed only of circular fibres and the mucous membrane is disposed in transverse ~~fibres~~ folds called valvulae conniventes, but no one of them goes quite round, each goes part of the way and they are met by others; they differ from the rugae of the stomach because they never disappear by distention, each is composed of two layers of mucous membrane; they are first found at the

It is Peyer's glands that become ulcerated in typhus fever;
there is no real division, between the jejunum and ileum,
but the upper end of the jejunum is easily distinguished
from the lower end of the ileum, because the jejunum is
wider than the ileum, more vascular, of a darker colour,
has thicker coats and more valvulae conniventes.
The appropriate function of jejunum and ileum is to
afford an extensive surface for the absorption of chyle.

The large intestines differ from the small, because they are
sacculated and there are three longitudinal bands of muscular
fibres and the appendices epiploicae, which are folds of
peritoneum containing fat.
The lower end of the sigmoid flexure and the rectum are not
sacculated and have no longitudinal bands.
The widest part of the large intestine is the caecum and the
smallest the sigmoid flexure
The appendix vermiformis is only rudimentary in man.

transverse part of the duodenum, where they are very numerous, they are also large and numerous in the jejunum but at the lower end of the ileum they are wanting. Their use is to retard the passage of food and give more time and surface for absorption of the chyle. There are two principal kinds of mucous follicles in the small intestines viz Brunner's or solitary glands in the duodenum and the glandulae aggregatae or Peyer's glands in the lower end of the ileum.

The large intestines are divided into caecum, colon and rectum.

Caecum. The large intestine commences in the right iliac fossa and the small intestine opens into its left side, in consequence of this there is a part of the large intestines left below the entrance of the small and is called the caecum, and with this is connected a small piece of intestine called the appendix vermiformis caeci, which contains only a small quantity of mucus which it secretes. There is a valve between the small and large intestines composed of two folds placed transversely one above and the other below the opening and each of these folds is formed of mucous membrane and muscular fibres. Its use is to prevent regurgitation of faeculant

matter from the large to the small intestines. It is called the ileocolic valve. The union of the two folds is called the commissure, which passes round the large intestines and becomes stretched when the large intestines are filled and become closed so as to prevent regurgitation.

Colon ascends on the right side as far as undersurface of the liver, passes horizontally across the body below the stomach and passes into the left hypochondrium as far as the spleen and there descends on the left side and in the left iliac region forms a turn, which is called the sigmoid flexure and terminates in the rectum. So that the colon is divided into four parts ascending, transverse, descending and sigmoid flexure. The transverse portion crosses the body in the lower part of the epigastric region and in the upper part of the umbilical region. Two sheets of peritoneum are attached to it; in front the great omentum, behind the mesocolon which attaches it to the spine.

Rectum is 12 inches long and commences at the left sacroiliac synchondrosis; first passes downwards and backwards into the hollow of the sacrum inclining from the left to the right so as to reach the median line; at the third piece of the sacrum it turns forwards

beneath the base of the bladder and vesiculae seminales and in front of the coccyx and when it comes to the prostrate gland it turns backwards to the anus. The first third of the rectum is covered nearly all round by peritoneum and is connected to the sacrum by the mesorectum. The middle third is only covered in front by peritoneum, that is by the rectovesical pouch and the lower third is not covered at all by peritoneum, but it is connected to the neighbouring parts by cellular tissue. The rectum is the largest at the lower part and has two folds of mucous membrane at different heights called valves. It has a very strong muscular coat, but they are not in bands but spread out over the whole surface of the bowel.

<u>Regions of the abdomen</u>. The abdomen is divided into 9 regions. You draw first two transverse lines one between the cartilages of the ninth ribs and the other between the anterior superior spinous processes of the ilia and two vertical lines from the ninth rib to the centre of Poupart's ligament.

Right hypochondriac	Epigastric	Left hypochondriac
Right lobe of the liver, gall-bladder, part of duodenum, ascending colon, upper end of right kidney and the suprarenal capsule.	Part of the stomach with its cardiac and pyloric orifices, commencement of duodenum, left lobe of liver, lesser omentum and Glisson's capsule, part of pancreas and lumbar ganglia of the sympathetic.	Great end of stomach, spleen, splenic omentum, upper end of descending colon, upper end of left kidney and suprarenal capsule

Right lumbar	Umbilical	Left lumbar
Kidney, ascending colon, descending duodenum and head of the pancreas	Great omentum, transverse colon, termination of duodenum, commencement of jejunum, mesentery and meso-colon.	Part of the kidney, descending colon and convolutions of the small intestines.

Right iliac	Hypogastric	Left iliac.
Cæcum and appendix vermiformis, termination of ileum, ileo-colic valve and commencement of colon.	Great omentum, convolutions of the ileum, bladder if distended, uterus in pregnancy, commencement of the rectum.	Sigmoid flexure of the colon, convolutions of the small intestines.

Stomach, pylorus, duodenum, gall bladder, ascending colon, upper end of right kidney and suprarenal capsule.

Liver lies in the right hypochondriac and epigastric regions; it is of a quadrilateral shape, convex superiorly and is there in contact with the diaphragm. Inferiorly it is concave and in contact with several of the abdominal viscera. The posterior edge is obtuse, the anterior acute. The liver weighs 4lbs and it is supported in its place by ligaments of which there are five and most of them are made by peritoneum, but one is not, viz, the round ligament, which is the obliterated umbilical vein. The largest peritoneal ligament is the broad or suspensory ligament or falciform ligament which extends over the upper surface of the liver to the undersurface of the diaphragm. All the other three ligaments are at the posterior border connecting it to the diaphragm and spine; they are the two lateral and coronary. The coronary being in the centre of two lateral and suspensory ligaments. Upon the undersurface of the liver five fissures are seen; the largest of which is the longitudinal, which runs from before backwards and contains in its anterior half the obliterated umbilical vein and in its posterior half the ductus venosus. The most important fissure is the transverse which extends from the longitudinal fissure transversely towards the right side; here all the vessels and other parts supplying the liver pass in and out, except the hepatic vein, which comes out at the obtuse margin and opens into

In the fœtus the left lobe is equal to the right

the inferior cava. The hepatic arteries, ducts, venae portae nerves and absorbents pass in at the transverse fissure. There is also a fissure for the gall bladder and one to give passage to the vena cava. The liver has five lobes, first the great right lobe and the lesser left lobe; the right lobe is divided from the left, on the upper surface by the suspensory ligament and on the under surface by the longitudinal fissure. The most prominent of the lesser lobes is the lobulus spigelii ~~connecting it to the under part of the right lobe~~ which lies on the under surface behind the transverse fissure and there projects like a pear. The lobulus cordatus is merely a tail to the lobulus spigelii connecting it to the under part of the right lobe and the lobulus quadratus is the spare part in front of the transverse fissure. The liver has two coats a peritoneal and fibrous. The peritoneal is wanting along all the fissures where the ligaments are attached and at the posterior part of the great right lobe.
The liver is a conglomerate gland and is composed of an infinite number of similar parts, which used to be called acini, but are now called lobules.
The circulation through the liver is peculiar, because it receives two supplies of blood, one by the hepatic artery for its nutrition and the venous blood by the vena portae for the secretion of bile and the residuary blood from

both vessels is brought out by the hepatic veins.
The lobules are more closely connected to the hepatic vein than they are to the vena portae and when seen under the microscope appear like leaves and each rests by its base on a branch of the hepatic vein, which are called the sublobular veins. A little vein begins in the centre of each called the intralobular vein to take the blood away into the sublobular vein on which the lobule rests. The vena portae gives off branches which ramify between the lobules and which are called interlobular veins and supply them at their circumference.

Vena portae	Hepatic veins.
Ramifies from the centre to the circumference, becoming smaller.	Proceed from before backwards becoming larger.
In passages called portal canals accompanied by the artery, duct &c and surrounded by loose cellular tissue prolonged from Glisson's capsule, so as to collapse when cut across.	Alone and intimately connected to the substance of the liver, so as to remain patulous when cut across.
Ends in the interlobular branches, which surround the lobules and supply them at their circumference.	Commence by the sublobular branches, on which the lobules rest and which receive the little intralobular veins.

It has been calculated that ℔ℨXXX of bile have been secreted in twenty four hours.

Gall bladder is a reservoir for bile between meals; it is a pearshaped membranous bag lying in a fissure under the right lobe of the liver, with the large end or fundus directed forwards and the smaller end towards transverse fissure. It has three coats, a very partial peritoneal coat a cellular and a mucous coat. The peritoneum does not pass between the gall bladder and the liver, but it adheres to the liver by cellular tissue. At the neck of the gall bladder comes off the cystic duct which passes down in Glisson's capsule and very soon unites with the hepatic duct coming off from the transverse fissure of the liver to form the ductus communis choledicus, which passes down behind the pylorus and behind the head of the pancreas and opens with the pancreatic duct into the inferior angle of the duodenum.

Secretion and course of the bile.

The bile is secreted in the lobules of the liver from venous blood by the interlobular veins and is conveyed away by minute ducts called pori biliarii and brought out at the transverse fissure by the hepatic duct. Then if digestion is going on, it descends in the ductus communis choledicus into the duodenum, but if digestion is not going on it regurgitates up the cystic duct into the gall bladder, where it remains till the next meal.

Uses of the bile.

1. In separating the chyle from the faeces.
2. As a natural purgative to excite the peristaltic action of the intestines.
3. To be a medium for the removal of C and H from the system; also as an alkaline fluid it neutralizes the acid of the gastric juice and by promoting healthy digestion, it prevents the putrefaction of the faeces.

All the secretions of the body are divided into two classes.

1. Excrementitious, which pass out of the body and never return.
2. Recrementitious, which pass again into the body for nourishment.

Pancreas is an elongated conglomerate gland, which lies obliquely across the spine behind the stomach, the right end is lowest and largest and is surrounded by the curve of the duodenum, of a straw colour and is only covered by peritoneum anteriorly, behind it is connected to the spine crura of the diaphragm and the great vessels by cellular tissue. It has one duct passing along its whole length, which opens with the ductus communis choledicus into the inferior angle of the duodenum. It is called the abdominal salivary gland and the secretion is of the same use as the saliva viz; to contribute salts and nitrogenized principles to the chyle and perhaps to dilute the bile, the ascending layer of the meso-colon covers it.

Ague cake does not produce dropsy because it does not obstruct the vena portae or vena cava.

Spleen lies in the left hypochondrium beyond the stomach to the great end of which it is connected by the splenic omentum, of a slate colour and spongy texture and highly vascular and the most usual theory to explain its use, is that it proves a diverticulum for the blood when digestion is not going on. It more probably contributes to the formation of the blood, but it is not necessary to life, because it has been removed from animals without injury; it becomes particularly enlarged in ague and is called ague cake.

The middle mediastinum contains the heart enclosed in the pericardium, the ascending aorta, superior vena cava, bifurcation of the trachea, pulmonary arteries and veins and the phrenic nerves.

The posterior mediastinum is bounded behind by the vertebral column, in front by the pericardium and on each side by the pleura; it contains the descending aorta, greater and lesser azygos veins and superior intercostal vein, the thoracic duct, œsophagus, and the pneumogastric and great splanchnic nerves.

The anterior mediastinum is bounded in front by the sternum and on each side by the pleura and contains remains of the thymus gland; origins of sternohyoid; sterno-

Absorbent vessels have two coats a cellular and a serous and are very delicate and transparent and have very many valves; the lacteals commence in the villi of the mucous membrane of the jejunum and ileum, but where or how the lymphatics begin is not known, every absorbent gland receives many more vessels than it gives out and in this way the number of absorbent vessels becomes progressively diminished.
The vessels passing in are called vasa inferentia and those going out vasa efferentia.
Chyle owes its milky appearance to globules of fatty matter which are dispersed through it and if a person be bled shortly after a full meal, the serum of the blood will have a milky appearance from containing the fatty globules of the chyle.

Absorbent glands are ~~globular~~ globular bodies contained in capsules of condensed cellular tissue, composed of plexuses of tortuous anastamosing absorbent vessels intermingled with blood vessels, in which the chyle and lymph become assimilated to the blood. The albumen especially is thought to become there converted into fibrine.

thyroid and triangularis sterni; lymphatics from the surface of the liver and internal mammary artery and vein of the left side.

Absorbents. The absorbent system is composed of, vessels glands and a main trunk.

Absorbent vessels are of two kinds.

1. Lacteals found in the small intestines and mesentery conveying chyle.
2. Lymphatics found in all other parts of the body except the brain and spinal marrow conveying the lymph.

Chyle is the nutritious part of the food.

Lymph is a clear fluid taken up by the lymphatics in every part of the body except the brain and spinal marrow to be mixed with the chyle and contribute to the formation of the blood; it is sometimes called the residue of nutrition and is either the result of the waste of the body which is continually going on, or is that part of the liquor sanguinis which is not employed in nutrition; because blood is formed by two fluids, chyle and lymph.

Absorbent glands are of two kinds.

1. Mesenteric 130 to 150 found in the mesentery and giving passage to the chyle.
2. Lymphatic found in great numbers along the spine, about the jaws, side of the neck and about the great joints and giving passage to the lymph.

The thoracic duct commences on the second lumbar vertebra behind the right renal artery by a sac called the receptaculum chyli, which receives lacteals from the mesentery and lymphatics from the lower extremities and pelvis, then ascends through aortic opening of the diaphragm and through posterior mediastinum lying behind and between aorta and vena azygos, then crosses at the back of the œsophagus, goes up on the left side into the neck as high as the sixth cervical vertebra, where it turns outwards and downwards behind the carotid artery and opens into the left subclavian vein near its junction with the internal jugular; just before it terminates it receives absorbent vessels from the left arm and left side of the head and neck, while those from the right arm and right side of the head and neck form a lesser trunk which opens into the right subclavian vein at a corresponding point. It is delicate and of the size of a crowquill, has many valves and where it opens into the subclavian vein, there are two valves to prevent regurgitation of blood into it.

Functions of the absorbent system. John Hunter termed the absorbents the modellers of the body, he thought that they removed old parts, that the arteries might deposit new, he also thought that they were the great agents in ulceration and absorption of poisons and medicines. But it is now

For chyle and lymph to be perfectly converted into blood, they must be circulated through the lungs and exposed to the oxygen of the air.

thought that these functions are chiefly if not entirely performed by the capillary bloodvessels and that the absorbents are only useful to collect and prepare material for the formation of the blood. After the chyle and lymph have passed the absorbent glands and entered the thoracic duct, they resemble the blood by containing fibrine, corpuscles and the salts of the blood, also by coagulating spontaneously when drawn from a vessel and becoming of a rosy colour when exposed to the oxygen of the air.

Glands are of three kinds.

1. Absorbent glands, also termed from their globular figure conglobate glands and it is from these that the term gland has arisen.
2. Secreting glands are mucous sacs or tubes with blood vessels ramifying upon them and within which fluids are secreted from the blood. Of these there are three kinds.
   α. Simple, mere sacs or follicles as the lacunae of the urethra.
   β. Tubular, composed of tubes as the kidney and testis.
   γ. Conglomerate, composed of a collection of minute vesicles as the liver, pancreas, salivary glands &c.
3. Other vascular bodies neither absorbent nor secreting, as the thyroid, thymus, spleen and suprarenal capsules, whose use is not with certainty known but are thought to contribute to the formation of the blood.

The tongue is the organ of taste and is a muscular organ composed of four pairs of muscles. Its upper surface is invested by mucous membrane and upon it are seen papillae, which are of two kinds.

1. Those round the tip and edges, the papillae filiformes, the organs of taste which contain terminal filaments of the gustatory nerve and erectile tissue.
2. Papillae fungiformes at the root of the tongue are mucous follicles, the largest of them arranged in a triangle, apex posteriorly and at the apex is seen the foramen caecum, where many of the follicles open and behind this is the epiglottis.

Frenum linguae is a fold of mucous membrane under the tip of the tongue connecting the tongue to the symphysis of the lower jaw

Larynx is an organ placed at the fore part of the throat and upper part of the windpipe suspended from the os hyoides and useful to answer three important purposes.

1. To give tone to the voice
2. To prevent foreign bodies entering the trachea.
3. To hold the breath

The os hyoides is composed of a body in front, two cornua extending backwards on each side and two lesser cornua at

Four times as deep behind as in front.

the upper surface of the junction of the body with the great cornua. It gives attachment to the stylohyoid ligament, which sometimes becomes ossified, so as sometimes to become part of the skeleton. The skeleton of the larynx is formed of four cartilages and one fibrocartilage, composed of two broad plates called alae united in front at an angle which is called the pomum Adami. The thyroid cartilage has also four cornua, two superior and two inferior at each side at the back part of the great alae, the upper are the largest and give attachment to the thyrohyoid ligament, which goes to the great cornu of the os hyoides; these are also connected by the thyrohyoidean membrane, which is pierced by the superior laryngeal nerve and artery. The lower cornu of the thyroid articulates with the side of the cricoid cartilage by a moveable joint provided with a synovial membrane. The cricoid cartilage is a complete ring and is likened to a signet ring, because it is deeper behind than before. To produce this great difference, it is the upper edge that slopes, the lower edge which is horizontal is connected below to the first ring of the trachea by elastic tissue, superiorly it articulates on each side with the superior cornu of the thyroid cartilage and in front is connected to it by the cricothyroid membrane. There are two arytenoid cartilages of a pyramidal shape and resting upon the upper edge of the back part of the cricoid cartilage where they are fixed by

The upper chords are called false because they are nothing but mucous membrane.
The lower are called true, because they are ligaments covered by mucous membrane, attached in front to the pomum Adami and behind each to its the base of its own arytenoid cartilage, so that they are nearer each other in front than behind.
The true vocal chords may be called from their attachment the thyroarytenoid cartilages.

very moveable joints with synovial capsules, so that they can be moved almost in any direction like horse's ears.

The fibrocartilage is the epiglottis in shape like a leaf, which lies behind the root of the tongue, projecting into the cavity of the pharynx over the opening of the larynx. It is attached to the root of the tongue by the frenum epiglottidis. Its most distinguishing property is its remarkable elasticity. It never ossifies a change to which the thyroid cartilages are very liable.

The glottis is an oval opening, which leads from the pharynx into the larynx, bounded anteriorly and superiorly by the epiglottis, posteriorly and inferiorly by the apices of the arytenoid cartilages and laterally by folds of mucous membrane. In looking through the glottis into the interior of the larynx we there see two pairs of vocal chords, the upper false, the lower true, also on each side between the false and true chords a pouch called sacculus laryngis, also between the two true vocal chords a triangular opening leading into the trachea called the rima glottidis.

The rima glottidis is a narrow opening and triangular, apex in front, base behind. The arytenoid cartilages forming moveable joints with the cricoid different states of the chord and rima can be produced. All the uses of the larynx are performed in the rima glottidis.

The rima glottidis is closed at five periods.

1. During deglutition
2. During vomiting
3. During great muscular exertion
4. When any foreign body touches the mucous membrane of the larynx
5. When the breath is voluntary held.

Pharynx is a musculomembranous sac, extending from the basilar process downwards in front of the cervical vertebrae as low as the cricoid cartilage, behind which it ends in the oesophagus. It adheres very loosely to the vertebrae by loose cellular tissue. It is coated externally by four pairs of muscles {three constrictors and pharyngei.}.

There are seven openings in the pharynx.

1. Oesophagus.
2. Larynx.
3. Mouth.
4. 5. Posterior nares.
6. 7. Eustachian tubes.

The posterior nares are bounded above by the body of the sphenoid, below by the plate of the palate bone, externally by the internal pterygoid pterygoid plates and are divided by the vomer.

The palatoglossus is also called the isthmus faucium

The eustachian tubes are cartilaginous and bony tubes extending from each side of the pharynx upwards and outwards to the tympanum. Their use is to form a communication between the ear and the interior of the tympanum and external air through the fauces and nostrils and so provide for equal pressure on each side of the membrana tympani.

Isthmus faucium is the opening from the mouth into the pharynx, bounded above by the soft palate and uvula, below by the root of the tongue and on each side by the arches of the palate and tonsillar glands.

The soft palate or velum pendulum palati is a fold of mucous membrane containing muscles {azygos uvulae, tensor palati and levator palati} and an aponeurosis, which hangs from the edge of the hard palate downwards and backwards into the cavity of the pharynx. It prevents the food in deglutition passing up into the Eustachian tubes and nostrils.

The arches of the palate are muscles covered by mucous membrane, two on each side {anterior and posterior arches} In the anterior is the palatoglossus; in the posterior the palatopharyngeus.

They are called amygdalae because they are of the size and shape of almonds.

The tonsils are compound mucous glands composed of a congeries of mucous follicles, called amygdalae. Each rests externally against the superior constrictor of the pharynx; it has a very irregular ragged appearance. Their use is to secrete a mucus to lubricate the bolus of food before its descent into the oesophagus.

Deglutition. The food being masticated and insalivated is formed into a bolus by the cheeks and placed on the root of the tongue, where it stimulates the glossopharyngeal nerve and the act of deglutition begins. The pharynx is raised to place the opening of the larynx securely under cover of the epiglottis and the bolus being lubricated by the tonsils is sized by the constrictors and carried into the oesophagus. It is prevented from returning into the mouth by the palatoglossi and from ascending into the nostrils and Eustachian tubes by the soft palate. From descending into the larynx it is prevented partly by the epiglottis in its own descent and partly by the closure of the rima, which always at this time occurs, but chiefly by the ascent of the larynx, which always occurs at the commencement of the process.

The brain is distinguished into the cerebrum, cerebellum, pons varolii and medulla oblongata and is invested by

three membranes {dura mater, arachnoid and pia mater} or the fibrous, serous and cellular coats.

The dura mater is a dense fibrous sac, enclosing the brain which it supports by prolongations or processes {falx major and minor and the tentorium} It adheres strongly to the base of the cranium and to the sutures and its outer side is marked by the trunk and branches of the middle meningeal artery. It is prolonged into the vertebral canal and into the orbit and gives off three processes.

1. Falx cerebri extending from crista galli to the tentorium, seperating the two hemispheres of the brain and preventing too great pressure of one hemisphere on the other. Along its upper edge is the superior longitudinal sinus; its lower edge contains the inferior longitudinal sinus. It is in shape like a scythe.

2. Tentorium, a horozontal septum, which separates the posterior lobes of the cerebrum from the upper surface of the cerebellum, is attached along the margin of the petrous bones to transverse ridges of occipital bone and clinoid processes of the sphenoid.

3. Falx cerebelli is a scythe shaped process of the dura mater, which descends from the internal occipital protuberance to the edge of the foramen magnum, partially seperating the hemispheres of the cerebellum and containing the occipital sinuses.

The sinuses of the dura mater are

1. The superior longitudinal sinus extends along middle of the roof of the cranium, from crista galli of the ethmoid bone to middle of the occipital bone, where it terminates in the torcula Herophili. The cerebral veins open into it from behind, forwards and it sometimes receives one or two veins from the nose through the foramen caecum. It is crossed by several white bands {chordae Willisii} which prevent over distension of the sinus and keep the mouths of the veins open and contain some glandulae pacchioni.
2. Inferior longitudinal sinus occupies the free edge of the falx cerebri and ends in the straight sinus.
3. Torcula Herophili is an irregular cavity situated at the union of the three great processes of the dura mater. It communicates by six openings with the superior longitudinal, two occipital, two lateral and the straight sinus.
4. Straight sinus runs along the arch of the tentorium from the end of the inferior longitudinal sinus to the torcula Herophili, it receives the veins of Galen and the superior veins of the cerebellum.
5. 6. Right and left occipital sinuses commence on the sides of the foramen magnum in falx cerebelli and empty themselves into the torcula Herophili.

7. 8. Two lateral sinuses carry the blood from the torcula Herophili to the jugular veins, curve round the occipital in the groove and descend into the foramen lacerum posterius.

9. 10. Cavernous sinuses commence beneath the anterior clinoid processes, pass backwards on each side of the sella turcica to join superior and inferior petrosal sinuses.

11. 12. Two inferior petrosal sinuses descend from the cavernous sinuses to the lateral sinuses, close to the termination of which they empty themselves.

13. 14 Two superior petrosal sinuses run along the border of the tentorium and join the cavernous to lateral sinuses.

15. Circular sinus surrounds the sella turcica and pituitary body, communicating on either side with the cavernous sinuses.

16. Transverse sinus runs across the basilar process to join one inferior petrosal sinus to the other.

The arachnoid is a serous membrane forming a shut sac, which lines the inner surface of the dura mater and external surface of the brain and having descended beneath the corpus callosum and fornix, enters the third and lateral ventricles of the brain, from which it is again reflected to the external parts. It is also reflected from the nerves and vessels which pass to and from the brain, descends into the vertebral canal along the spinal marrow and terminates in a canal which passes down to extremity of the cavity of the sacrum

The tela choroidea is that portion of the choroid plexus, which is concealed by the fornix

and is then reflected upon the dura mater.

The pia mater is a cellular web containing a large number of blood vessels, which surrounds the brain dips down between the convolutions and enters the ventricles. Its outer surface is in contact with the arachnoid except between the convolutions, fissure of Sylvius, lobes of the cerebellum and near the pons Varolii. The pia mater having invested the external surface of the brain, descends along the great longitudinal fissure to pass over the corpus callosum and descend from the latter into the third ventricle, where it forms the tela choroidea; it also forms the choroid plexus of the lateral ventricles and then descends through the fissure between the middle lobe and pons Varolii to become continuous with the membrane lining the base of the brain.

The cerebrum is divided superiorly into two hemispheres, inferiorly into three lobes on each side. On the superior surface are seen the longitudinal fissure, convolutions and sulci. On detaching the falx and separating the hemispheres the corpus callosum is seen and if the hemispheres be cut down on a level with the corpus callosum the centrum ovale is brought into view.

The corpus callosum is a broad transverse commissure of medullary matter, by which the hemispheres are united. Its upper surface is marked by a longitudinal line {raphé} and along it run the arteries of the corpus callosum. The

The anterior horn runs forwards and outwards to terminate in the anterior lobe of the cerebrum.

The corpus fimbriatum is a narrow white band situated immediately behind the choroid plexus.

inferior surface forms the roof of the lateral ventricles, while in the median line it lies above the septum lucidum, fifth ventricle and fornix. On dividing it the lateral ventricles are exposed, one on each side

The lateral ventricles contain

Anterior horn.

Corpus striatum

Thalamus nervi optici

Posterior horn or digital cavity

Hippocampus minor

Inferior horn.

Hippocampus major

Fascia semicircularis

Choroid plexus

Corpus fimbriatum

The septum lucidum is formed of, two thin layers of medullary matter, containing between them the fifth ventricle; beneath the septum lies the fornix and if this be divided in the centre and reflected backwards and forwards, the whole of the lateral ventricles will be exposed.

The corpus striatum is a pyriform body, broad before, contracted behind, placed obliquely, composed externally of grey substance, somewhat tinged with brown but marked internally with striae.

The thalamus opticus is a large mass lying behind the corpus

striatum and in apposition with its fellow, the soft substance uniting the thalami is called the commissura mollis and they contain between them the third ventricle. In the posterior border of each thalamus are the corpora geniculatum externum and internum, which are connected by medullary striae to the tuberculæ quadrigemina and to the origin of the optic nerves. The posterior horns of the lateral ventricles converge and present when laid open the hippocampus minor.

The inferior horns pass backwards and outwards, then wind forwards and inwards to terminate close to the fissure of Sylvius. In it are the hippocampus major and corpus fimbriatum, which is continuous with the posterior pillar of the fornix.

The taenia semicircularis is a white strip of nervous substance running between the contiguous surfaces of the corpus striatum and optic thalamus. Anteriorly it is covered by a very delicate lamina of a yellowish colour; this is the lamina cornea of the taenia semicircularis.

The fornix is a flat triangular band of medullary matter, which is placed between the septum lucidum and the third ventricle, from which it is separated by the tela choroidea. The inferior surface is marked by oblique lines, where it is called the lyra. It terminates anteriorly in two pillars, which descend behind the anterior commissure to the corpora mamillaria. The posterior part also divides into two pillars

which join the corpora fimbriata and cornua Ammonis. Beneath the fornix is the velum interpositum.

The velum interpositum {a reflection of pia mater} is connected at each side with the choroid plexus and contains between its layers in the middle line the venae Galeni, which receive the blood from the ventricles and terminate in the straight sinus. Upon the under surface are the choroid plexuses of the third ventricle; and if the velum be raised the thalami optici and third ventricle are seen.

By drawing back the tela choroidea, the pineal gland is seen lying over the tubercula quadrigemina; this is a small mass of grey matter containing in the adult some calculous matter composed chiefly of phosphate of lime.

The tubercula quadrigemina are four small eminences, the nates above, the testes below, situated beneath the pineal gland and behind the third ventricle.

The commissures, anterior and posterior are two cord like white bands, which run transversely in front of and behind the third ventricle. The anterior one runs in front of the pillars of the fornix and is lost in the anterior hemispheres. The posterior is much shorter and lies in front of the tubercula quadrigemina and above the aqueduct of Sylvius.

On removing the median lobe of the cerebellum the valve of Vieussens is exposed, a thin plate of nervous matter forming the roof of the fourth ventricle, extending from the tubercula

quadrigemina to the cerebellum; if the value be broken down, the floor of the fourth ventricle and part of the aqueduct of Sylvius and calamus scriptorius will be seen.

The third ventricle is a narrow fissure enclosed between the optic thalami, bounded above by the velum interpositum and fornix and behind by the pineal gland, tubercula quadrigemina and posterior commissure; at the anterior part is the foramen Monroi, through which the lateral ventricles communicate with the third and thus indirectly with each other; here also is another foramen leading to the infundibulum, a prolongation of membrane extending from the third ventricle to pituitary body. From the posterior part another foramen leads to a canal & aqueduct of Sylvius, iter a tertio ad quartum ventriculum & forming a communication between the third and fourth ventricles.

The fourth ventricle is found at the end of the aqueduct, concealed by the cerebellum. It contains a small choroid plexus and is closed at the back part by a reflection of the arachnoid.

The cerebellum is divided into two lobes by the falx cerebelli. On the inferior surface is the inferior vermiform process, a small lobule situated on the median line. When the cerebellum is divided perpendicularly the arbor vitæ is seen, which depends on the intermixture of white and grey matter. It also contains a corpus dentatum.

The cerebellum is connected to the cerebrum and spinal marrow by three bundles of nervous matter viz.

1. Processus a cerebello ad testes
2. Crura cerebri, which pass to pons Varolii
3. Corpora restiformia, which join the posterior columns of the spinal marrow.

At the base of the brain are seen the anterior lobes, the middle lobes, pons Varolii with the medulla oblongata and inferior surface of the cerebellum. The parts occupying the median line are the median fissure, optic commissure, infundibulum, tuber cinereum, locus perforatus and pons Varolii. Also the olfactory nerves, fissure of Sylvius between the anterior and middle lobes and the optic nerves. Behind the optic commissure, the infundibulum, tuber cinereum and corpora mamillaria, on either side of which are the filaments of the third pair; crura cerebri passing from the pons to the cerebrum; the pons Varolii itself, with the fourth pair at its sides and the roots of the fifth pair emerging from its substance; the sixth pair at the point of junction between the pons and medulla oblongata and the medulla oblongata itself.

The pons Varolii is a mass of nervous matter, convex on the lower surface, which unites the cerebrum, cerebellum and medulla oblongata together. Anteriorly it is joined to the cerebrum by the crura cerebri, in the centre of which is seen a dark

portion of nervous matter {locus niger}. Posteriorly it is continuous with the medulla oblongata by the anterior pyramidal bodies. Its inferior surface is formed of fifth transverse fibres, most of which compose the crura cerebelli.

The medulla oblongata commences at the inferior edge of the pons and is continuous with the spinal marrow. On the anterior surface is the median fissure; on either side the anterior pyramids, which decussate nearly opposite the edge of the foramen magnum; they are seperated by a slight depression from the corpora olivaria, two oblong elevations of gray matter enclosed by a medullary layer. In the centre of each olivary body is a corpus dentatum. The corpora restiformia {posterior pyramids} form the posterior columns of the medulla oblongata. They ascend into the lobes of the cerebellum and are continuous inferiorly with the posterior column of the spinal ~~column~~ marrow.

The diamond space contains the tuber cinereum, infundibulum, corpora albicantia and locus perforatus. It is bounded in front by the optic commissure, behind by the crura cerebri and pons Varolii.

The parts seen in a vertical section of the head in the median line from above downwards are.

Cuticle
Rete mucosum } Skin
Cutis vera

Subcutaneous fat, containing the bulbs of the hair.
Tendon of occipitalis
Loose cellular tissue
Pericranium
Outer table
Diploe
Inner table or tabula vitrea } Bone
Dura mater.
Lining membrane
Pacchionian glands
Chordae Willisii } Superior longitudinal sinus.
Venous blood
Falx major occupying the longitudinal sinus
Arachnoid
Pia mater
Anterior cerebral arteries
Raphe } Corpus callosum
Lineae transversae
Septum lucidum, containing the fifth ventricle
Fornix, under which is the lyra Davidis
Velum interpositum, containing the venae Galeni
Commissura mollis, uniting the optic thalami
Third ventricle
Parts in the diamond space.
The parts seen in a median line of the base of the brain from

before backwards.
Longitudinal fissure between the anterior lobes
Corpus callosum
Commissura of the optic nerves
Tuber cinereum
Infundibulum
Corpora albicantia
Locus perforatus
Pons varolii
Medulla oblongata
The diamond space is bounded in front by the optic tracts and commissure, behind by the crura cerebri and pons Varolii and contains.

Tuber cinereum	Corpora albicantia
Infundebulum	Locus perforatus

Through each cavernous sinus passes
Internal carotid
Sixth nerve
Carotic plexus of the sympathetic
Along the outer wall of the cavernous sinus in separate cases of the dura mater pass
Third pair of nerves
Fourth pair of nerves
First division of the fifth.

The spinal marrow has two enlargements one at the lower part of the cervical region and the other at the lower part of the dorsal region, where it gives off nerves to the extremities

The spinal arteries are branches of the vertebral.

The medulla spinalis begins at the termination of the medulla oblongata at the back part of the foramen magnum and extends as low as the junction of the first and second lumbar vertebrae, but in the foetus as far as the sacrum; the rest of the canal is occupied by the cauda equina, which is a bash of nerves supplying the inferior extremities. The spinal marrow is contained in the dura mater, arachnoid and pia mater; this part of the dura mater is called the theca vertebralis, which extends to the coccyx and differs from the dura mater of the skull in not forming the periosteum, it hangs loosely in the spinal canal and is divided from the bones and ligaments by veins and fat. It is white externally but grey within and is a fluted column composed of six pillars united and divided by six grooves. The anterior and posterior median furrows are the deepest in which are lodged the spinal arteries, the lateral furrows are for the origins of the spinal nerves.
The spinal marrow is suspended in the vertebral column by the ligamenta denticulata, which are triangular portions of arachnoid.

Heart is a hollow muscle of a pyramidal shape, placed obliquely between the lungs and divided into apex, body and base. The base is situated above and a little to the right side, the apex which points to the left is received into a

The Eustachian valve is a fold of membrane placed between the inferior cava and inner border of the annulus ovalis.

depression of the lung between the cartilages of the fifth and sixth ribs. Its anterior surface is marked by a groove for the anterior coronary artery and vein; the posterior surface is also marked by a groove for the posterior coronary vessels. The right margin rests on the diaphragm, the left looks upwards and backwards. It contains two auricles occupying the base and two ventricles composing its body and apex.

The right auricle of a very irregular shape is divided into the auricle proper and appendix. It is larger than the left. In its cavity are above and posteriorly the opening of the superior cava; immediately below the orifice of the inferior cava, and between them the tubercle of Lower. The opening of the inferior cava is partially masked by the Eustachian valve. The inner wall of the auricle presents a septum {septum auricularum} in the middle of which is a depression {fossa ovalis}, which in the fœtus was occupied by the foramen ovale. A number of small openings {foramina Thebesii} supposed to be openings of veins are seen in the auricle.

The musculi pectinati are a number of fleshy fibres arranged in parallel columns in the appendix of the auricle. The right auricle communicates inferiorly with the right ventricle.

The right ventricle forms the greater part of the anterior surface of the heart. In it are the carneae columnae and their tendons {chordae tendineae} the tricuspid valves; opening of the right auricle and that of the pulmonary artery

The carneae columnae are rounded fleshy fasciculi which are divided into three orders.

1. Most numerous set, attached in their whole extent to the walls of the ventricle
2. Next numerous set, adherent to the walls by both extremities and free in the rest of their extent.
3. From three to eight in number arise from the walls of the ventricle, direct themselves becoming larger from its summit towards its base and terminate abruptly in the chordae tendineae, which are inserted into the margins of the tricuspid valve.

The tricuspid valve is a membranous fold adhering by one edge to the circumference of the auricular ventricular opening and with the other giving attachment to the chordae tendineae.

The opening of the pulmonary artery is placed at the upper and left part of the right ventricle and is furnished with three valves {semilunar or sigmoid} in the centre of each is the corpus arantii. Between the semilunar valves and artery are three pouches {pulmonary sinuses}

The left auricle is at the left and posterior part of the base of the heart, about one fifth less than the right auricle. It has an appendix and in its posterior wall are the orifices of the two right pulmonary veins. Its right wall is the interauricular septum.

The left ventricle is narrower and longer than the right. In it

are the same openings as in the right. The left auriculoventricular opening is guarded by the mitral valve.
The opening of the aorta is guarded by the three semilunar valves, outside which are the aortic sinuses {sinuses of Morgagni} the free edges contain corpora arantii and above them are the two orifices of the coronary arteries.

The lungs are two cellular elastic organs of a conical figure, seperated from each other by the heart and mediastina, connected at their roots by the bifurcation of the trachea and to the heart by the pulmonary vessels. The right lung is divided into three lobes; the left into two. They are composed of ramifications of the bronchi, pulmonary vessels nerves and lymphatics, united so as to form lobules, which are separated by filamentous cellular tissue, having a high elasticity. Each lobule divides into smaller lobules until it becomes impossible to follow them.

The ear is divided into three portions.
1. External, which consists of the pinna or auricle and the meatus externus.
The pinna is a thin fibrocartilaginous plate curved in different directions so as to present different eminences and depressions; the convex edge is called the helix, below which is a semicircular fold, the antihelix, which divides superiorly

into two crura; ~~the expansion~~; the depression between these is the fossa navicularis; in front of the meatus is an eminence {the tragus} directed backwards over the meatus; opposite to this is a projection, the antitragus, within these eminences is a concal cavity, the concha, leading to the meatus externus; below this is a fold of pendulous integument, the lobe.

The meatus auditorius externus extends from the concha to the membrana tympani, first forwards, upwards and inwards, then downwards and inwards, about half an inch in length, one half cartilaginous, the other osseous; it is lined by skin, beneath which are several ceruminous glands and has also a number of fine hairs; the cuticle is also continuous over the membrana tympani.

2. The middle ear or cavity of the tympanum; the outer wall is formed by the membrana tympani, which consists of three lamellae, one being proper to itself and of a fibrous structure, the others being tegumentary membranes reflected upon it and derived one from the skin and the other from the mucous lining of the tympanum. In the foetus it is an irregular oval, in the adult nearly circular. In the cavity are the malleus, stapes and incus, the tensor and laxator tympani; the laxator tympani minor and stapedius. In it are contained ten openings five large and five small.

The large openings are

Meatus auditorius

Fenestra ovalis
Fenestra rotunda
Mastoid cells
Eustachian tube.

The small openings are
Entrance of the chorda tympani
Exit of the chorda tympani
For laxator tympani
For tensor tympani
For stapedius.

3. The internal ear or labyrinth is divided into the vestibule, cochlea and semicircular canals.

The vestibule is the minute cavity contained between the fenestra ovalis, the cochlea and entrances of the semicircular canals. It is lined by a membranous expansion which contains the liquor Cotunnii. The openings into the vestibule are
Fenestra ovalis
Opening into the cochlea
Five openings of the semicircular canals
Aqueductus vestibuli
Opening for portio mollis.

The cochlea is a small osseous structure, resembling the shell of a snail, consisting twice and a half round a central axis, modiolus. The summit is called the cupola. The lamina spiralis is a thin plate winding round the

The portio mollis enters at the bottom of the meatus auditorius internus and is distributed to the vestibule and semicircular canals and partly to the cochlea.

axis and dividing the general cavity into two portions, scalae; one of these, scala vestibuli, communicates with the vestibule; the other, scala tympani, with the tympanum by means of the fenestra rotunda.
The semicircular canals three in number, two vertical and one horizontal, open by five orifices into the vestibule, the two vertical having a common foramen at one extremity; at their orifices are the ampullae or dilatations corresponding with the terminations of the auditory nerve & portio mollis.

The cerebral nerves are commonly divided into nine pair, because they leave the skull by nine foramina.

First pair or olfactory arises near the fissure of Sylvius by three roots, the outer and inner white, the middle grey, they unite and form a flattened triangular band, which runs forwards in a groove on the under surface of the cerebrum, where it is confined by the arachnoid and on the cribriform plate of the ethmoid bone forms a grey swelling, called the olfactory bulb, from which innumerable filaments descend to supply the septum nasi and mucous membrane on the superior spongy bone.

Second pair or optic arises from the corpora quadrigemina and corpora geniculata by a white flattened band called

The use of the decussation is probably to produce a consent between the corresponding points of the two retinae, so that there may be single vision with the two eyes.

the optic tract, which winds round the crus cerebri and clinoid process of the sphenoid bone and unite to form the optic commissure; they then diverge, pass through the optic foramen to the sclerotic and choroid coats of the eye and form the middle layer of the retina. Its neurylema is formed by the dura mater and the centre of the nerve is the arteria centralis retinae.

Third pair or motores oculorum arises from the inner edge of the crus cerebri near the Pons Varolii passes forwards along the cavernous sinus, then enters the orbit by the foramen lacerum orbitale and divides into two branches.

1. Superior, to levator palpebrae superioris and superior rectus.
2. Inferior, to inferior rectus, inferior oblique and internal rectus and sends a twig to the lenticular ganglion.

Fourth pair or pathetici, the smallest cerebral nerve arises from the Valve of Vieussens passes forwards along the cavernous sinus where it first lies below the third nerve but afterwards above it, pierces the dura mater at the edge of the tentorium, passes through foramen lacerum orbitale and is distributed to superior oblique muscle of the eye.

It is called the trifacial because it emerges upon the face by three different foramina.
The first division comes through the supraorbitar foramen
The second division comes through the infraorbitar foramen
The third division comes through the mental foramen.
and are all useful on the face as nerves of sensation, so if a man was paralized of his fifth nerve, he would lose common sensation over the whole face, also the peculiar sense of taste and the muscles of mastication would be paralysed.

Sixth pair or abducentes arises from the upper end of the corpus pyramidale near the pons Varolii, passes forwards along the cavernous sinus, through the foramen lacerum or basale to external rectus.

Fifth pair or trifacial arises by two roots a large sensual and a small motor root, which emerge together from the brain between the crus cerebelli and pons Varolii. If traced in the hardened brain, the sensual root rises from the corpus restiforme and the motor from the corpus pyramidale. They pass forwards to the point of the petrous bone where they pierce the dura mater and the sensual root forms a swelling, the Gasserian ganglion, from which come over three nerves called the three divisions of the fifth.

1. Opthalmic.
2. Superior maxillary
3. Inferior maxillary.

The motor root passes ~~through~~ under the ganglion without entering into it and joins the third division, which renders it a compound root of motion and sensation, but the two other roots are only for sensation.

The opthalmic nerve arises from the Gasserian ganglion, passes forwards along the cavernous sinus and divides into three branches supraorbitar, lachrymal and nasal, which seperately enter

It is the nerve of common sensation to the tip of the nose

the orbit by the foramen lacerum orbitale.
The supraorbital nerve passes along the upper part of the orbit on the levator palpabrae superioris and goes out by the supra orbitar foramen to ramify on the forehead as a nerve of sensation; it gives off in the orbit a branch called the supra trochlear, which supplies the conjunctiva at the inner canthus of the eye
The lachrymal passes along the upper and outer part of the orbit on the upper edge of the external rectus and supplies the lachrymal gland and conjunctiva of the outer canthus.
The nasal crosses over the optic nerve from the outer to the inner side, then passes through the anterior ethmoidal foramen into the nose, descends along the septum nasi to supply the skin and mucous membrane of the tip of the nose. It gives off in the orbit a twig to the lenticular ganglion and also the infratrochlear, which ramifies in the conjunctiva of the inner canthus.

The superior maxillary nerve arises from the gasserian ganglion passes forward through the foramen rotundum of the sphenoid bone, crosses the sphenomaxillary fossa enters infraorbitar canal and comes out at the infraorbitar foramen to ramify upon the face; while in the sphenomaxillary fossa it gives off two twigs to Meckel's ganglion and it also gives off the posterior and superior dental nerves to the teeth in the upper jaw.

The portio mollis is the nerve of hearing and the portio dura the nerve of motion to the face.

The inferior maxillary nerve is a compound nerve of motion and sensation, passes out of the skull by the foramen ovale and enters the Zygomatic fossa, where the motor root leaves it and subdivides to supply the five muscles of mastication, viz the temporal, two pterygoid, buccinator and masseter. The sentient part first gives off a small branch to the skin over the parotid gland, called the superficial temporal and then divides into the gustatory and inferior dental.
The gustatory passes downwards and forwards between the two pterygoid muscles, then along the outer surface of the hyoglossus and supplies the papillae filiformes of the tip and edges of the tongue and is joined for a short distance by the chorda tympani, which soon leaves it to join the submaxillary ganglion, which supplies the submaxillary and sublingual glands.
The inferior dental runs downwards and forwards enters the canal in the lower jaw, supplies all the teeth and sends a branch out through the mental foramen to ramify on the chin; before it enters the canal it gives off the mylohyoid branch to supply the mylohyoideus.

The seventh pair consists of two portions, the portio dura and the portio mollis.
The portio mollis arises from the calamus scriptorius which forms the floor of the fourth ventricle, on the upper

The highest muscle it supplies is the occipitofrontalis and the lowest the platysma.

surface of the medulla oblongata. It passes outwards to the meatus auditorius internus, where it is distributed to the vestibule, semicircular canals and cochlea of the internal ear.

The portio dura arises from the medulla oblongata, between the olivary and restiform bodies, it passes out in a groove of the portio mollis into the meatus auditorius internus; it then leaves the portio mollis and passes through a canal called the hiatus Fallopii, from which it comes out by the stylomastoid foramen. It then turns forwards across the external carotid artery and through the parotid gland and forms a great plexus called the pes anserinus, from which three sets of branches come off. Ascending, transverse and descending, which supply all the muscles of the face except those of mastication and anastamose with the three divisions of the fifth and the cervical plexus.

The eighth pair consists of three nerves. Glossopharyngeal, pneumogastric and spinal accessory.

The spinal accessory arises from the spinal chord as low as the third or fourth cervical vertebra, then ascends and enters the skull through the foramen magnum and passes out again by the foramen lacerum basis cranii posterius; then turns downwards and outwards and pierces the sterno-mastoid and supplies that muscle and the trapezius. It

If the pneumogastrics be divided, respiration would be impeded, deglutition would be impeded; the heart's action would become at half the usual rate and the animal would die asphyxiated and the bronchial tubes would be loaded with frothy mucus.

is thought to be useful to associate the sternomastoid and trapezius with the diaphragm in forced inspiration. It is called the superior external respiratory nerve.

The glossopharyngeal arises from the medulla oblongata and is a very small nerve; it passes out by the foramen lacerum basis cranii posterius, then passes downwards and forwards winding round the stylopharyngeus muscle and is distributed to the mucous membrane of the root of the tongue and muscles of the pharynx. And is useful to associate the movements of the pharynx with the impressions made upon the tongue and so to be the excitor nerve of the involuntary act of deglutition.

The pneumogastric arises from the medulla oblongata, between the olivary and restiform bodies, passes out by the foramen lacerum basis cranii posterius internal to the jugular vein, then descends in the neck enclosed in the carotid sheath, behind and between the carotid artery and internal jugular vein, enters the chest between the subclavian artery and vein, vein before and artery behind; passes behind the root of the lung and enters the posterior mediastinum, where it is connected to the oesophagus, passes through the diaphragm through the oesophageal opening and terminates on the stomach; the left nerve being in front and the right behind. On the right side it crosses at right angles the subclavian artery, but on the left it runs down parallel to the subclavian

The neighbouring nerves are the lingual, spinal accessory and sympathetic

artery. It gives off first, little twigs to join the neighbouring nerves, next the pharyngeal to the pharynx, then the superior laryngeal, which passes downwards and inwards pierces the thyrohyoidean membrane with the laryngeal artery to supply the mucous membrane of the larynx; then the cardiac to the heart, then the recurrent laryngeal, which on the right side winds round the subclavian artery but on the left under the arch of the aorta, then ascends in the neck in a groove on each side between the trachea and œsophagus, then passes in between the cricoid and thyroid cartilages to supply the muscles of the larynx; then the anterior pulmonary plexus to the forepart of the root of the lung; then the posterior pulmonary plexus to the back of the root of the lung; then the œsophageal plexus to the œsophagus and lastly, terminal branches to the stomach.

Ninth pair, lingual or hypoglossal arises from the medulla oblongata between the olivary and pyramidal bodies, goes out of the skull at the anterior condyloid foramen, then passes downwards and forwards with the digastricus and stylohyoideus across the external carotid artery, hooking round the root of the occipital artery, then passes along the surface of the hyoglossus and is distributed to the muscles of the tongue. It gives off

Descendens noni which passes down upon the sheath of

The depressor muscles are the sternohyoid, sternothyroid and omohyoid

the common carotid, forms a loop by joining a branch of the cervical plexus, from which filaments proceed to supply the depressor muscles of the larynx.

There are thirty one pairs of spinal nerves.
Eight cervical
Twelve dorsal
Five lumbar
Six sacral
They arise by two roots, the anterior for motion, the posterior for sensation. They pierce the theca by seperate openings then a ganglion is formed on the sentient root, after which the two nerves unite and form a compound nerves, which emerges from the intervertebral foramen and then divides into an anterior and a posterior branch; the anterior the largest to supply the parts in front of the spine and the posterior the smallest for the parts behind the spine.

The spinal plexuses are formed by interlacements of the anterior branches of the spinal nerves.
The 4 superior cervical nerves form the cervical plexus.
The 4 inferior cervical and first dorsal form the brachial plexus
The 11 lower dorsal are the intercostal
The 4 superior lumbar form the lumbar plexus.
The last lumbar and 4 superior sacral form the sacral plexus.

In the cauda equina, the ganglia on the posterior roots are formed before they leave the theca vertebralis.

The left phrenic nerve is longer than the right having to wind round the apex of the heart.
On the right side some filaments pierce the diaphragm and are distributed to the solar plexus.

The posterior branch of the second cervical is the largest and forms the occipitalis major nerve, which pierces the complexus and ascends with the occipital artery to be distributed on the posterior part of the head.

The cervical plexus lies on the side of the neck under the sternomastoid and gives off branches which are divided into the superficial and deep.

The superficial are divided into

1. Ascending ramify towards the ear and jaw and anastamose with the portio dura.
2. Descending are divided into the acromial and clavicular which ramify upon the shoulder

The deep are divided into

1. Muscular to neighbouring muscles.
2. Communicans noni arises from the second and third nerves and forms a loop with the descendens noni upon the sheath of the cervical vessels and sends off branches to supply the depressors of the larynx.
3. Phrenic is important because it supplies the diaphragm, which is the great muscle of inspiration. It arises from the third, fourth and fifth cervical nerves, but chiefly from the fourth, passes down on the scalenus anticus enters the chest between the subclavian artery and vein, passes through the middle mediastinum in front of the root of the

lung, between the pleura and pericardium and terminates at the diaphragm. It is accompanied through the chest by the comes nervi phrenici, a branch of the internal mammary artery.

The brachial plexus comes out between the scaleni at the side of the neck. The fifth and sixth nerves unite immediately, the seventh runs alone for a short distance the eighth and first dorsal unite immediately, after this they interlace one with the other in a most intricate manner. This plexus first accompanies the subclavian artery in the third part of its course lying posterior and superior to it; afterwards it accompanies the axillary artery lying at first posterior to but afterwards surrounds it. It divides into two sets of branches.

1. Superior to shoulder and chest.
2. Inferior to the arm.

The highest branch of the superior set.

1. The suprascapular nerve passes outwards along the clavicle under the ligament of the notch and supplies the supraspinatus and then under the acromion to the infraspinatus
2. Short thoracic branches to the pectoral muscles
3. Long thoracic or external respiratory, which passes down the inner wall of the axilla and supplies the serratus magnus
4. Subscapular, which supplies the muscles at the back of the axilla.

The inferior set give off.

1. Median commences by two heads, which embrace the axillary artery; lies at first on the outer side of the brachial artery, which it crosses about its middle and at the bend of the elbow lies to its inner side. It then passes between the two heads of the pronator radii teres and flexor sublimis and runs down the forearm between the flexor sublimis and profundus and beneath the annular ligament into the palm of the hand, where it terminates in five digital branches.
   α. muscular branches in the arm
   β. several branches to pronators and flexors
   γ. anterior interosseous, which accompanies the interosseous artery and supplies the pronator quadratus
   δ. cutaneous volae, given off just above the wrist and supplies the skin of the palm.
2. Ulnar nerve lies on the inner side of the arm, resting upon the inner ~~head~~ of the triceps in company with the inferior profunda artery, passes behind the internal condyle and between the two heads of the flexor carpi ulnaris; it then passes down the forearm with the ulnar artery lying to its inner side, crosses over the annular ligament and terminates in two branches, which are distributed to the ulnar side of the ~~forearm~~ little finger and between the little and ring fingers.
   α. muscular branches to triceps and ulnar flexors and

It is also called perforans Casserii

extensors of carpus

b. dorsalis ulnaris passes under the tendon of the flexor ulnaris to the dorsum of the hand and supplies two fingers and a half and communicates with the radial.

y. profunda ulnaris passes between the abductor and flexor minimi digiti accompanies the deep palmar arch and supplies the interossei.

3. Radiospiral is the largest branch of the brachial plexus; it winds round the shaft of the humerus in the spiral groove, in company with the superior profunda artery, lying between the bone and the triceps, it then appears in front of the arm about two inches above the outer condyle between the supinator longus and brachialis anticus and there gives off a large branch the posterior interosseous, which pierces the supinator brevis and supplies the extensors and supinators. The radiospiral or radial then accompanies the radial artery its upper two thirds lying to its outer side, at the lower third of the forearm it quits the artery and becomes cutaneous supplying the skin upon the back of the hand on the radial side.

4. External cutaneous, larger than the internal arises in common with the outer head of the median, passes downwards and outwards through the coracobrachialis under the biceps, then pierces the fascia, becomes cutaneous and supplies the skin on the outer side of the forearm as far as the wrist

At the bend of the elbow the internal cutaneous passes in front of the median basilic vein, whilst the external cutaneous nerve passes behind the median cephalic vein.

In disease of the breast, disease of the lung, angina pectoris the pain is felt down the inner side of the arm, which is explained through the intercostal humeral nerves.

5. Internal cutaneous passes down the inner side of the arm superficial to the brachial artery, then pierces the fascia and becomes cutaneous supplying the skin on the inner side of the arm.

6. Circumflex, winds round the head of the humerus and supplies the deltoid.

The nerves of Wrisberg two in number also called intercostal humeral arise from the second and third intercostal nerves, cross the axilla and supply the integument as far as the elbow.

Ammonia red book

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Potash got from wood ashes by lixiviation wood by burning leaving Carbon combined & Potash - Carbon derived from decomposition of woody fib & various acids which held Potash in solution &c (a nutritive salt of plants in Pot

Soda got from ashes of sea weeds (Barilla) by lixiviation being present for same reason as Soda

carburetted Hydrogen Gas & atmospheric air from 7 in damp (red book

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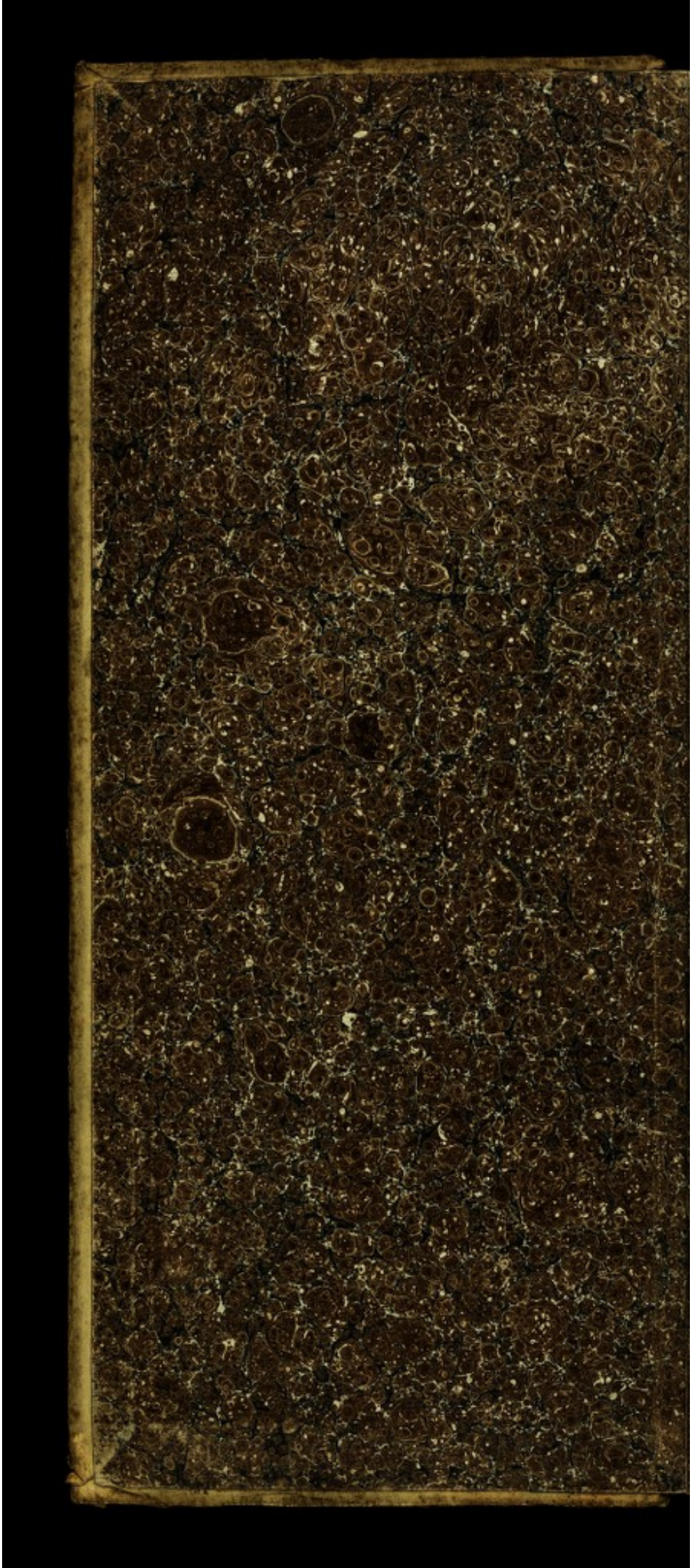
In cutting heat drives out the air; after to skin air contends by cooling + atmospheric help on forces in soft parts + blood

Guaiacum Gl stood
Burning ended about affecting Mr. as Emphysema
Burning Botany Bay
Surgery Chap 18 from 613 to 5-18
Version

How make Gt bolusyn B + Salifie
When use also in females
Pr who antim was made

How know composition of Cal + Hyd Bichloid
Treadmill contentment
Time of Accouch in P L
How make Exact Obst

MIDWIFERY.



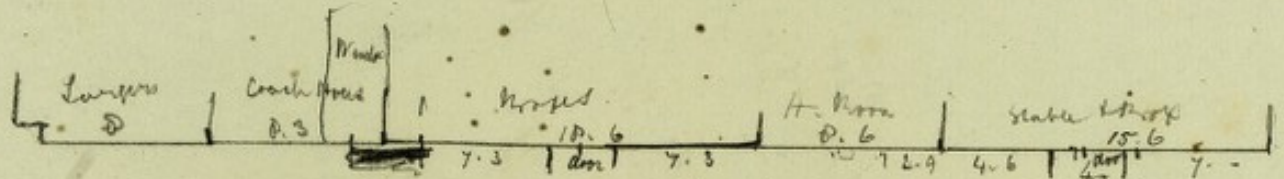
Old House 54 wide 60 deep

New kitchen 16 x 16 Back kitchen

Maria Rawyard
21 Rode Lane

RAMC 1933

Henry Wilkin
Surgeon
Walton
January 1st 1841.


Lumpers
D.
Coach House
D. 3
Window
Stores
10. 6
door
7. 3
7. 3
H. Room
D. 6
12. 9
Seaboy's Room
15. 6
4. 6
door
7. -

4. 3

2. 19
5.
4. 10. 6
1. 16. –
3. –
10. 6
2. 12. 6
1. –
15. 5. 6

9. 14
5. 6
1. 9. 6
1. 12. 6
2. 6
14.

F. W. Snow.

~~Woolwych~~

~~Mays Rickets Youngs~~

~~Manning Ennew Horne~~

Woolwych

Horne Youngs

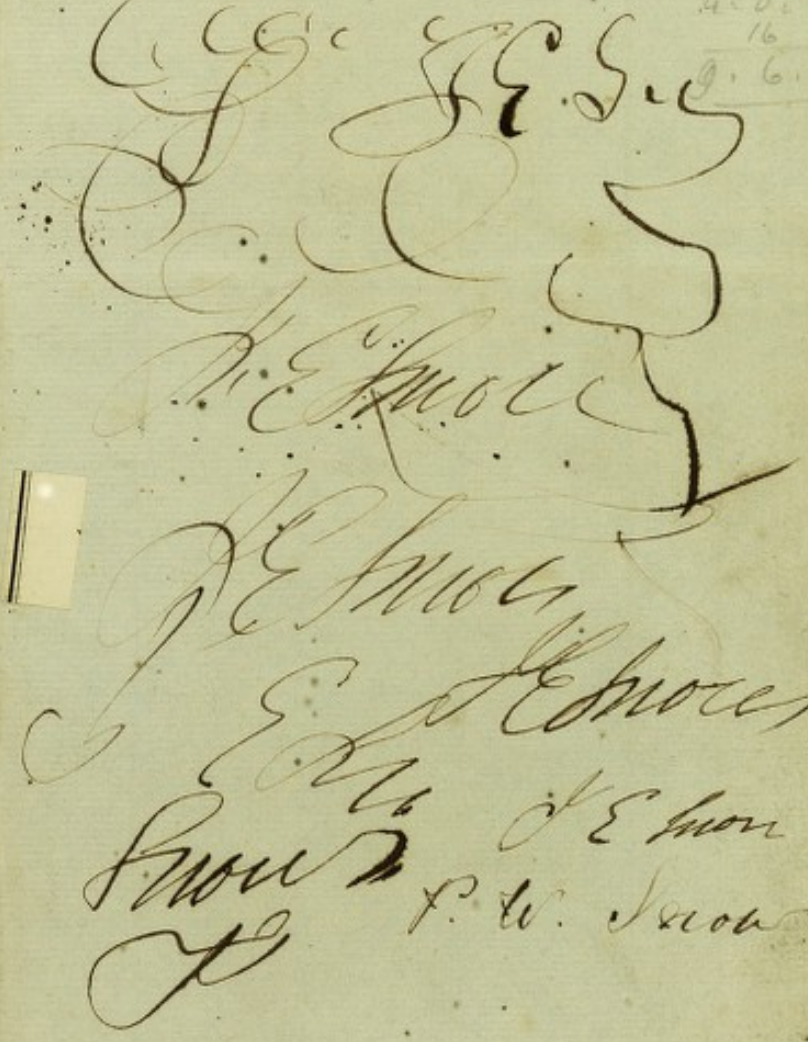
Rickets · Mays · Manning

Ennew Jackson Robinson

~~Stegglet~~ ~~Stoppes~~ Covers

Toppile

£ 10. 0
4. 0. 0
16
9. 6. 0



1841 January Cases

Mr Edwd. R. Edgar. P. Parsnage (E)
Queen Paid 2. 0. 0

Mr Wm Shuseley - Walton - (B)
Queen Mr. P. Att.

Mr Thos Mayo - Keiton - (B.)
Queen Mr. P. Att.

Mr Clatten - Walter Peatheis Sum - (E)
Queen 1. 1. 0

Mr Thos Barnard - Proctorship (M)
Queen Mr. P. Att.
Paid .10.

Mr Wm Crocker - Falkenham (E)
Queen Mr P. Att.
Paid .10.

1841 February £ s 8

Mrs Meaccalfe - practice £,
Over Mr. P. Atty.

Mrs Ansell Corporation Farm. Pitton
Over 1. 11. 6

Mrs Rt. Fosdyke - Falkenham £,
Over Mr. P. Atty
Paid .10. 6

Mrs John Studd - Walton £,
Over Mr. P. Atty

Mrs Green Pitton farm Ipswich £,
Over 1. 1. 0

Mrs Austin Trimley Lower F. £,
Over Mr. P. Atty 27/3/41

Mrs Glandfield Tr. Lower F. £,
Over Mr. P. Atty

Caroline Warner Trimley - £,
Over Mr. P. Atty

Mrs Wm Bevan Levington
Over Mr. P. Atty. £,
Paid .10. 6

1841 March £ s d

Mr. Wm. Churchman. Pimlico (2),
Over

Mr. Charles Wink. Walton Terrace (13),
Over Mr. P. Attd. –

Mr. John Barnard, Chacetts (13),
Over Mr. P. Attd
Paid .10.

Mr. John Pickin. Walton St. (13),
Over Mr. P. Attd

Mr. Samel Clow – Buckhurst (2),
Over Mr. P. Attd.

Mr. John Hammond – Falkham Dog Mr.
Over Mr. P. Attd

Mr. Nathl. Berry. Pimlico (2),
Over Mr. P. Attd
Paid .10.6

Mr. Edgar. Landguard Fort
Over Instrument &c – 1. 1. 0

1841 April £ s 8

Mr. Joshua Herring - Thaxton (B),
Over Mr. P. Acct
Paid . 10.

Mr. Samt. Rush Foxall (E),
Over Mr. S. Acct.

Mr. John Durrant Mill St. Pr. (E),
Over Mr. P. Acct.

Mr. Wm. Pewitt - Hertford (B),
Over Mr. P. Acct.
Paid . 10.

Mr. Geo. Last. Walton
Over 1. 11. 6
Paid -

Mr. Richd. Jennings Mill House Pr. (E),
Over Mr. P. Acct.

Mr. Edward Moseley - Walton (E),
Over Mr. P. Acct

Mr. Purtill Felixstow (B).
Over Mr. P. Acct.
Paid - . 10. 6

Mr. John Cook Mill St. Pr. late Liverpool
Over Mr. P. Acct.

Mr. Wm. Graucie Mr. Stewart Dr. Pr.
Over Mr. P. Acct.

1841 MAY 7 8 9

Mr. 13. Branch Bandsey Levy &c,
Over Mr. P. Att.

Mr. Mica Frost Bandsey Levy Sam (2),
Over

Paid .10.6

Mr. Finch Sprights Hall, 13,
Over

Mr. Wm. Rush Falkenham .13.
Over Mr. P. Att.

Mr. Gram Skinkey Shop 2,
Over

Mr. Jas Jolly. Falkenham
Over 7 months Child Mr. Ds.

1841 JUNE 2 & 3

Mrs Wm Bloomfield — Hurton (2)
Over Mr. P. Att.
Paid .10.6

Mrs John Pewitt m. Hardishop — Hurton (2)
Over Mr. P. Att.
Paid .10.6

Mrs Hurtle Trimley Mill (4)
Over Mr. P. Att. chief Mort 8th

Mrs Desborough Falkenham (2)
Over Mr. P. Att.
Paid .10.

Mrs. Charles Wright — Falkenham (2)
Over Mr. P. Att.

Mrs Hockley Croft House (2)
Over Mr. P. Att.
Paid .10.6

Mrs Perry Falkenham
Over Mr. P. Att.

1841 July

Mrs Samt. Plant - Walton 13,
Over Mr. P. Atto

Mrs Edwd. Smith (Whelwright), Walton
Over 1. 1. 0

Mrs Danl. Thurston, Shoemaker, Walton
Over Mr. P. Atto 1 1 0

Mrs Danl. Scarlett, Rimley Shearing Sheng,
Over Mr. P. Atto 1. 1. 0

Mr Nicl. Flynn Felixtow ~~2/6~~
Over 1. 11. 6

Mrs Coppin Whelwright P.P. ~~2/6~~
Over Mr. P. Atto 1. 1. 0

Mrs Jas Pooley P.P. Mill 13
Over 1. 1. 0

Mrs John Peake Felixtow 13
Over Mr. P. Atto

Mrs Ralph Levington 2.
Over Mr. P. Atto .10.
Paid

Mrs Peace Levington Shift 2,
Over Mr. P. Atto.

Mrs Edwd. Calver Walton Sh.
Over Mr. P. Atto
Paid .10. 6

1841 August

Mr. Ambrose Jennings. Miller. P.M.
Queen Mm. P. Att.

Mr. Rowndacre. Walton Ferry. Sc.
Queen Mm. P. Att.

Mr. Pedding Bawdsey Ferry. Sc.
left.

Mr. Jas. Manning. Walton. Sc.
Queen Mm. P. Att.

Mr. Geo. Dillistone Croft House L3.
Queen Mm. P. Att.
Paid .10.

Mr. Wm. Clewston. Bawdsey Ferry L3.
Queen Mm. P. Att.
Paid .10.6

Mr. Barnard Felixstowe L2.
Queen Mm. P. Att.

Mr. Stephen Crowe Levington. Sc.
Queen Mm. P. Att.
Paid .10.6

Mr. Danl. Warner M. P. Boot
Queen Mm. P. Att.
Paid .10.6

Mr. Gerling Walton
Queen Mm. P. Att.

Mr. Rust Nacton
Queen Mm. P. Att.
Paid .10.

1841 September

Mrs Wm Pring - Trinity Lane St. (2,
Over Mr. S. Atty.

Jennings Mrs Geo.. Trinity Garden (2,
Over Paid . 10.6

Mrs Thos Rust - Exacter 13
Over Mr. S. Atty.
Paid . 10.

Mrs Charles Wink . Buckles Lane 13
Mark. Esq

Mrs Jas Horne (Sobers) Walter St.
Over
Paid . 15.

Mrs Jas Pewitt . Falkenham St.
Over Mr. S. Atty.
Paid . 10.

Mrs John Page . Lower Trinity St.
Over Mr. S. Atty.
Paid . 10.6

Sarah Manning - Walter (2,
Over Mr. S. Atty.

Mrs Geo. Garnham Exacter
Over Not sent for
Game Mrs Brown 3/6 Paid 10.6

Mrs Buckle - Trinity late Cullum (2.
Over

Mrs Philip Denton - Preston (2,
Over Mr. S. Atty.
Paid . 10.6

1841 October

Mrs Jas Prince Kirton Greyhound (4)
Allen

Mrs Danl. Stone Felixstow (2)
Allen

Paid - . 10. 6

Mrs Wm Cowie opposite Mrs Ashurst Lane
Allen Mr. T. Att.

Mrs Marriott Kirton (2)
Allen

Type Mrs Wm Trimley (3)
Allen Mr. T. Att.

Mrs Broom Bawdsey Ferry (2)
Allen Mr. T. Att.

Mrs John Page Kirton (2)
Allen Mr. T. Att.

Mrs Jas Andrews Falkenham (2)
Allen Mr. T. Att.

1841 November

Mrs Rt. Francis - Walton Ferry &c,
Over Mr. S. &c.

Mrs Rt. Lancaster Swinley &c,
Over Mr. McCann &c.
Paid. 10.

Mrs Wm. Knights S.J. Mr. Green &c,
Over
Paid 10. 6

Mrs Geo. Rupford Chacton &c,
Over Mr. Macann

Mrs Sal. Westhorp - Kirton &c,
Over

Mrs Moor - Kirton School &c,
Over Mr. S. &c.

Mrs Hunting - Kirton Carpenter &c,
Over
Paid 10. 6

Mrs John Chenery Swinley,
Over Mr. S. &c.
Paid 10.

1841 December

Mrs Alderton - Preston £
Over from 5th 7 months Child
Paid 2. 0. 0

Mrs Wm Daniel - Buckinghamshire
Over
1. 11. 6

Mrs Herbert Proctor. £,
Over
1. 1. 0

Mrs Roberts Felixstow Cliff £,
Over
Paid . 10. 6

Mrs Danl Dickens & Ozall £,
Not Sentence - Over Mrs Woodcock &c.
(Sent 24th.) 10th day -

Mrs Jos Mersley Levington £,
Over Mr. Chacam Attn.

Mrs Howard Ipswich carpenter £,
Over
1. 1. 0

Mrs Wm Murrell Ipswich £,
Over Mr. Chacam Attn
Paid . 10. 6

Mrs Jacob Giles Ipswich £,
Over
Paid . 10. 6

Mrs Wm Reeves Falkenham £,
Over
Paid . 10. 6

Mrs Wm Watts. Bawdsey Ferry £,
Over Mr. Chacam Attn.
Paid . 10. 6

1841 December Brought Forward

Mr. Potter Lexington &c,
Rec. Mr. Chacam Attd.
Paid .10.

Mr. Abraham Giles Pembroke &c,
Rec. Mr. Chacam Attd.

108

1842 January — £ s d

Rev. Wm. Last Rimley (B),
Over 1. 11. 6

Rev. Geo. ab Dobree Felixstow (B),
Over Mr. Shacam &c. Paid .10. 6

Rev. Burch Edzall (E)
Over (2nd mark)

Rev. Edgell — Mactor Rectory
Over Paid — 5. 0. 0

Rev. Jas Fry att. Mr. Peach. Buckleshm (E)
Over Mr. Shacam Att.? Paid .10.

Rev. Hall — Swingfield
Over Mr. Shacam Att.?

Rev. Stud — Walton (E)
Over Mr. Shacam Att.?

Rev. Capt. Watson. Walton (E)
March 27th Over Mr. Shacam att.?

Rev. Wm. Warren Rimley Lower (E)
Over Mr. Shacam Att.?

Rev. Wm. Parker (Ancaster) Rimley (E)
Over 1. 1. 0

Rev. Steven Paine, Chacton
Over Mr. Shacam att.?

1842 February 2 & 2

Mr. Cordy. Trinity (B)
Rec'd 1. 11. 6

Mrs. Jas Ellis Burton - (L)
Allen Mr. Macan Att.
Paid .10.

Mrs Charles Wink - Walton Ferry (L)
Allen Mr. Macan Att.

Mrs Thos Dodgke - Falkenham (L)
Allen
Paid .10.6

Mrs Hayes - Walton (L)
Allen Mr. Macan Att.

Mrs Jewitt - Falkenham P.C.(B)
Allen

Mrs Mendale - Bawdsey Ferry (L)
Allen Mr. Macan Att.
Paid .10.

Mrs Williams 2. Town. Wadgate (L)
Allen
Paid .10.6

Mrs Newson - Walton (L)
Allen

Mrs Stollery Cowpastures - Walton (L)
Allen
Paid .10.6

Mrs Thos Watts - Bawdsey Ferry (L)
Allen Mr. Macan Att. Paid .10.

Mrs Sarah Cowie Trinity (L)
Allen Mr. Macan Att.

1842 March £ s d

Mr. Garrod - Foxall, E,
Ober

Mr. Hames - Lewiston Farm, B,
Ober 1. 1. 0

Mr. Hy. Alexander - Pd Mill &c. B,
Ober M. Chacam Att.

Mr. Snell - Bandsey Ferry E,
Ober Mr. Chacam Att.
Paid .10.

Mr. Charles Noble - Walton E,
Ober Mr. Chacam Att.

Mr. Saml. Calver - Ferriby E,
Ober Mr. Chacam Att.

Mr. Jas. Green - Blacksmith, Ferriby, E,
Ober

Mr. Randall - Ferriby B,
Ober

Mr. Hy. Oakley - Felixkirk E,
Ober Mr. Chacam Att.

Mr. Stephen Glandfield Mill &c. B,
Ober Mr. Chacam Att.

Mr. Geo. Dillistone - Lewiston, B,
Ober not sent for,

1842 April

Mrs Joseph Mallett. S.P. Pilgrim Church B.
Recr Mr Shacam Attd

Mrs Wm Shrecham Swinley B,
Recr 1. 1. 0

Mrs R. Knight. Sevington E,
Recr Mr. Bonnen Attd

Mrs Bloomfield Dr. Falkenham E,
Recr Mr. Shacam Attd
Paid . 10. 6

Mrs Edwd Watts Bandsey Ferry E,
Recr

Mrs John Studd Swr. Walton E,
Recr

Mrs Isaac Finch S.P. Lower St. B,
Recr Mr. Shacam Attd

Mrs Thos Chapman Walton B,
Recr Mr. Bonnen Attd

Mrs J. Chapman Falkenham E,
Recr Mr. Bonnen Attd

Mr. Hazell's Daughter Shrewbm E,
Recr

Mrs Wm Fulcher. Walton E,
Recr

Mrs Collins. Swinley Lower St. B
Recr Mr. Shacam Attd.

1842 May

Mrs Hy. Garrod. Buckshaw (2),
Ollen 1. 11. 6

Mrs John Cook Sewingston (2),
late East End — Ollen
Paid — 1. 0. 0

Mrs R. M. Page Swen Walton 2 Cards
Ollen 1. 11. 6

Mrs Danl Smith (ie Lewis &c.) East End
Ollen

Mrs Rt. Watts — Baudsey Ferry (2),
Ollen Mr. B — Attd
Paid 10. 6

Mrs John Barker Swen Walton (2),
Ollen Mr. Bonner Attd

Mrs Thos Jepson — Rokeston (2),
Ollen Mr. Bonner Attd
Paid 10. 6

Mrs Jas Spaull — Stractan (2),
Ollen Mr. B — Attd

1842 June 2 3

Mrs Pizey — Reinley (B,
Over

Paid
Mrs Dane Brown Reinley (Sh,
Twin 7 Month. Girls.

Mrs Jennifer. Walter; B.
Over Mr. Bonnell &c.

Mrs Jas Newman Millst. N.J. Sh,
Over Mr. Bonnell &c.

Mrs Wm Pearce Reinley (R,
Over

Mrs Geo. Spaulding Reinley,
Over abortive 7 months.
— Mr. Bonnell &c.

1842 July

Mr. Abbott. Walter Farn- Leicestr -
Rec'd 1. 1. 0

Mr. Geo. Last - Walter 2nd mark
Rec'd 1. 11. 6

Mr. Jas Gricestr - exactn (3,
Rec'd Mr. Bonner Alc
Paid . 10. 6

Mr. John Gran Surr. Wm Green Stanley
Rec'd 3,
Paid . 10. 6

Mr. Pooley Stanley Nicc 2,
Rec'd 1. 1. 0

Mr. Jas Cuvic. Dr. Securyton 2,
Rec'd Paid . 10. 6

Mr. Wm Smith Wm. Felixtun Church 2
Rec'd

Mr. Barrett - Bandsey Derys 2,
Rec'd Mr. Bonner Alc.

Mr. Jas Gran Securyton (2)
Rec'd Mr. Bonner Alc.

Mr. Wm Harmen Wm. Wood Stanley
Rec'd

1842 August

Mrs Weightman. Blacksmith Walton E,
Oven

Mrs Hy Chevson Bawsey Norf. B,
Rec. Mr. Sedgate Atto
Ni first Call Jack

Mrs James Tinsley Boot Sm. B,
Oven. Mr. B. Atto

Mrs Dawe Warren Tinsley
Oven

Said .10.

1842 September

Mr. John Perkey Walter E,
Queen Mr. B. Attc.

Mr. Graham Tinsley Shop &c.
Queen

Mr. John Cook - Leicester E,
Queen Mr Lendgate

Mr. Pt. Glandfield T. Lincoln E
Queen Mr. Ludgate Atto. at Mr. 23d

Mr. Enders - Fleet E,
Queen 1. 1. 0

Mr. Charles Wright Fleet E,
Queen Mr. Ludgate Attc.

Mr. Edwd. Mansely - Walter E,
Queen Mr. Ludgate Attc.

Mr. Samel. Topple Tinsley E,
Queen Mr. Ludgate Attc.
Paid 10. 6

Mr. Fleetwood Tinsley
Abortive Committee Queen

1842 October

Mr. Rupp Rdr. Halfway Inn Chapel
Oder not seen Qr

Mr. Taylor. Walton Chap. 1/2,
Order 1. 1. 0
Paid

Mr. Flower Banbury Penny B.
Order Mr. Ludgate Atto
Paid. 10. 6

Mr. Newsom. Banbury Penny B.
Order

Mr. Scattle Baldwin Walton. B.
Order Mr Ludgate Atto.

Mr. John Rattle - Walton
Order

Mr. Weatherstone Kirton B
Order Mr. Ludgate Atto.

1842 November

Mr. Wink Walter Ferry
Recd Mr. Ludgate Attd

Mr. Jas Alderton - Walter Ferry P.
Recd Mr. Ludgate Attd

Mr. Abraham Plant - Swanley
Recd Mr. Ludgate Attd

Mr. Douglas Landguard Fort
Recd Mr. Ludgate Attd
Paid 1. 0. 0

Mr. R. Glandfield Swanley Howe
Recd Order Expn

Mr. Wm Austin Swanley
Recd Mr. & Paid Attd. 10. 6

Mr. Pound acct. Walter Ferry
Recd Mr. Ludgate Attd

Mr. John Butcher Swanley
Recd Mr. Ludgate Attd

Mr. Timy Jennings P. Inn Fr.
Recd Mr. Ludgate Attd

Mr. Howard (carpenter) Swanley
Recd
Paid

1842 December

Mr. John Durrant - Trinity Mill
Ders —

Mr. Gram Felixtow Thos E.
Ders Mr. Ludgate Attd —

Mr. John Finch Trinity house St.
Ders Mr. Ludgate Attd —

Mr. Thos Smith - Falkenham E.
Ders —

Mr. Wm Crickson Falkenham E.
Ders —

Paid . 10. 6
Mr. Jas Warner. Watton. Mr. Barnes
Ders —

Mr. Wm Smith Sobey Trinity
Ders Gemini Museum
(Took 7 months) —

1843 January £ s d

Mr. Lt. Pacifical Bandsey Derby Sc.
Recn

Mr. Geo. Cook Livingston (B.)
Recn Mr. Ludgate Attd.

Mr. Aaron Durrant Trinity (E.)
Recn Mr. Ludgate Attd.

Mr. Hunting (Carpenter) Kirton
Recn Mr. Ludgate Attd.

Mrs. Ansell Corporation Farm Kirton (E.)
Recn

1. 11. 6 (B.)

Mr. B. Chapman Sandgate (Kent)
Recn Contribution 0 0 0

Mr. John Fenn Trinity (E.)
Recn Mr. Ludgate Attd.

Mr. Ramsey Halfway House Copenhagen
Recn Mr. Ludgate Attd.

Paid 10

Mr. Wm. Moseley (Thatcher) Chatham
Recn Mr. Ludgate Attd.

Mr. Uttridge Falkenham (B.)
Recn Mr. Ludgate Attd.

Mr. Farnham Chaston (E.)
Recn (Not sent for)

1843 February £ s d

Mr. Chatten. Feather Sm. Walton
Oden 1. 1. 0 (3),

Mr. Danl. Lee. Walton £,
Oden

Mr. John Lancaster. Walton £,
Oden Mr. Ludgate Attd.

Paid 10.

Mr. Roberts. Dickson Tap
Oden Mr. Ludgate Attd.

Mr. Hannard. Falkenham £3,
Oden Mr. Ludgate Attd. —

Mr. Thos Barnard chactn £,
Oden Mr. Ludgate Attd.

Mr. Macaulay chactn £,
Oden Mr. Ludgate Attd.

Mr. John Lancaster Twinly Merit. £1
Oden Mr. Ludgate Attd.

Mr. John Hannard Falkenham
Oden Mr. Ludgate Attd.

1843 March £ s 8

Mr. Tuttle — Felixstow High Sheriff
Defr Mr. Ludgate Attd.
Paid 10 6

Mr. Chapman Levington Gamekeeper £
Defr Mr. Ludgate Attd.
The last case before left

Mr. Alderton Shacton £,
Defr Mr. Ludgate Attd.

Mr. Denny Walton Hall £,
Defr

Mr. John Dummett Mr. Pistor Grayshead
Defr Mr. Ludgate Attd.

Mr. William Durrant Sweeting Lane Walton
Defr Mr. Jones Attd.

Mr. William Green (Eagle Yard Trimley,
Defr Mr. Jones Attd.

Mr. William Barham Dallenham £,
Defr Mr. Jones Attd.

1843 April £ 18

Mr. Geo. Jennings Trinity Garden £,
Clerk
Paid 10. 6

Mr. Wm. Goad Trinity £,
Clerk

Mr. Symonds, Major Walker Lodge Swingfield
Clerk

Mr. Wm. Green late Covenant Farm Mill &c. Kent
Clerk Mr. Sudgate Attd.

Mr. E. R. Edgar Trinity Passage £,
Clerk
Paid 2. 0. 0

Mr. John Smith Proctor £,
Clerk Mr. Jones Attd.

Mr. Wm. Brown Proctor £,
Clerk Mr. Jones Attd.

1843 May £ s

Mr. Miller - Proctor, Blacksmith. £,
Recd

Paid .15.

Mr. Th. Durrant - Walton
Recd

Mr. Oddy - Walton
Recd Paid 1. 1. 0

Mr. John Shallett - T. £,
Recd

Mr. Geo. Cook - Proctor Clerk £,
Recd Mr. Iden Att.

Mr. Giles - Rainby. £,
Recd Mr. Iden Att.

Mr. Ishmael Ellis Walton, £
Recd Mr. Iden Att.

Mr. Thos. Durrant. Scientific Law Walton
Recd Mr. Iden Att.

Mr. Hamer Lavington Farm
May 12th. Martin

1843 June £ 19

Mr. Markham Sevington £,
Recr Mr. Isaac Atty

Mr. Farthing Dr. Harris Sevington £,
Recr Mr. Isaac Atty

Mr. Ld Poyatt Mr. Read Buckleham.
Recr Mr. Isaac Atty
Paid 10.

Mr. Thos. Knights. Tunbridge £,
Recr Mr. Isaac Atty.

Mr. Buckle Tunbridge £,
Recr

Mr. Thos Sampson Felixstow £,
Recr Mr. Isaac Atty

Mr. Dillistone Markhouse £,
Recr Mr. Isaac Atty

Mr. Topple Tunbridge £,
Recr Mr. Isaac Atty

1843 July £ s d

Mr. R. A. Page - Lower Walton (3,
Rect

Mrs Harriett Hunter - Latchmere
Rect

Mr Charles Pearse Sevington Shipton (M)
Rect Mr. Sheriff

Mr Fordyce - Falkenham -
Rect Mr. Sheriff

Paid . 10. 6

Mr. Pizey. Hunton (E),
Rect

Mr. R. Connell - Exactor (E),
Rect

Paid . 10. 6

1843 August Term

Mr. Jas Rives - Victor Greyhound
Ques

Mr. Hy Gwinn - Habeas Emendate
Rec. Mr. Shaw Atty.
Pend. 10.6

Mr. Jno Fisk vs. Tinsley Booth
Ques Mr. Sorsby Atty.

Mr. Jas Tooley Tinsley Hill
Ques

1843 September £ s d

Mr. D. Scallett - Trinity Lathmink Shannon
Ulen

Mr. Jn. Watts Bandon Fury £,
Ulen Mr. Jones Att.

Mr. Jas Peirce - Falkenham
Ulen Mr. Jones Att.
Paid .10.

Mr. Girling - Walton -
Abstr. Turin,
Mr. Jones Att.

1843 October £ 18.

Mr. Wm. Lister. Trimley - quit mark
Recd. Oct. 23. about 6 months before time.

Mr. Dawson Mill &c. Trimley
Recd

Mr. Michael Stollery - Falkenham (Ag)
Recd Mr. Sam Att.

Mr. Wm. Watts - Bandsey Farm
Recd 20 September

Mr. John Richer. Walton.
Recd

1843 November £ s 8

Mr. Ruffles - Falkenham B.
Oct. 27th Rec'd Mr. Iron Attd.

Mr. Thos. Fijam Felixtow Sc,
Rec'd (twin Sons) Oct.

Mr. Edgell - Shacton Rectory Sc,
Rec'd Oct. 25th -
Paid 5. 0. 0

Mr. R. Francis - Walton Ferry Sh.
Rec'd Mr. Smith Attd.

Mr. Cook Levington
Rec'd Mr. Iron Attd.

Mr. Burton Bawn - T. Lower Sh.
Rec'd Mr. Smith Attd.

Mr. John Page. Ritson E,
Rec'd Mr. Smith Attd.

Mr. Charles Scutter. Levington E,
Rec'd

1843 December — 7 of 8

Mr. Stone Isaben Walter £,
Rec'r

Mr. Phibbs - Landguard Fort £,
Rec'r Mr. Smith Att.
Paid 1.0.0

Mr. Sam'l Mark. Walter £,
Rec'r Mr. Smith Att.

Mr. Thos Ellis Ferita £,
Rec'r Paid .10.6

Mr. Goram Felixtow Ferry £,
Rec'r 4 Oct. 15th about 8 months

Mr. Bell - Bawdsey Ferry £,
Rec'r Mr. Smith Att.

Mr. Henry Alexander Trimley £,
Rec'r Mr. Smith Att.

Mr. Thos Watts - Bawdsey Ferry £,
Rec'r Mr. Smith Att.
Paid .10.6

Mr. R. Gardner Falkenham £,
Rec'r Mr. Smith Att.

1844 January — £ s d

Mr. Edwd. Smith Wheelwright Walton
Rec.

Mr. Thos. Cooper Blacksmith, Falkham (£)
Rec. Mr. Smith Atte. —

Mr. Barber Dr. Lower Walton (Mr.)
Rec. Mr. Smith Atte.

Mr. Parish Landguard Fort — £
Rec. Mr. Smith Atte.
Paid 10. 6

Mr. Smithgate Walton (£)
Rec. Mr. Smith Atte.

Mr. Bloom — Bawdsey Ferry
Rec. Mr. Smith Atte.
Paid 10. 6

Mr. Kirby — Buckleshan Farm £
Rec. 1 1 0

Mr. Burch Foxhall Farm £.
Rec. Mr. Smith Atte.

Mr. Glanfield Trimley South £
Rec. Mr. Smith Atte.

Mr. Andrew — Falkenham
Rec. Mr. Smith Atte.

1844 February 5 & 8

Mr. Joshua Herring - Practr.
Def. Mr. Blunt Att.

Mr. Alderton - Tiverton (B,
Def. (Jonathan Mitchell)
Paid 2. 0. 0

Mr. James - Tiverton Boot E,
Def. Mr. Smith Att.

Mr. Geo. Dillistone - Sowerby E,
Def. Mr. Smith Att.

Mr. Isaac - Mr. Daniel Sage Buckfastleigh
Def.

Mr. R. Gardner in Bloomfield D. Dalkinham
Def. Mr. Smith Att. -

Mr. Jas. Ralph Sowerby Fell Sc.
Def. Mr. Smith Att.

Mr. Geo. Shaw Tiverton E,
Def. Mr. Smith Att.

Mr. Geo. Rutford - Practr. E,
Def.

Mr. R. Pasiful Bandsey Devon E,
Def.

Mr. Williamson - Sandquandt E,
Def. Mr. Smith Att.

1844 March 4 & 8

Mr. Skipper Falkenham B. 3d Pt
Rec. Smith Att.

Mr. Plant - Walton B.
Rec. Mr. Smith Att. Sent Wharncliffe

Mr. Jas. Shanning Walton B.
Rec.

Mr. Stead Walton St. B.
Rec. Mr. Smith Att.

Mr. Baker Lower Walton B.
Rec. Mr. Smith Att.

Mr. Catt Lower Walton B.
Rec. Mr. Smith Att.

Murrell Mr. Trimley Suff. B.

Mr. Iger. Ricth - B.
Mr. Smith Att. Rec.

Mr. Farr Levington - B.
Rec. Mr. Smith Att.

Mr. Wm. Newson - Bawdsey Ferry
Rec. Mr. Smith Att.

Mr. Alice Rush Bawdsey Ferry
Rec. Mr. Smith Att. Paid .10.6

1844 April 2 & 3

Mr. John Hall Solicitor &c,
Rec.

Mr. Wm. Churchman Trinity - (B,
Rec.

Mr. R. Smith Lower Walton
Rec. Mr. Smith Att.

Mr. Alderton - Walton Ferry
Rec. Mr. Smith Att.

Mr. Jas. Westhorp - Rector &c,
Rec. Mr. Smith Att.

Mr. Wm. Chenery Trinity Ribbon &c,
Rec. Mr. Smith Att.

Mr. Ramsey Halfway House Proctor (R)
Rec. Mr. Smith Att.
Paid 10. 6

Mr. Wm. Warner Trinity Lower St.
Rec. Mr. Smith Att.

Mr. Rush at Mr. Page's Penn
Lexington
Mr. Smith waited from 10 hour
She was confined 20 hours after she left her husband
Not send as she was so quick & likely
on Right Month Child -
Rec.

Mr. Wm. Smith Isleham, Trinity -
Rec.

1844 May £ s d

Mr. Howard Carpenter, Ruinley
Rect. April 23rd.

Mr. Osborn Foxhall 13,
Rect. Mr. Smith Attd.

Mr. Brown Daughter. Sevington
Rect. Mr. Smith Attd.
Paid . 10. 6

Mr. Rt. Watts - Bandsey Ferry 2,
Rect. Mr. Smith Attd.

Mr. Stephn Glanfield Tenterden 2,
Rect. Mr. Smith Attd.
Paid . 10. 6

Mr. Randall - Ruitn 2,
Rect. Mr. Smith Attd.

Miss Riches - Union House
Rect. Mr. Smith Attd. 1. 0. 0

Mr. Hearn Ashford
Rect. Mr. Smith Attd.

1844 June — 8

Mr. Weightman - Walter B,
Clerk

Mr. Gracette Master
Robt M. Smith Atty.

1844 July — £ s d

Mr. Wm. Parker Dundee £
Rec

Mr. Oakley Edinburgh
Rec

Mr. Jessop Edinburgh
Rec Mr. Smith Act.

Paid .10.
Mr. Wm. Cockburn Dalkeith Sq.
Rec

Paid .10.
Mr. Stephen Carr Jerusalem Pr.
Rec Mr. Smith Act.

Mr. Penny — Malta Sail £
left for France — —

Mr. Davd. Hudson (Aberdeen) Printer
Rec (8 months) —

Mr. Geo. Macandrew Edinburgh
(Arrears 7 months) —

1844 August £ s d

Mr. John Francis - Walton Ferry
Debtor Mr. Smith Attorney -

Mr. Thos Henry Newsom - Bawtry Ferry
Debtor Mr. Smith Attorney
Paid .10.6

Mr. Benjn. Cooper. Buckenham
Debtor 1. 11. 6

Mr. Weisgleworth. (Painter) Walton
Debtor 1. 1. 0

— September —

Mr. Wm. Daniels - Buckenham
Debtor 1. 11. 6

Borrett Mary - Union House
Debtor Mr. Smith Attorney 1. 0. 0
Paid by Mr. Moulton -

1844 September 2 & 3

Mr. Lash. Tewkesbury &c.
Recd (8 months Child) - 1. 11. 6

Mr. Harris Tewkesbury &c.
Recd 1. 1. 0

Mr. Wm. Smith Pebworth
Recd

Mr. Wm. Studd Inner Walton &c.
Recd Mr. Smith Attd.

Mr. Thos. Price Farmington, Tewkesbury
Recd 1. 1. 0

Mr. Wm. Smith Inner Walton Gardener &c.
Recd Mr. Smith Attd.

Mr. Wm. Newsom Bamsey Ferry &c.
Recd Mr. Smith Attd.
Paid " 10..

Mr. Edward Staverley. Walton &c.
Recd Mr. Smith Attd.

Mr. Joseph Shallett Tewkesbury
Recd Mr. Smith Attd.

Mr. John Leach Tewkesbury &c.
Recd Mr. Smith Attd.

Mr. Daniel Green. Pebworth
Recd 1. 1. 0

1844 October £ s d

Mr. Cordy - Kinsley 4 members first month
Rec'd Paid 1. 11. 6

Mr. R. A. Page - Lewiston 3d month
Rec'd Paid 1. 11. 6

Mr. Thos. Mink Walter Perry
Rec'd Mr. Smith att'y

Mr. Matt. Baldwin - Walter &
Rec'd Mr. Smith att'y

Mr. Haskell Union office Porter
Rec'd - Paid 1. 1. 0

Mr. R. Lancaster Mill &c. Penn 8,
Rec'd Mr. Smith att'y

Mr. Saml. Huntsman Porter
Rec'd

Mr. Wm. Vesey - Walter
Rec'd

Paid . 10. 6

1844 November 29

Mr. Oddy. Walter E.
Rent Paid 1. 1. 0

Mr. Thos Smith Porter Carpenter.
Rent Mr. Smith acct

Baxter Anne Executrix Russell
Mr. Smith acct — 1. 0. 0
Paid

Mrs Blow Executrix
Perin Mr. Smith acct with
Mrs. Stephen Blow Widow — 1. 0. 0
Paid

1844 December 28

Mr. John Pipe Debtor.
Dr. 1st Rect. Paid — 1. 11. 6

Mr. Edwd. Watts. Bandsey Levy, Tb,
Rect. Mr. Smith Att.

Mr. Jas. Pewtt. Kirton Sale
Rect. Mr. Smith Att.

Mr. Pinnduan Walton Levy
Rect. Mr. Smith Att. Do.

Mr. Jas. Pierce — Kirton Greyhound
Rect. Mr. Smith Att. £,

Mr. Thos. Pring Debtor Lawn At. £,
Rect. Mr. Smith Att.

Mr. Durrant Ninsley Sale £,
Rect. Mr. Smith Att. twice

Mr. Graun Debtor Ten Sheep,
Rect. Mr. Smith Att. 1. 1. 0

Mr. Jas. Tooley Ninsley Sale £,
Rect. 1. 1. 0

Mr. Ashridge — Balkinham £,
Rect. Mr. Smith Att.

Mr. Penn — Buckinham Sa,
Rect. (Eyhen Attendance —) 1. 1. 0

1845 January — £ s d

Mr. Ishmael Ellis — Walton — B,
Rect. Paid — 10. 6
Mr. Smith Attd.

Mr. Jas Newman — Ty Hill — B.
Rect. Mr. Smith Attd.

Mr. Edgell — Master Rectory (2),
Rect. Paid fee 5. 0. 0

Mr. R. Gardner — Tattenham
Rect. Mr. Smith Attd. Smith Part. Purchase

Mr. R. Papineau Rebiston Seen
Rect.

Mr. Jas Ellis — Shoemaker Walton
Rect.

Mr. McCaulin — Sandy mead Gate
Rect. Turin Mr. Smith Attd.
1. 1. 0

1845 February E & S

Ad. Wm. Shaw Plaintiff Wm. Blackstock Jr. Defendant

Ad. Jas. Gaston Shaw & Shaw

Defendant Mr. Hodge Att. Ingersoll Case

Ad. Wm. Rush — Falkinburg & Co.

Defendant Mr. Hodge Att.

1845 March 1st

Mr. Miller - Blacksmith, Master 73,
Clerk was sent for Slight Sick to Change fee

Mr. Palmer - Butcher Master 73,
Clerk

Mr. Jas Stewart - Innholder (E),
Clerk Mr. Hodge Att.

Mr. John Prance - Maltster Surry (E),
Clerk

Mrs. Sam. Topple Maltster (73),
Clerk Mr. Hodge Att.

Mr. Thos Durrant - Maltster (E),
Clerk Mr. Hodge Att.

1845 April — £ s d

Mrs Fullan Daughter Practice £,
Clerk Mr. Rodyer Attd. consultation,
was taken from Thursday the 9th to Sunday 13th.

Mrs Jas Tryatt Buckingham £,
Clerk Mr. Rodyer Attd
Paid 10.

Mrs Edwd. Fenn Walter 73.
Clerk Mr. Greenwood Attd. (Bl. Lane)

Mrs Geo. Howard Brierley
Clerk was taken in labour
was up Sunday & Monday night. & Mr
Rodyer on Tuesday night. was confined on
Wednesday at 8 o'clock Child Still Born
& Buried. Mrs Jones probably dead a week

Mary Ann Sherwood Practice
Sent for 6 o'clock on Sunday 13th & Attd
till she on Monday from retention Placenta
Mr. Rodyer Attd. Dr. Edmund Placenta

1. 0. 0

1845 May — £ s d

Mr. Scullard Balsham Chapel
Rect 1. 14. 6

Mr. Ansell Corporation Farm Knitsley
Rect 1. 11. 6

Mr. P. Feuton Knitsley & Shotmanken
Rect

Mr. Danl. Dickenson Mr. Pindar Farm Fotrell
Rect Mr. Wilkin Att.

Mr. Thos. Sharp Walter &
Rect Mr. Rodger Att.

Mr. Wm. Graham & Mr. Stewart Dr. &
Rect Mr. Parr Att. &

Mr. Geo. Cook Lanchester &
Rect Mr. Rodger Att.

1845 June — £ 8

Mr. John Lancaster — Walter —
Rec. Mr. Parr Atty.

Mr. R. Smith — Lewis Walter Esq.
Rec. Mr. Parr Atty.

Mr. Henry Proctor Esq.
Rec. Mr. Bloss Atty.

1845 July — 7 of 8

Mr. Howell — Falkenham Road
Pltf. Mr. McCosh Attd.

Mr. Thos Fordyke. Falkenham 2,
Pltf. Mr. Beadle Attd.

Mr. Thurston. Gratton 2,
Pltf. Mr. Shelton Attd.

Mr. Thos Smith Ramsey Pltf.
Mr. Beadle Attd.
Pltf.

1845 August

Mr. Geo. Cash – Walton E,
Clerk 1. 11. 6

Mr. Wm. Gore. Reading E,
Clerk Mr. McCash Attd.

Mr. Wm. Newson Standon Dep E,
Clerk Mr. McCash Attd.

Mr. Branch Walton E,
Clerk

Mr. Gilbey – Fisherman Walton
Clerk Mr. McCash attd. turn

Scarlett Sarah Ann – House
Servant Macnutt 6 hours
Mr. Walton Attd. 1. 0. 0

Mr. Benjn. Cooper – Buckingham
Clerk 1. 11. 6

1845 September 2 & 3

Ferris Mrs. _ Bandon Dep
Rec. Mr. McCosh Atty

Mrs. Danl. Gardner. _ Rents &c
Rec. Mr. McCosh Atty

Mrs. Hodgins ad Claim Rents &c
Rec. Mr. McCosh Atty

Bird Mary Ann _ Rents
Rec. Mr. McCosh Atty 7. 0. 0

1845 October £ s d

Mr. Lewis Malton Bill £,
Rec.

Mr. Wm. Newsham Tailor £,
Rec. 1. 1. 0

Mr. Jas. Ellis - Kirton £,
Rec. Mr. Rec. Cook Atto.

Mr. Taylor Malton Shop £,
Rec. 1. 1. 0

Paid -

1845 November 6 & 8

Mr. E. R. Edgar. Trinity Coll.
Rec. Nov. 21st
Paid - 2. 0. 0

Mr. Thos. Glandfield Mill St. Trinity
Rec. Mr. Babbett Att.

Mr. Thos. Chapman Proctor
Rec. Paid . 10. 6

Mr. Catt. Inner Walton St.
Rec. Mr. McCosh Att.

Mr. Blow Fleta Church
Rec. Mr. McCosh Att.

Mr. Jas. Graem Walton St.
Rec. Mr. Babbett Att.

Mr. Abrah. Gibing Walton St.
Rec. Mr. McCosh Att.
(Attend. Perin)

Mr. Jas. Pewitt. Packhouse
Rec.

1845 Decembris £ s 8

Mr. Abbott - Walter Dawn
Rect 1. 1. 0

Mr. Thos Ingram - Felixstow Dam
Rect 1. 11. 6

Paid

Mr. Curtis - Felixstow 8,
Rect

Mr. Dawes Lee. Felixstow
Rect

Mr. Hart Ruta Shop - 8,
Rect

Mr. Jos Manning - Walton 8,
Rect

Mr. Francis - Walton Berg. 8,
Rect

Mr. John Ricke Gent. &c Walton 8,
Rect Mr. Robert Atty.

1846 January £ s d

Mr. John Cook - Leamington (late East End)
Rect. Mr. Rabett Atty.

Mr. Roberts - Felixstow Rectory £,
Rect.

Mr. Pheby - Buckenham
Rect. 1. 1. 0

Paid -

Mr. Roberts - Felixstow Rectory
Rect. o o o

Mr. Desborough - Salhouse £,
Salh. Mr. Rabett Atty.

1846 February £ s 8

Mr. Hudson (Collar Maker) Flitton Mr.
Rect 1. 1. 0

Mr. John Frost. Bandsey Derby
Rect Mr. Rabett Agt.

Mr. Wm. Parker (Shoemaker) Stanley
Rect 1. 1. 0

Mr. John Read - Flitton
Rect Paid. .10. 6

Mr. Pyer. Flitton School £,
Rect Mr. Rabett Agt.

Mr. Mica Frost. Bandsey Derby £,
Rect Mr. Rabett Agt.
Paid .10.

Mr. Bramley - Stanley
o o o

Mr. John Ellis Stanley -
(by order of Mr. Mich
Mr. Rabett Agt.

Smith Vict. Capel in le Frith
Rect Mr. Rabett Agt.
Paid 1. 0. 0

1846 March 5 & 9

Mrs Joseph Shalett Ninety Miles
Recd Mr. Rabett Atto (5)

Mrs Geo. Dilliston - Sevington (73,
Recd Mr. Rabett Atto
Paid .10.

Mrs John Barker - Walton Ferry
Recd Mr. Rabett Atto

Mrs R. Francis - Walton Ferry
Recd

Mrs Marriott Ruston 13.
Recd

Mrs John Pipe - Felixstow &c,
Recd

Mrs Thos Knights Ninety (5,
Recd Mr. Rabett Atto

Mrs Cook - Hall Shore Walton
Recd (2)

Mrs Charles Pearce - Sevington Ships.
Recd Mr. Rabett Atto

1846 April — £ s d

Mr. Saml. Hanks — Walton (S.)
Rec'd Mr. Rabett's Acct.

Mr. Seattle Berry — Oakthorpe (S.)
Rec'd Paid " 10.
Mr. Rabett's Acct.

Mr. John Page (Shoemaker) Preston —
Rec'd

Mr. John Rich — Swinley
Wrote — by order of Mrs. Shirley
Rec'd

Mr. Jas Riches — Felixstow
Rec'd Mr. Rabett's Acct.

1846 Mai — £ s d

Mr. John Hall — Leicester (3,
Rec. Mr. Rabett Att.

Mr. Previtt — Mr. Hunter Greyhound
Rec. Mr. Rabett Att.

Mr. Jennings — Ramsbury
Rec. Mr. Rabett Att.

Mr. Phil. Wright — Walter Perry
Rec. Mr. Rabett Att.

Mr. Page — Lewington Farm
Rec. (8 Months)

Mr. John Cork Ramsbury
Mr. Rabett Att. —

1846 Junii 3 s 8

Dalkeith Chapel.

Mr. Scollard — ~~Buckhaven~~ £1 —
Rect.

Mr. Andrew Fleming. Tiinley £1
Rect Mr. Robertson Sec.
Paid 10. 6

Mr. Wm. Cockson — Dalkeith £1
Rect Mr. Robertson Sec.

Mr. Scarlett — Tiinley Shannie Rgn
Rect £1

1846 July £ s d

Mr. Reeve — Buckhorn £,
Rec'd 1. 1. 0

Mr. Wm. Smith (Sohen) Paid Newby
Rec'd Mr. Rabbitt Att'y

Mr. R. Glenn — Walter, Shoemaker.
Rec'd Paid .15.

Mr. Bone — Bandsey Ferry
Rec'd Mr. Rabbitt Att'y

Mr. Sebup — Felixtown church
Rec'd Paid .10. 6
Att'd by Mr. Rabbitt

Mr. Banyard — Newborn £,
Rec'd

1846 August £ s d

Clock &c Mr. Wm. Falkenham
Rec. Mr. Rabett Atty.

Mr. Wm. Sergeant. Meeting Lambeth
Rec. Mr. Rabett Atty.

Mr. Wm. Smith. Wheelright. Walton
Rec.

Mrs. Rd. Forsdyke. Falkenham
Rec. Mr. Rabett Atty.

Mrs. Wm. Fisk. Trimley St. M.
Rec. Mr. Rabett Atty.

Mr. Andrews. Falkenham
Rec. Mr. Rabett Atty.

1846 September £ s 8

Feltth Sr. — Buckshaw (M,
Rec. Mr. Rabett Att.

Paid 10. 6

Mr. Rush — Henley
Rec. Mr. Rabett Att. 10. 6

Paid (B,

Mr. Howard Pimley. Carpenter,
Rec. July 28th 47 Mother. Child dead
six weeks —

Mr. Henry Durrant. Walton
Rec.

Mr. Moseley — Walton
Rec. Mr. Rabett Att.

Mr. Garnham. Flitton —
Rec. Mr. Rabett Att.

Paid 10. 6

Mr. Wm. Smith — Ivinghoe ?.
Rec. Mr. Rabett Att.

Mr. Nicht. Stoney. Falkenham
Rec. Mr. Rabett Att.

Mr. Garden. Falkenham
Rec. Mr. Rabett Att.

Mr. Thos. Smith — Flitton Carpenter
Rec. Mr. Rabett Att.

Mr. Jennings. Pimley
Rec.

1846 October. £ s d

Mr. B. Cooper - Buckhaven, &c,
Recd

Mr. Phibbs - Sandyhead - Gr £,
Recd Paid - 1.0.0
Mr. Robb Atd.

Mr. James, [illegible], [illegible],

Mr. Jas Stewart - Lower Walton,
Recd Mr. Robb Atd.

Mr. John Dalziel - Walk. Place,
Recd Mr. Robb Atd.

1846 November £ s d

Mr. James (Shoemaker) Walter &
Debt

Mr. Thos Lewis - Bandon Ferry
Debt Mr. Rabbitt Atty

Mr. Jas Pooley Fairlop Mill &
Debt

Mr. John Francis - Walter Ferry £,
Debt

Mr. Wm. Francis - Walter Ferry £,
Debt Mr. Rabbitt Atty

Mr. John Studd - Lower Walter &,
Debt Mr. Rabbitt Atty

Mr. Thos Watts - Bandon Ferry
Debt Mr. Rabbitt Atty

Mr. Gorman - Felix town Shop &
Debt Mr. Rabbitt Atty

Mr. Wm Warner. Lower
Debt Mr. Rabbitt Atty.

1846 December £ s 8

Mr. Wm. Last _ Tunbridge (My Own

Mr. Forgatt _ Bucklesham £,
Own Mr. Rabett Att.
Mr. Wm. Giles Tunbridge £,
Own Mr. Rabett Att.

Mr. Grayling. Bawdsey Ferry £,
Own Mr. Rabett Att.

Mr. John Dennant _ Bucklesham Cottage
Own Mr. Rabett Att.

Mr. Revis Hinton Greyhound £,
Own

Mr. Westhorp _ Hinton £,
Own Mr. Rabett Att.

Mr. Rt. Smith _ Iver Walton
Own Mr. Rabett Att.

82

(83)

1847 January — 2 & 8

Wm Prendergast. Walton Derry. &,
Delt Mr. Rabett Att.

Wm Barrett. Bandsey Derry
Delt Mr. Rabett Att.

Wm Rt. Finney - Tractor
Delt Mr. Rabett Att.

Wm Rush - Pathandaw Warder of
Delt Mr. Rabett Att. Mr. Sadler

Wm Ashley Kilmuky Town &.
Delt Mr. Rabett Att.

Wm Williams &. Sandymount Gent.
Delt Mr. Rabett Att.

Wm Taylor Esqr. Kilmuky Warder of Mr. Sadler
Delt Mr. Rabett Att. -

Wm Ellis - Blacksmith. Kilrush
Delt Paid 10.6

Wm Keane Daughter - Tractor Quin
Delt Mr. Rabett Att. Janr 23d.
(Died Janr 31st. Peritoneal Inflammn.)

1847 February — — £ s d

Mr. Burch — Dozall — £,
Clerk

Mr. Edwd. Watts — Barnsley Ferry £,
Clerk Mr. Roberts Attd.

Mr. Jas Pewitt — Rustin Hill by order
Clerk Mr. Roberts Attd.

Executors Mary — in Mr. Cracknell Lower Watton
Clerk Mr. Roberts Attd.

Mr. Hoddy — Next door —
Clerk

Mr. Abraham Giles — Penisky
Clerk Mr. Roberts Attd. by order of Mr. Giles

Mr. John Studd — Watton
Clerk Attd. by Mr. Roberts
by order of Mr. Durrant

1847 March 2 & 8

Mr. Edw. Papigal - Bauer, Derby
Rec. Mr. Rabbeth Atty
Paid 10.6.8

Mr. Penton - Shoemaker Kirtland
Rec. Mr. Rabbeth Atty

Mr. John Finch - Derby Lewis St. by order
Rec. Mr. Rabbeth

Mr. John Pike - ~~Derby~~ Rockton
Rec. Mr. Rabbeth Atty

Mr. Derby - Buckeye Cem -
Rec.

Mr. Jas. Newman Carpenter, Derby
Rec. Mr. Rabbeth Atty.

1847 April 7 & 8

Mr. Mayo - Sur. Cody Farm Matter
Refer Mr. Rabbeth Atty.

Mr. Thos. Dumont
Refer Mr. Rabbeth Atty
by order of Mr. Dumontonsan -

Desbrey Emma. Master Fund
Refer 1.0.0

Bobbett Eliza. Master Fund
Refer .10.

1847 May ₤ s 8

Mr. Matth. Baldwin - Walton
Rec'd Mr. Babbitt Atty

Mr. Wm. Rose Treasury Order of
Rec'd Mr. Babbitt & Co. Mr. Miles -

Mr. Geo. Gabriel - Master Warden
Rec'd Mr. Miles Page -

Mr. Wm. Page - Walton Ship
(Queen Adelaide)

1847 June £ s 8

Mr. Saml. Emmitt - Trinity
Oyer Retentis Placentia

Mr. Farthing - Nacton
Oyer

Mr. John Barnard Nacton
Oyer

Mr. D. Cavil - Trinity
Oyer Mr. Rabett Att.

Mr. Assell Corporation Dorm. Writs
Oyer

Mr. Drane - Newbury
Oyer Mr. Rabett Att.

Mr. Rh. Francis - Watton Berry
Oyer Mr. Rabett Att.

Mr. Connolly - Sandgate Kent

1847 July £18

Rev. Henry Garrod. Buckingham
left for Colchester —

Rev. Wm. Churchman. Pewsey
Rect.

Rev. Andrews. — Sandyman Sch.
Rect. Sev. Rabett & Co.

1847 August £ s 8

Mr. Wm. Williams – Walton –
Decr. Williams

Mr. Jas. Cook (East Ends), (2)
Decr.

1847 September £ s d

Mr. Geo. Howard Carpenter, Hunby 13.
Over

Mr. Harrison - Thirsk £,
Over Oct. 12th.

Mrs. Brown. Lewisham £,
Over Mr. Rabett Att.

Mr. John Rivett - Thirsk £,
Over Mr. Rabett Att.

Mr. John Cook - Lewisham Late Eastland,
Over Mr. Rabett Att.

Mr. Aylett Excise officer, Thirsk £,
Over Oct. 13th.

Mr. Jas Guiseley - Malton £,
Over

Mr. John Catt - Malton £,
Over

Mr. Pinkney - Landguard Fort - £,
Over Mr. Rabett Att.

1847 October £ s d

Mr. Nicholson Walton — A.
Rec.

Mr. Wood. Swer Walton 13,
Rec. Sur. Rabett Att.

Mr. Glandfield Trinity Board
Rec. Sur. Rabett Att.

Mr. Jno. Francis. Walton Fees 2,
Rec.

Mr. Jno. Gorman Trinity 2)
Rec. by order of Sur. Sutton —

Mr. Mica Frost — Swanage Fees 2,
Rec. Clk. R. Att.

Paid .10.

Mr. Lewis. Levington
(Aberlis 4 Months)
Sur. Rabett Att. —

Mr. Rh. Glandfield J.P.
Rec. by order of Sur. Sutton —

Mr. Brown — Levington
Rec. Sur. Rabett Att.

1847 November £ s 8

Mr. Thos. Sharp Kirton . 13 .
Rec. Mr. Rabett Att. . 10 . 6

Mr. Geo. Last — Paid Hatton (73)
Rec.

Mr. Lee Felixtow £,
Rec. Mr. Rabett Att.

Mr. Stephen Glandfield - Levington £,
Rec.

Mr. John Lancaster - Trimley St.
Rec. Mr. Rabett Att.

Mr. Samel. Tapple - Walton
Rec. Mr. R. Att. £ order of Summons

Mr. Jas. Ellis - Kirton
Rec. Mr. Rabett Att.
by order of Mr. Hardy —

Mr. Mac Handlin - Landguard £
Rec.

1847 December — £ s 8

Mr. Jos. Tolley. Church Farm Printer £,
Oxon

Mr. Stoughton. Printer — £,
Oxon

Mr. Girling — Walton £,
Oxon Rev. Robt. Atk.

Manning Mr. Walton
Oxon Rev. Robt. Atk.

Mr. Duke Young's. Walton £,
Oxon Rev. Robt. Atk.

Mr. Guiseley — Capel Farm. Walton
by order of Rev. Durrant
Oxon Rev. R. Atk. —

74

75. —

1848 January £ s d

Mrs B. Cooper Buckingham Palace Gd
Recd 1 11 6

Mrs Rh Hockley — Trinley Es
Recd Harry Attend. Injunt Case
in the Nisi Prius Court —

Mrs Danl Gardner Ripton
Recd Mrs Rabbitt Attd Gardens Dandy —

Mrs John Gaiceston — Down St Alton
Recd Harry Attend. in 2d Case —

Mrs Wm Gratt Trinley
Recd Mrs Greenwood Attd. Both Ways out of the Way —

Markham Sarah Shalton Hall
Recd Mrs Rabbitt Attd Gardens
Mrs Groves —
Paid 10.6
Mrs Foskytte — Trinley Town Hall
Recd Mrs Rabbitt Attd —

1848 February £ s 8

Mr. Hudson - Cellar Shaker - Kirton -
Rect Mr. Robert Atkinson -

Mr. Wm. Manning - Walton
Rect Mr. Robert Atkinson by order
of Mr. Durrant deceased -

Hardy Hamish - Burrington
Rect Mr. Robert Atkinson by order
of Miles - -

Mr. Taylor - Walton Shop
Rect (S Innocents Church)

1848 March £ s d

Mrs. Cook - Kelly Moderation - Walton
Rec. Mr. R. Atty

Mrs. Jas Fenton - Kirton L, -
Rec. Mr. R. Atty

Mrs Thos. Gardner - Kirton Mrs,
Rec. Mr. R. Atty by order of Sandy -

Mrs. Humphreys - Scituate
Abortis -

Mrs. Abraham Giles - Tenuity
Abortis by order of Mr. Mills -
Mr. R. Atty

Rebecca May - Kirton L, May
Rec. Mr. R. Atty by order of Sandy
Paid .. .10.6
Mrs David Cook - Brinley Parsonage
L. May
Rec. Mr. R. Atty
Paid .10.6

1848 April £ s d

Mr. Fitzgate Buckenham vide June

Mr. Thos Fosdyke, Falkenham £,
Rect. Sur. R. Act. (vide May)
Paid .10.

Mr. Jas Warren, Walton £,
Rect. Sur. R. Act. –

Mr. Jennings – Landguard Fort £,
Rect. Sur. R. Act.

Mr. Rivis – Victor Greyhound
Rect.

Mr. Parker – Trimley Shop £
Rect.

Mr. John Lancaster – Walton
Rect. Sur. R. Act.

1848 May — £ s d

Mr. Reed — Buckshaw Farm (3), Deer

Mr. Wm. Page — Walton Shop (73), Deer

Mr. Thos. Foster — Falkenham (3), Deer Mr. R. Att.

Paid 10.

Mr. John Riches — Walton 2, Deer Mr. R. Att. & order of Mr. Durrant deceased,

Mr. Steed — Felixstow & order of Miller Deer

Mr. Wm. Revett — Kirton & order of Dandy Deer

Mr. James Warner, Walton & order Deer Mr. R. Att. of Mr. Durrant deceased

Mr. Read — Kirton Deer Mr. R. Att.

Mr. Gater — Levington Mill Deer Abortio (about 4 Months)

1848 June — £5 5 8

Mr. Fly Att. for Mrs. Rader Buckinghamshire (2)
Rec'd Mr. Spark Att.

Paid "10 9

Mrs. Hubbard — Tenancy £2,
Rec'd Mr. Spark Att.

Mrs Charles Peace Secretary Ship £2,
Rec'd

Mr. Cowen Landguard Fort
Rec'd Mr. R. Att. Admiralty 3 Months,

1848 July
Mr. Last - Grimston Hall - Trinity
Rect

Mr. John Durrant - Buckenham
Rect Mr. R. Atty -

Mr. John Page. Kirton
Rect Mr. Stark Atty

Paid 10.6

Mr. Wilks Brett - Lexington
Rect Mr. R. Atty

Bishop Elect of Nor. Custable
by Order of Mr. Custable
1.0.0

1845 August £. s 8
Mr. Abraham Tillett. Walton
Dear Mr. Spark Att.

Mr. Henry. Trinity E,
Dear

Widow Cracknell. Walton
Dear Mr. Spark Att.

Mr. Blaggard. Melbourn
Dear Mr. Spark Att.

1848 September 52

Mr. R. Pasfield - Land and York. —
Recd Paid . 10. 6

Mr. David Moseley. Walton £,
Recd

Mr. Wm. Moseley, Walton £,
Recd Mr. Spark Attd.

Mr. Arthur Tillett, Walton £,
Recd

Mr. Covington - Barnack Rly £,
Recd Mr. Spark Attd.
Paid . 10. 6

Mr. Slater, Walkhampton Chapel £,
Recd

Mr. Geo. Dillestone, Proctor (£)
Recd Paid — . 10. 6

Mr. Thos. Bevan. Proctor
by Power Recd —
Mr. Spark Attd. 1. 0. 0

1848 October — £ s 8

Mr. Hill & Daughter. Walton £,
Rec. Mr. Spark Attd.

Paid. 10.

Mr. Wm. Smith. Walton Dec. 13,
Rec. Mr. Spark Attd. —

Mr. John Hall. Pelix Stow £,
Rec. Mr. Spark Attd. —

1848 November
Mr. James Shoemaker, Walton £2
Ditto

Mr. F. Powell — Walkenham Farm
Ditto £2, —

Mr. Jos. Alderton — Walton Ferry £1, 10
Ditto Mr. James Atto

Mr. Hamilton — Tuition £1,
Ditto

Mr. Prendergast, Walton Ferry
Ditto Mr. Sparks Atto

Mr. Sparks — Felixtown £2,
Ditto Mr. Sparks Atto

Mr. Hamilton Tuition £1, —
Ditto

Mr. Grasby, Blundell Ferry
Ditto

Mr. A. Dillistone — Hamilton Farm
Ditto Mr. Sparks Atto opposite Stratton Hall Gate

Mr. John Blanch, Walton Ferry
Jan January 1849

1848 December
Mr. Saml. Merrick Pinkney St.
Recd

Mr. John Ansell Victoria Shop St.
for January 1849 — —

Mr. Henry Durrant Walter St.
for January 1849 —

Mr. Stewart Lower Walter St.
Recd Mr. Shaw Attd.

Mr. Topplis Dr. Organ Pinkney St.
Recd Mr. Spark Attd.

Mr. Joseph Scallett Pinkney St.
Recd Mr. Spark Attd.

Mr. Ward Skinner Row Victoria St.
Recd

Bloom Sophy Market Street
Parker Place
Recd 100

Mr. Edwd. Watts Barnard Terry St.
for January 1849

Mr. Callender Buckingham
Recd Mr. Shaw Attd.
Paid .10.

1841 January — £ s d

Mr. Kirby. Buckingham Farm &c,
Rec.

Mr. Jennings Trinity Garden &,
Rec. Mr. Shum Atto.

Paid. 10.6

Mr. Cattenden — Buckingham
Rec. December ——— ———

Mr. Jas. Freeth — Falkenham
Rec. Mr. Shum Atto.

Paid. 10.

Mr. R. Watts — Bawdsey Ferry
Rec. Mr. Shum Atto.

Mr. Page — Levington Creek
Rec.

Mr. John Ansell — Whitton Sks
Rec.

Mr. Henry Durrant. Watts
Rec. 15 0

Mr. Edwd. (mad) Watts — Bawdsey Ferry
Rec. Mr. Shum Atto.

Paid, 10.

Mr. John Deacon. Watts Ferry
Rec. Mr. Shum Atto.

1849 February 6 89

Mrs. Gardner Falkenham
Recd Mr. Sims Acct

Mrs. Roddy. Walton
Recd 1 10

Mrs. 13 Acres Town Walton
Recd Mr. Sims order by Davenport

Mrs. Ellwidge — Falkenham (3)
Recd by order of Mr. Sims

1849 March

Mr. Saml. Plank. Walton
Rec. Mr. Town Atty.
Copies of Document

Mr. Hart — Printer Shop
Rec. Mr. Town Atty.

Mr. Gracen — Felton Shop —
Rec. Mr. Town Atty. 1 1 0

Mr. Whymark Railway Board
Rec. Clk. Town Atty.

Mr. Cook East End. Felton 3/
Rec. 1 1 0

Mr. Barnard — Acton &c.

Mr. Jas. Collins Vs. Cummings Railway
Rec. Clk. Town Atty.

Mr. Manning. Walton
Rec. Mr. Town Atty.
Copies of Document —

1849 April

Mr. R. Edgar. Trinity 2nd week
Rec'd Feby 17th (7 Months)
Certificate & Paid 2.0.0
at Chas. Pl. Lacrosse

Mr. Rich. Lewis Trinity
Rec'd Mr. Shaw Att.

Mr. Fisk Lexington
Rec'd Mr. Shaw Att.

Mr. Jas. Leavitt. Kirtland
Rec'd Mr. Shaw Att.

Mr. Aldred. Landgrandgott
Rec'd Mr. Shaw Att.

Mr. Bergmark Trinity
Rec'd Mr. Shaw Att.

Mr. Perry Falkenham
Rec'd Mr. Shaw Att.
Paid .10.

Wade Charlotte. Nacatchee
Rec'd 1.0.0

1849 May

Fo 83.

Mr. Studd at Messrs Levington
Recd Mo. Stamp Act ..

Mr. Hall _ Levington
Recd Mo. Stamp Act ..
Placentia Plea

Mr.

Abbott Anne . Mactan Island
Recd 5 Months Child _

1. 0. 0

1849 June — £ s d

Mr. Wm. Williams — Walton L.
Rec. July 10th — Mary 1 11 6

Mr. John Pipe — Felixtow L.
Rec. 28/6/49

Mr. Cook — Family Felix 13,
Rec. Mr. Shum Atto. 1 10

Mr. Handyside — Sergt. Major Landguard Fort
Rec. Mr. Shum Atto. —

Mr. John Pipe — Family 13,
Rec.

Mr. Rowe — Shoemaker. Walton
Rec. Mr. Shum Atto.
Paid. 6.

Mr. Price — Family
Rec. Mr. Shum Atto.
Executor of Will —

1842 July

£ s d

Mrs Thos. Durrant Walton
Recd Mr. Shaw Attd.

Mrs R. Rosdyke Dalbeach
Recd Mr. Shaw Attd. (2)

Mrs Page Walton Surg.
Recd 1 1 0

Hatfield Maria. Bractan Street
Recd Mr. Shaw Attd
Allowance 1. 0. 0

Shudden Deborah, Bractan Street
Ulcus Placentæ 1. 0. 0
Recd Mr. Shaw Attd

Mrs Wm Frazer Ruby
Recd Mr. Shaw Attd

1849 August to 29

Mr. Jos. Pooley. Church Farm
Tiverton.

Mr. Lee — Bolitown
Oken. Mr. Shaw Agent.

1849 September 6th

Mr. Reeve - Buckingham Farm
Over 2 —

Mr. Fear - Landguard Fort
Over Mr. Shum Acct. —

Mr. Lucia - Post. Barnack Ferry
Over Mr. Shum Acct.
Paid 10.

Mr. Thos. Chapman - Oracton

Mr. Ilsley Oracton
Over Mr. Shum Acct. -
Journal — —

Mr. R. Forsdyke. Oakham
Over Mr. Shum Acct. -

1849 October 7 & 9

Mr. Thos. Wenk. Walton Fly
Recd Mr. Shaw Atty.

Mr. Forsyth, Lexington Hill
Recd Mr. Shaw Atty.

Mr. Wm. Cavil Lexington
Recd Mr. Shaw Atty.

Mr. Sayles - Walton St.
Recd 1 10

1849 November 5 & 8

Mr. Edward Tinsley Esq.
Over Mr. [illegible] Snow Att.d 1 1 0

Mr. Jas. Ellis Flinton Esq.
Over Mr. Snow Att.d 1

Mr. Thos. Lovington Esq.
Over Mr. Snow Att.d

Mrs. Wm. Churchman Tinsley
over Mr. Snow Att.d 1 1 0

Harriett Hardy Lovington
over Mr. Snow Att.d

1840 December £ s 8

Mr. E. Pasfield - Landguard Fort
Mrs Snow Att. over 8,

Mrs Sloegrove - Kirton (2.)
over Mr. Snow Att.

Mrs G. Cherrington Walton (13)
over Mr. Snow Att. Instrumental

Mrs Studd Walton (E).
over Mr. Snow Att.

Mr. John Ansell Kirton
over

65 Cases 65
40 mt
17 mt W

1850 January £ s d

Wm Fryatt Bucklesham (B)
Recd Mr. Shaw Attd

Purkiss Wm Falkenham (B)
Recd Mr. Shaw Attd ~~Andrews~~

Wm John Woolnough Cook's Levington
Recd (E)

Wm James Shoemaker Walton
Recd Mr. Shaw Attd (E)
15 0

1850 February £ s d

Recd from Mr. Wm Tinsley
Rent Mr. Shaw Acct.

Mr. John Recitt. Printer
Rent Mr. Shaw Acct.

Mr C Clarke Mr. Landguard
Rent Mr. Shaw Acct.

Mr. Brooks Landguard
Rent Mr. Shaw Acct.

Mr. Geo. Rush Proctor.
Rent

1850 March 18

Mr. Warner Trinity
Rect. Mr. Shaw Atty.

Mr. Edwd. Watts. Bandon Ferry
Rect. Mr. Shaw Atty.

Mr. Hubbard Trinity
Rect. Mr. Shaw Atty.

Mr. Capt. Divine Landguard Fort
Rect. Mr. Shaw Atty.

Mr. Thos. Peard. Trinity. Farmer
Rect. Mr. Shaw Atty. 1 month

1 1 0

1850 April 1 s 3

Ab: Palmer Bucktslam Darm. &.

Reen

1 11 4

1850 May 7 & 8

Mrs Thos Nelson of Bardstown Ky,
Rec'd Mr. Shaw's Ltr.

1860 June £ s d

M. Capt. Harison Landsman 3
Rec Paid 3. 0. 0

M. Harison Kirton
Rec 1 1 0

M. Bean Lord A. Paget Lodge £,
Linlithgow
Rec (7 Months Premature)
Paid 10.

M. Fisby Buckhaven Lodge
£,
Rec 1 1 0

1850 July £0 8 7

Trinley —

Mr. John Price Cashmark,

Rec 1 11 6

13/8/50 Petty

		£	s	8
1850 August				
Mr. Pope – Solicitor		2		
Rent		1	11	6
Mr. Charles Fly. Walton, Lieut.				
Brig-Maj. Staff Adt.				
		1	11	6

1850 September 26 &c

Mr. Sam. Everitt Brinsley (13,
Over 1 11 4

Mr. Studd – Leicester
Over

1850 October £ s 8

Mr. Packer — Whitby Shop —
over

1 1 0.

Pierce Mr. Lexington Shop
over Gemini 1 1 0.

Hall Mr. John Helixtow
over Pallas 7d 10 6

1850 November 20 18

Watts Wm Edmund Bawdsey Ferry
over Not sent for

Stollery Wm John Bucklesham
Over. P.d 10 6

1850 December	£	s	d
Lee Mrs Felixtow. Orby		10	6
over Pueri			
Humphreys Mrs Felixtow			
over Puellae	2	2	0

31
23rd

31 Cadet

1851 January £ s d

Cook Wm. Levington
Over Pueri. 5/1/51. Crby 10 4

Keebles Wm Falkenham
Over Puellae 18/1/51 Crby 10 6

Cutting Wm Kirton
Over Pueri 6/2/51 Crby 10 0

Perry Wm Falkenham / /
Over Pueri 14/2/51.

Cook Wm Half Moon
Over Pueri 27/1/51.

1851 February — £ s d

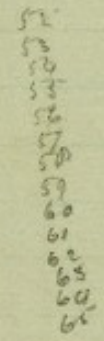
Cooper Mrs. V. Bucklesham
Over Puellae 25/2/51.

Williams Mrs. Wm. Watton.
Over Puer. 23/2/51 John

Goram Mrs. Felixtow
Over 24/3/51 Puellae

Hudson Mrs. G. Kirton 1 1 0
Over Puellae 13/2/51.

Hart Mrs. Kirton Shopr.
Over Puer. 15/2/51 Crby 10 6



1851	March	£	s	d.
Cook Wm.	Trinidad Truckle			
Over 10/3/51	Pullae			
Smith Elizabeth	Trinidad			
Over 1/3/51	Pierie Ship	15	0	

1851 April £ s d.

Jennings Wm Ambrose Trimley
Over 9/5/51. Pueri. Ruby 10 6

Bloomfield Wm Ephraim Watton
Over 1/6/51 Pallas

Churchman Wm Wm Trimley
Over 23/5/51 Pueri

1851 May £ s d

Robinson Wm Wallon
Ober 14/7/51 Puellae Coby 10 6

1857 June £ s d

Pasteful Wm E. Landguard Fort.
over 27/4/57. Puerï. Coby 10 6

Hoddy Wm Watton.
over 4/7/57 Puerï.

Sherrington Wm George
Over 1/7/57 Puerï

1851 July £ s d

Reeve Wm Bucklesham
Over 20/7/51 Puellae

James Wm Watton.
Over 11/8/51. Puellae

1851 August.

444. 3m. 9th Under

Grayling Wm Bawdsey Ferry.

Over 7/9/51 Duellist

1857 September

Johnson Wm Landguard Fort
Gone to Woolwich

Steel Wm Landguard Fort
Over 8/10/57 Pueblae Brig 10 6

1851 October

Mayhew Wm Watton
Over 15/10/51. Pmrc Cby 1 0 0

Fenton Wm Philip Fenton
Over 5/12/51.

Lawrence Wm Helliston
Over 23/10/51.

1851 November

Cook Wm. George Trimley
Over 12/11/51 Rheumatic Arthritis 10.6

Howard Wm. Trimley
Over 26/10/51 Pneumonia

1857 December

Kirby Wd. Bucklesham.
Over 23/11/57. Pueri mort

Pipe Wd. Felixstow
Over 8/1/52 Puellae

31 3 Cases

1852 January

Jennings Mrs G. Trimley
Over 11/1/52 Puellae

Lee Mrs Helistow
Over 29/12/51

1852 February

Hudson Wm Kinton
Over 14/4/52 Puellae

Hubbard Wm Trimley
Over 17/2/52 Puellae

Pierce Wm Lexington Ships
Over 2/3/52 Puellae

1852 March.

Boby Wm Charles Watton
Over 20/3/52 Puellae

Robinson Wm Landguard Fort
Over 13/3/52 Pueri Coby 10 4

Woolnough Wm John Leamington
Over 14/4/52 Pueri

1852 April

Frances Mrs John Walton Ferry
Over Fluvie 1/4/52 Crb

Hyem Miss Walton Ferry
Over Fluvie 7/5/52 Crby 1 1 0

Kirkpatrick Mrs Canteen
Bottle of smoke.

1852 May

Parker Wm Trinity
Over Fuerit 29/4/52

Smith Wm Trinity Mods' Daughter
Over 27/6/52 Fuellae Cby 16 6

Watts Wm Edmund Bawdsey
Over 25/5/52 Fuerit

1852 June

Rice Wm Landguard Fort
Over 30/7/52 Phillac Coby 156

Ragan Wm Bawdsey Ferry.
Gone away.

1852 July

Passiful Mr Landguard Fort
Oder. 4/8/52 Phillae Orby 10 6

1852 August

Horne Wm Joseph. Watton.
Over 10/8/52 Fiere

1852. September

Fenton Wm Daniel Kirton
Over Pudlow 20/7/52

1852 October £ s d

Cook Wm Henry Kirton (Hants Bry
Oberi 25/10/52 Pueri Cby 10 6

1852. November	£	s	d.
Sullivan Mr. Landguard Fort Voir 12/9/52 Fuori		Crby	10 6
Horne Mr. Robert Woolton Voir 11/11/52. Fuori		Crby	10 6

1852 December £ s. d.

Cook Wm. Kirton Church Farm
Over Puellae 15/1/53

Hoyell Wm. James Trimley
Over Kuri 22/12/52 Erby 10 6

Brunkert Wm. Landguard Fort 2.
Over Puellae 11/12/52
24 24. cases

1853 January £ s d.

Cook Wm George Trimley
Over 19/2/53 Pueri Orby 10 6

Keeble Wm Falkenham
Over Puellae 29/1/53 Orby 10 6

Churchman Wm Wm Trimley
Over Pueri 13/1/53.

1853. February

Cook Mr. Kirton Kiln
over Pitellac 15/1/53.

1853. March

Williams Wm Wm Watton
Over Phillae 12/3/53. Rose

Everitt Wm Samuel Buckleham
Over Puer 6/4/53.

Pipe Wm Heliston
Over Phillae 7/3/53.

1853 April

Rush Wk Leoyton
over Pullae 17/8/53.

Long Wk Victoria Inn Bawdsey Ferry
Poch 9/5/53 Pueri Abs 1 1:0

1853. May

Boby — Wm Charles Walton
Over 11/5/53 Puer

Fenton Wm Samuel Kirton
Over 23/5/53 Puellae

1853 June

Bennett Wm Walton
Over Phillac 13/6/53.

Kirby Wm Bucklesham
Over Phillac 17/6/53.

1853 July

Hall Mr. Colin Helytow
Over 26/7/53.

Co lightly Mr Landguard Fort
Gone away

1853 August:

Sherrington Wm G. Watton
boer 9/9/53 Pucru

1853 September

Hubbard Mrs. Wm Watton
over 1/10/53 Pallas

1853 October

Bloomfield Wm E. Walton.
Over 2/10/53 Pueri

Horne Wm Joseph Walton
Over 28/11/53 Puellae.

Steel Wm Landguard Fort
Over 12/11/53 Pueri

1853 November

Pipe Wm Trimley
Oacr 3/12/53 Puer.

Pastiful Wm Landguard Fort.
Oacr 12/12/53 Puer

Woolnough Wm Philips Walton
Over 30/10/53 Phellae.

1853 December

Francis Wm. John Watton Ferry
Over 5/12/53. Pueri.

Wm. Donner Wm. Fort.
Over 1/1/54 Phillac
24 25 Cases

1854 January.

1855

ff Williams Mr. Wm. Walton
over 19/1/55 Furie.

Cooper Mr. John Woulton
over 21/1/55. Pella

Radcliffe Mr. Landguard Fort
over Furie, 7/4/55 Six months.

1854	February	£	s	d
Boddy	Mrs.	Watton.		
Over	4/3/54	Phillac		

1854 March £ s d.

Ratcliffe Mr Lundyguard Fort.
over 24/3/54 Absorbs 2 months.

1855

Gort Mr/ ~~George~~ Trimley.

Howell Mr / Hulkeham.

1854 April

Hubbard Mrs Trimby
over 19/6/54 Pueblac

1855

~~Everitt Mrs Samuel Buckbotham~~

1854 May

Robinson Mrs Walton
over 23/8/54 Puerie

Goram Mrs Heliptow
over 22/6/54 Puellae

1854. June

Pipe Mrs Heliptow
over 9/7/54

1854 July

Newton Wm Thos Bramley Harry
Over 14/7/54 Pueri

Woolmough Wm Skipton P.O.
Over 29/7/54 Pueri

1854 August

Smith Mrs Watton
over 26/8/54 Puellae

Churchman Mrs Grumley
over 21/9/54 Puellae

1854 September

Cooper Wm Buckleham
Over 26/8/54 Pullae Short

Leggett Wm Grimley
Over 04/9/54 Pullae

October

November –.

1854 December

Williams Mrs Halhenhams Chapel
Over 12/12/54 Puellae

Cook Mrs Kirton Church Farm
Over 12/1/55 Puellae

Westhorpe Mrs James Kirton
Over 24/2/55 Pueri

12/ 14 cases

1855 January.

Tollemache Mrs Wm Walton
Paris 19/1/55 Paris Fred

Cooper Mrs John Walton
21/1/55 Paris Pallas

Radcliffe Mrs Lamplugh Fort
7/1/55 Paris (6 months) 5 0 0

1855 February.

Lost Mrs George Trundley
over 13/2/55 Paris

Cowie Mrs James Trundley
over 4/4/55 Paellac

Westthorpe Mrs Lunas Kirton
over 24/2/55 Paris Cby 57

1855 March.

Crofton Wm Halkenbane
Obit 31/3/55 Puelli

Watts Wm Edward Bradley Terry
Obit 19/4/55 Pueri

1855 April

Everitt Wm & S. Brocklesham.

over 4/4/55 Puellae 1 11 6

Cook Wm & C. Grimley

over 18/4/55. Puero 10 6

1855 May

Dr 1856.

January	Shimpling	Rector.	Coby		10	0
January	Solly	Mrs	Walton	Coby	15	0
January	Cattle	Jn.º	Walton	Coby	10	6
January	Leggett	Mrs	Trimley Walton		1	1	0
February	Francis	Mrs	J. Walton		10	6
July	Williams	Mrs	Wm Walton		1	11	6
March	Pallifal	Mrs	Landguard Fort			10	6
March	Pipe	Mrs	Trimley		1	11	6
June	Newson	Mrs	J. Bradley			10	6
July	Everitt	Mrs	L. Bucklesham		1	11	6
July	Coram	Mrs	Felixstowe		1	1	0
November	Reeve	Mrs	Bucklesham		1	1	0
November	Smith	Mrs	Walton			10	6
October	Solly	Mrs	Walton			10	6
November	Fenn	Mrs	Trimley			10	6
December	Cooper	Mrs	Walton			10	6
September	Diaper	Mrs	Rector			10	0
December	Williams	Mrs	Falkenham		1	1	0
December	Bindmore	Mrs	Walton			10	6
November	Horne	Mrs	Joseph Walton		1	1	0.
				£	16	9	0

Cr.

January	1856.					
January 1	Shingling . Pueri	City		10	0	
January 1	Solly Mrs Pueri	City		15	0	
February 11	Catterall Mrs Puere	City		10	0	
January 29	Leggett Mrs Puellae		1	1		
March 27	Francis Mrs Pueri			10	6	
June 14	Williams Mrs Puellae	Ellen	1	11	6	
April 2	Padsful Mrs Pueri					
April 29	Pipe Mrs Pueri		1	11	6	
August 16th	Newsom Mrs Puellae	City		10	6	
July 24	Everett Mrs Pueri		1	11	6	
Septr 6	Coram Mrs Pueri		1	1	0	
Octr 18	Reese Mrs Pueri		1	1	0	
Novr 28	Smith Mrs Pueri			10	6	
Decr 27th	Solly Mrs Pueri	City		10	6	
Octr 11	Green Mrs Puellae	City		10	6	
Decr 22	Cooper Mrs Pueri			10	6	
Septr 4	Draper Mrs Puellae			10	0	
Novr 21	Williams Mrs Pueri		1	12	0	
Decr 25	Ondaaroe Mrs Pueri			10	6	
Decr 1	Horne Mrs Pueri		1	1		

Dr	1857	£	s	d
January	Hyne Mrs R. Walton	1	1	0
February	Cowie Mrs John Trimley		10	6
February	Churchman Mrs W. Trimley		10	6
February	Barker Mrs Henry Walton		10	6
June	Hubbard Mrs Trimley		10	6
July	Roby Mrs Charles Walton	1	11	6
	Cook [illegible]	[illegible]	[illegible]	0
April	Cook Mrs Landguard Fort		10	6
April	Macintosh Mrs Landguard		10	6
May	Mrs [illegible]		[illegible]	6
May	Lambert Mrs Walton		10	6
June	Leggett Mrs Trimley	1	1	0
September	Rouse Mrs Trimley		10	6
June	O'Malley Mrs Fort		10	6
July	Sherlock Mrs Fort		10	6
October	Solly Mrs Walton		10	6
August	Gibbs Mrs Fort		10	6
October	Andrews Mrs Fort		10	6
October	Francis Mrs Walton Ferry		10	6
October	Woodward Mrs Fort		10	6
November	Jeffries Mrs Walton		10	6
January	Ward [illegible]		[illegible]	[illegible]
January	Stewart Mrs Walton	[illegible]	[illegible]	[illegible]
		£ 12	11	6

Cr.	1857.	£	s	d
January 28	Hyam Mrs R. Puellae	1	1	0
January 2	Cowie Mrs Pueri		10	6
February 2	Churchman Mrs Puellae		10	6
January 18	Barber Mrs Pueri		10	6
July 4	Hubbard Mrs Puellae		10	6
July 15	Bobby Mrs Pueri	1	11	6
May 30.	Cook Mrs Pueri		10	6
April 22	Mdcintosh Mrs Puerorum		10	6
May 11	Lambert Mrs Pueri		10	6
July 5	Leggett Mrs Puellae	1	1	
Nov. 5	Howe Mrs Puellae		10	6
August 2	O'Malley Mrs Pueri		10	6
August 22	Sherlock Mrs Pueri		10	0
Nov. 9	Solly Mrs Puellae		10	6
August 11	Gibbs Mrs Puellae		10	0
October 3	Andrews Mrs Puellae		10	0
December 9	Francis Mrs Puerorum		10	6
October 18	Woodward Mrs Puellae		10	6
December 2	Jeffries Mrs Pueri		10	6

Dr	1850	£	s	d
January	Steward Mrs Walton	1	11	6
January	Ward Mrs Felixstowe		10	6
March	Everett Mrs Bucklesham	1	11	6
June	Williams Mrs Walton	1	11	6
February	Pakenfield Mrs Fort		10	6
February	Barber Mrs G. Walton		10	6
February	Eade Mrs Kirton		15	0
February	Cook Mrs Kirton Farm	1	1	0
February	Churchman Mrs Trimley		10	6
April	Fenn Mrs Robt Trimley		10	6
April	Scarlett Mrs Sat	1	1	0
May	Pipe Mrs Trimley	1	11	6
February	Kent Lavinia Foxhall		10	0
May	Keymer Mrs Kirton	1	1	0
June	Newson Mrs J. Brandeston Ferry		10	6
July	Williams Mrs Sat Bucklesham	1	11	6
June	Leach Eliza Bacton House		10	0
July	Spratt Mrs Fort		15	0
September	Carver Mrs Felixstowe		10	6
August	Smith Mrs Walton		10	6
October	Horne Mrs Walton	1	1	0
September	Newson Mrs C. Walton		10	6
September	Edwards Emma Beach	1	1	0
October	Coram Mrs Sat Walton		10	6
November	Cort Mrs G. Trimley		10	6
		£ 21	0	0

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Cr.	1850	£	s	d.
Jan^{y} 14	Steward Mrs Pueri	1	11	6
Feb^{y} 19	Ward Mrs Pueri		10	6
April 9	Everitt Mrs Pueri	1	11	6
June 19	Williams Mrs Pueri Everitt	1	11	6
June 1	Pattiful Mrs Puellae		10	6
March 11	Parker Mrs G. Puellae		10	6
March 9	Eade Mrs Pueri		15	0
March 10	Cook Mrs Puellae	1	1	
Jan^{y} 26 February	Churchman Mrs Pueri		10	6
April 12	Fenn Mrs R. Puellae		10	6
April 12	Scarlett Mrs Pueri			
June 3	Pipe Mrs Pueri	1	11	6
Feb^{y} 13	Kent Lavinia Pueri		10	0
May 22	Keymer Mrs Puellae	1	0	0
July 24	Newsom Mrs Pueri		10	6
June 11	Williams Mrs Sch. Pueri	1	1	6
June 13	Leach Eliza Pueri		10	0
July 2	Spratt Mrs Puellae		15	0
Oct^{r} 3	Carver Mrs Puellae		10	6
Sept^{r} 9	Smith Mrs Pueri		10	6
Nov^{r} 11	Horne Mrs Puellae	1	1	
August 31	Newsom Mrs C Pueri		10	6
Sept^{r} 8	Edwards Emma Pueri	1	1	
Oct^{r} 17	Corain Mrs Sch. Pueri		10	6
Nov^{r} 27	Court Mrs G. Pueri		10	6

Dr	1859	£	s	d
January	Williams Mrs Falkenham	1	1	0
February	Cattermole Mrs Lower Walton		10	6
January	Hyem Mrs R. Walton	1	1	0
March	Meadows Mrs Henry Brandsby Ferry		10	6
February	Day Mrs Daniel Helpstowe		10	6
February	Lambert Mrs Walton		10	6
March	Cowie Mrs John Trimley		10	6
March	Jackson Mrs James Walton	1	1	0
March	Watts Mrs Edmund Helpstowe Ferry		10	6
June	Reeve Mrs Bucklesham	1	1	0
May	Collins Jane Trimley		10	6
June	Smith Mrs Jas Walton		10	6
July	Hubbard Mrs Trimley		10	6
July	Leggett Mrs Trimley	1	1	0
August	Cooper Mrs Walton		10	6
October	Barber Mrs Henry Walton		10	6
August	Cracknell Mrs Walton		10	6
September	Barber Mrs John Walton		10	6
October	Chenery Mrs Maybush	1	1	0
October	Pipe Mrs Trimley	1	11	6
December	Fenn Mrs Lower Trimley		X	X
December	Steward Mrs Walton Mill	X	X	X
October	Mays Sarah Walton		10	6
January	Solly Mrs Walton		X	X
November	Horne Mrs Joseph Walton	1	1	0
December	Durrant Mrs Elijah Walton		10	6
		£ 16	16	0

Cr	1859	£	s	d
February 15	Williams Mrs Pueri	1	1	
February 18	Catterside Mrs Puellae		10	6
January 31	Ayers Mrs Pueri	1	1	
February 21	Newsom Mrs Henry Pueri		10	6
March 27	Day Mrs Daniel Puellae		10	6
Febry 7th	Lambert Mrs Pueri		10	6
March 25	Cowie Mrs Puellae			
March 7th	Jackson Mrs Pueri	1.	1.	0.
May 10	Watts Mrs Puellae		10	6
May 31	Reeve Mrs Pueri	1	1	
May 11	Collins Jane Pueri		10	6
July 3	Smith Mrs Puellae		10	6
Aug 8th	Hubbard Mrs Pueri		10	6
Aug 23	Leggett Mrs Pueri	1	1	
July 31	Cooper Mrs Pueri		10	6
Oct 4	Barber Mrs H. Pueri		10	6
Augt. 4	Cracknell Mrs Pueri		10	6
Augt. 27	Barber Mrs J. Puellae		10	6
Novr 7	Chenery Mrs Puellae	1	1	
Novr 22	Pope Mrs Puellae	1	11	6
October 31	Mays Sarah Puellae		10	6
Decr 4	Horne Mrs Puellae	1	1	
Decr 9	Durrant Mrs Pueri		10	6

Dr	1860	£	s	d
January	Jolly Mrs Walton		10	6
January	Newson Mrs Robt Felixstowe Ferry		10	6
July	Williams Mrs Wm Walton	1	11	6
February	Block Mrs Wm Lower Walton		10	6
February	Croyon Mrs Falkenham		10	6
January	Steward Mrs Walton	1	11	6
January	Fenn Mrs R. Trimley		10	6
April	Buckingham Mrs Walton	1	1	
May	Dinsmore Mrs Walton		10	6
July	Everitt Mrs Brucklesham	1	11	6
September	Smith Mrs Wm Walton		10	6
May	Topple Mrs Trimley		10	6
April	Cowie Mrs Daniel Trimley		10	6
May	Finch Mrs Walton		10	6
June	Williams Mrs Sen Brucklesham	1	11	6
April	Lambert Mrs Walton		10	6
June	Leaper Mrs Trimley		10	
August	Carver Mrs Felixstowe		10	6
Sept	Cullen Mrs Walton	1	1	
June	Shepherd Maria Kirton		10	
October	Block Mrs Wm Lower Walton		10	6
Sept	Dawson Mrs Trimley		10	6
Sept	Cook Mrs Levington		10	6
Nov	Allen Mrs Walton		10	6
October	Topple Ann Walton		10	6
December	Coram Mrs Felixstowe	1	1	
December	Cook Mrs Kirton	1	1	
December	Newman Mrs Falkenham		10	6
December	Coram Mrs Sen Walton		10	6
December	Ward Mrs Walton		10	6
December	Fillett Mrs Walton		10	6
December	Manning Mrs Felixstowe	1	1	0

Cr	1860	£	s	d
Feb^y 12	Jolly Mrs. Puer.		10	
Jan^y 9	Newsom Mrs. S. Puer.		10	6
Jan^y 1^st	Williams Mrs. Abortus	1	11	6
Jan^y 7^th	Block Mrs. Puer.	X	10	
Feb^y 8	Croyon Mrs. Puer.		10	6
Jan^y 4	Steward Mrs. Puer.	1	11	6
Jan^y 21^st	Fenn Mrs. Puellae		10	6
Feb^y 22	Buckingham Mrs. Puellae	1	1	
June 7^th	Dinsmore Mrs. Puer.			
July 18^th	Everett Mrs. Puer.	1	11	6
Oct^r 22	Smith Wm. Puellae		10	6
April 19	Topple Mrs. Puellae			
April 29	Cowie Mrs. Puer.			
May 20	Finch Mrs. Puellae			
July 6^th	Williams Mrs. Puellae	1	11	6
Aug^t 19	Lambert Mrs. Puellae		10	6
April 19	Hagon Mrs. Puer.		10	
May 21	Carver Mrs. Gemini		10	6
Oct^r 12	Cullen Mrs. Puer.	1	1	
June 26^th	Shepherd Maria Puer.		10	
Oct^r 6	Block Mrs. Puellae	X	10	
Oct^r 1^st	Dawson Mrs. Puellae		10	6
	Goram ?			
Sept^r 17	Allen Mrs. Puellae Mort		10	6
Sept^r 18^th	Topple Ann Puer.		10	6
Nov^r 17^th	Goram Mrs. Puer.	1	1	
Nov^r 1^st	Cook Mrs. Puellae	1	1	
1861				
1861				
1861				
Dec^r 5	Tillett Mrs. Puellae		10	6
Dec^r 12	Mannix Mrs. Puer.		10	6

Dr 1861

February	Williams Mrs	Falkenham	1	1	0
February	Newson Ann	Walton		10	6
January	Newman Mrs	Falkenham	1	0	0
January	Coram Mrs Sal	Walton		10	6
January	Ward Mrs	Walton		10	6
February	Jackson Mrs Sal	Walton		15	-
March	Steward Mrs	Walton	1	1	
April	Smith Mrs Sal	Walton		11	6
April	Chenery Mrs	Felixstowe	1	1	
May	Fenn Mrs K.	Trimley		10	6
April	Lowers Mrs	Walton	1	1	
April	Durrant Mrs W.	Walton		10	6
April	Markham Mrs	Trimley		10	6
April	Durrant Mrs G.	Walton		10	6
June	Cattermole Mrs	Walton		10	6
June	Julian Mrs	Naunton Fitton	1	11	6
July	Watts Mrs Wm	Felix Ferry		10	6
August	Fenn Mrs	Walton	1	1	-
August	Durrant Mrs Elijah	Walton		10	6
Sept	Jennings Mrs G.	Walton		10	6
July	Leggett Mrs	Trimley	1	-	-
October	Cowie Mrs Wm	Trimley		10	6
August	Cooper Mrs	Walton		10	6
October	Francis Mrs John	Walton		10	6
Sept	Durrant Mrs S.	Walton		10	6
October	Woods Mrs	Lower Walton		10	6
November 27.	Crane Mrs	Felixstowe	1	1	-
November	Persey Mrs	Walton		10	6
December	Smith Mrs John	Walton		10	6
December	Fulton Mrs	Walton	1	1	

Cr 1861.

Jan^{y} 28	Williams Mrs. Pueri	1	1	
Jan^{y} 17.	Newsom Ann Pueri		10	6
January 6	Newman Mrs. Puellae	1	0	0
January 6	Goram Mrs. Puellae		10	6
January 7	Ward Mrs. Puellae			
January 7	Jackson Mrs. Puellae	1	1	
April 24.	Steward Mrs. Pueri	1	11	6
July 7	Cheviery Mrs. Pueri	1	1	
May 27	Fenn Mrs. Pueri		10	6
June 5	Sowers Mrs. Pueri	1	1	
May 3	Durrant Mrs. Wm. Puellae		10	6
May 29	Markham Mrs. Pueri		10	6
April 30th	Durrant Mrs. G. Puellae		10	6
June 22	Catterwole Mrs. Pueri		10	6
June 14	Julian Mrs. Puellae	1	11	6
Aug^{t} 30th	Hyam Mrs. Pueri mort	1	1	
Aug^{t} 8	Durrant Mrs. Pueri		10	6
Sept 30	Jennings Mrs. Puellae		10	6
July 16	Leggett Mrs. Pueri		15	
Sept^{r} 30	Cowie Mrs. Pueri		10	6
Aug^{t} 20	Cooper Mrs. Pueri		10	6
Oct^{r} 11	Francis Mrs. Pueri		10	6
Sept^{r} 10th	Durrant Mrs. Puellae		10	6
Aug^{t} 9	Woods Mrs. Pueri		10	6
Oct^{r} 15	Crane Mrs. Pueri	1	1	
Sept 30	Bersey Mrs. G. Pueri mort		10	6
Dec^{r} 22	Smith Mrs. Puellae		10	6
Nov^{r} 14	Cullen Mrs. Pueri	1	1	

Dr	1862	£	s	d
February	Rushbrooke Mrs A. Trimley		10	6
February	Everitt Mrs Buckesham	1	11	6
February	Wick Mrs Felixstowe		10	6
April	Newson Mrs J. Felixstowe		10	6
April	Hubbard Mrs Trimley		10	6
June	Steward Mrs Walton	1	11	6
March	Allen Mrs R. Walton		10	6
March	Durrant Mrs Sat Walton		10	6
May	Goram Mrs Felixstowe	1	1	0
May	Goram Mrs Walton		10	6
April	Rushbrooke Mary Anne		10	6
July	Pipe Mrs Trimley	1	11	6
May	Cort Mrs Sat Trimley		10	6
May	Cowie Mrs John Trimley		10	6
May	Barber Mrs H. Walton		10	6
August	Howe Mrs Trimley		10	6
August	Flock Mrs Wm Walton		10	6
October	Newman Mrs A. Trimley		15	0
August	Smith Mrs Sat Walton		10	6
August	Emery Mrs Walton		10	6
November	Williams Mrs Falkenham	1	1	0
November	Carver Mrs Felixstowe		10	6
December	Jersey Mrs George Felix		10	6
December	Crane Mrs Felixstowe	1	1	0
December	Chenery Mrs Felixstowe	1	1	0

Cr	1862	£	s	d
Feb 5	Rushbrook Mrs Puer		10	6
Feb 5	Everitt Mrs Puellae	1	11	6
March 3	Lock Mrs Puer		10	6
April 24	Newsom Mrs Puer		10	6
April 2	Hubbard Mrs Puellae		10	6
June 14	Steward Mrs Puellae	1	11	6
April 6	Allen Mrs Puellae		10	6
April 9	Durrant Mrs Puer		10	6
March 7	Coram Mrs Puellae short	1	1	—
June 12	Coram Mrs Puer		10	6
May 24th	Rushbrooke Mrs A Puer		10	6
Aug 11th	Pope Mrs Puer	1	11	6
May 29	Lord Mrs Puer		10	6
June 12	Corrie Mrs Puer		10	6
May 29	Barber Mrs Puer		10	
Sept 22	Rowe Mrs Puer		10	6
July 25	Block Mrs Puer		10	—
Oct 25	Newman Mrs Puellae		15	—
Oct 2nd	Lunn Mrs Puer		10	6
Aug 7 10	Emery Mrs Puellae		10	6
Nov 8th	Williams Mrs Puellae	1	1	—
Nov 10th	Carver Mrs Puer		10	6
Nov 10th	Kersley Mrs Puer		10	6
Nov 24th	Crane Mrs Puer	1	1	—
Dec 22nd	Chenery Mrs Puer	1	1	—

Dr	1863	£	s	d
Febry	Chenery Mrs Felixstowe	1	1	
Febry	Durrant Mrs John Walton		10	6
Janry	Smith Mrs Wm Sudbury		10	6
Janry	Harbert Mrs Walton		10	6
March	Kerrington Mrs Walton		10	6
January	Cowie Mrs Walton		10	6
March	Abbott Mrs Wm Walton	1	11	6
April	Learmouth Mrs Felixstowe		10	6
April	Coram Mrs Chs Walton		10	6
March	Cowers Mrs Walton	1	11	6
February	Lambert Mrs Walton		10	6
April	Watts Mrs Wm Felixstowe		10	6
June	Woods Mrs R. Walton	1	11	6
July	Smith Mrs John Walton		10	6
June	Court Mrs George Trimley		10	6
July	Fenn Mrs R. Cowers Trimley		10	6
July	Cowers Mrs R. Cowers		10	6
July	Simmons Mrs Walton		10	6
September	Branch Mrs Felixstowe		10	6
August	Durrant Mrs L. Walton		10	6
December	Barber Mrs G. Walton		10	6
September	Colley Mrs Walton		10	6
August	Woods Mrs John Walton		10	6
December	Coram Mrs Walton		10	6
November	Walsh Mrs Felixstowe	3	3	
November	Coram Mrs Felixstowe	1	1	
December	Cowie Mrs Felixstowe	1	1	
November	Browning Mrs Walton		10	6
December	Knott Revd Walton		10	6

Cr	1863	£	s	d
22/12/62	Chenery Mrs Pueri	1	1	
7/2/63	Durrant Mrs Pueri		10	6
20/1/63	Smith Mrs Pueri		10	—
5/1/63	Harbert Mrs Puellae		10	6
26/2/63	Kerrington Mrs Pueri			
21/1/63	Cowie Mrs Pueri		10	6
7/4/63	Abbott Mrs Pueri	1	11	6
20/3/63	Learmonth Mrs Puellae		10	6
9/6/63	Coram Mrs Puellae		10	6
20/3/63	Cowers Mrs Puellarum	1	11	6
15/8/63	Lambert Mrs Puellae		10	6
6/5/63	Watts Mrs Puellae		10	—
10/7/63	Woods Mrs Pueri	1	11	6
12/8/63	Smith Mrs Pueri	6	10	6
22/6/63	Lort Mrs G. Puellae			
7/8/63	Fenn Mrs R. Puellae		10	6
28/7/63	Lowe Mrs Puellae		10	6
4/8/63	Jennays Mrs Puellae			
13/9/63	Branch Mrs Puellae		10	6
~~2/10/63~~	Durrant Mrs Pueri			
2/10/63	Lolly Mrs Pueri		10	6
12/8/63	Woods Mrs Pueri			
19/11/63	Coram Mrs Pueri		10	6
7/10/63	Walsh Mrs Pueri	3	3	
25/11/63	Coram Mrs Pueri	1	1	
5/11/63	Browning Mrs Puellae		10	6
	Knott Mrs		10	6

Dr.	1864		£	s	d
January	Barber Wm & Co Walton			10	6
January	Brown Mrs Felixstowe		1	1	
February	Harbert Mrs Walton			10	6
March	Carter Mrs Bawdsey Ferry			10	6
March	Clarke Mrs Bawdsey Ferry		1	1	
July	Cullen Mrs Walton		1	1	
June	Steward Mrs Walton		1	11	6
May	Bailey Mrs Felixstowe		1	11	6
July	Williams Mrs Bucklesham		1	11	6
August	Block Mrs Wm Walton			10	6
May	Hart Mrs Walton		+	11	6
June	Durrant Mrs C: Walton			10	6
July	Cart Mrs Sat Trimley			10	6
August	Cart Mrs Wm Trimley			10	6
August	Passfield Mrs Light House		1	0	0
October	Dersey Mrs G. Felixstowe			10	6
Sept.	Fenn Mrs R. Trimley			10	6
October	Newson Mrs J. Bawdsey Ferry			10	6
Sept.	Aldis Mrs J. Walton		1	1	-
Sept.	Allenby Mrs Felixstowe		5	-	-
August	Green Miss Trimley		1	1	-
October	Hubbard Mrs Trimley			10	6
October	Cowie Mrs D. Hunton Road			10	6
December	Goldsmith Mrs R. Tower			10	6
November	Scannel Mrs Walton			10	6
December	Smith Mrs Sat Walton			10	6
October	Goram Mrs Felixstowe		1	1	
December	Durrant Mrs L. Felixstowe			10	6
December	Tillett Mrs Walton			10	6

Dr	1864	£	s	d
2/1/64	Barbers Wd. Puellae		10	6
16/2/64	Brown Wd. Puellae	1	1	
17/1/64	Harbert Wd. Puellae		10	6
7/4/64	Carter Wd. Pueri		10	6
23/3/64	Clarke Wd. Pueri	1	1	
29/6/64	Cullen Wd. Puellae	1	1	
25/5/64	Steward Wd. Puellae	1	11	6
31/5/64	Bailey Wd. Puellae	1	11	6
19/7/64	Williams Wd. Pueri	1	11	6
20/8/64	Stock Wd. Pueri		10	6
26/5/64	Hart Wd. Puellae	1	11	6
17/6/64	Durrant Wd. C. Puellae		10	
1/7/64	Gort Wd. Sd. Pueri		10	6
8/9/64	Gort Wd. Wm. Pueri		10	6
16/8/64	Pattiful Wd. Pueri	1	0	0
12/9/64	Bensey Wd. Puellae		10	6
23/8/64	Penn Wd. Pueri		10	6
18/9/64	Newsom Wd. Puellae		10	6
4/10/64	Aldis Wd. Puellae	1	1	
24/9/64	Allenby Wd. Pueri	5		
29/8/64	Green Miss Pueri	1	1	
31/10/64	Stabbard Wd. Puellae		10	6
16/10/64	Cowie Wd. D. Puellae		10	6
3/1/65	Goldsmith Wd. Puellae		10	
3/11/64	Scammel Wd. Pueri		10	6
27/11/64	Smith Wd. Puellae		10	6
24/10/64	Coram Wd. Puellae short			
4/12/64	Durrant Wd. L. Pueri		10	6
15/12/64	Tillett Wd. Pueri		10	6

1865	1865.		£	s	d
January	Chenery	Mrs.	Felixstowe	1	1	
January	Studd	Mrs.	Felixstowe		10	6
March	Capon	Mrs.	Walton	1	1	
March	Jones	Mrs.	Walton		10	6
January	Goldsmith	Mrs.	Walton		10	
March	Smith	Mrs.	Coulet		10	
April	Crane	Mrs.	Felixstowe	1	1	
March	Bugg	Mrs.	Sol. Felixstowe	1	11	6
March	Hall	Maria	Felixstowe		10	6
March	Lambert	Mrs.	Walton		10	6
May	Barber	Mrs.	Henry Walton		10	6
April	Rushbrooke	Mrs.	Trimley		10	6
April	Brown	Mrs.	Sandsey Ferry		10	6
March	Emery	Mrs.	Walton		10	6
May	Ward	Mrs.	Walton	1	1	
April	Downing	Mrs.	F. Felixstowe	1	1	-
August	Durrant	Mrs.	C. Walton		10	6
July	Hulbert	Mrs.	Felixstowe	1	11	6
September	Carver	Mrs.	Felixstowe		10	6
June	Peerless	Mrs.	Felixstowe		10	6
September	Gorams	Mrs.	Sa. Walton		10	6
August	Abbott	Mrs.	W. Walton	1	11	6
September	Lucock	Mrs.	Felixstowe		10	6
September	Leggett	Mrs.	Trimley	1	15	-
September	Walker	Mrs.	Trimley Wm.		10	6
October	Fenn	Mrs.	Trimley		10	6
Sept.	Streatfield	Mrs.	Walton		10	6
October	Harrington	Mrs.	Walton		10	6
October	Durrant	Mrs.	S. Walton		10	6
November	Barber	Mrs.	S. Trimley		10	6
December	Studd	Mrs.	Felixstowe		10	6
December	Goram	Mrs.	Felixstowe	22 1	4 11	6 6

Cr	1865	£	s	d
18/4/65	Chenery Mrs. Pellarum	1	1	
16/1/65	Studd Mrs Puellae		10	6
20/4/65	Capon Mrs Puellae			
31/3/65	Jones Mrs Puellae.		10	6
3/1/65	Goldsmith Mrs Puellae		10	
10/4/65	Smith Mrs Pueri		10	—
30/3/65	Crane Mrs Puellae	1	1	
6/3/65	Trigg Mrs Puellae	1	11	6
16/4/65	Hall Maria Pueri		10	6
31/3/65	Lambert Mrs Puellae		10	6
12/5/65	Barber Mrs A. Pueri			
29/4/65	Rushbrooke Mrs Pueri		10	6
13/7/65	Brown Mrs Pueri		10	6
4/3/65	Emeny Mrs Pueri		10	6
12/5/65	Brand Mrs Pueri	1	1	
21/6/65	Downing Mrs Pueri	1	1	
25/4/65	Durrant Mrs L. Pueri		10	6
1/9/65	Hulbert Mrs Pueri	1	11	6
6/10/65	Carver Mrs Pueri		10	6
4/6/65	Peerless Mrs Pueri hort		10	6
16/9/65	Goram Mrs Puellae		10	6
3/9/65	Abbott Mrs Puellae	1	11	6
21/9/65	Lucock Mrs Pueri		10	6
17/9/65	Leggett Mrs Puellae		15	—
3/9/65	Warner Mrs Pueri		10	6
16/11/65	Fenn Mrs Pueri		10	6
14/10/65	Heathfield Mrs Puellae		10	6
3/11/65	Kerrington Mrs Pueri			
4/11/65	Durrant Mrs L. Pueri		10	6
3/11/65	Barber Mrs L. Pueri		10	6
26/12/65	Goram Mrs Pueri	1	11	6

1866	1866			
February	Carr Mrs	Felixstowe	10	6
February	Billington Mrs	Walkerdam	1 1	-
		con'ty 21. Cash' Nos 11.		
April	Brown Mrs	Felixstowe	1 1	
February	Jolly Mrs	Walton	10	6
April	Thomas Mrs	Felixstowe	1 1	
January	Studd Mrs	Felixstowe	10	6
April	Bugg Mrs S.	Felixstowe	1 11	6
February	Jennings Mrs	Walton	10	6
March	Spenceley Mrs	Walton	1 1	
April	Durrant Mrs Sal	Walton	10	6
May	Durrant Mrs E.	Felixstowe	10	6
May	Jersey Mrs G.	Felixstowe	10	6
May	Steward Mrs	Walton	1 1	
June	Snell Mrs	Trimley	1 1	
August	Cort Mrs Sal	Trimley	10	6
August	Crane Mrs	Felixstowe	1 1	
August	Newson Mrs L.	Felixstowe	10	6
October	Block Mrs W.	Walton	10	6
August	Rushbrook Mrs	Trimley	10	6
Dec	Allenby Mrs	Felixstowe	5 -	-
October	Jones Mrs L.	Lower	10	6
October	Durrant Mrs C.	Walton	10	6
November	Leamuel Mrs	Walton	10	6
December	Jennings Mrs G.	Trimley	10	6
December	Chenery Mrs W.	Felixstowe	1 1	
November	Goram Mrs	Walton	10	6
October	Warner Mrs W.	Trimley	10	6
December	Carter Mrs	Felixstowe	10	6

1866

11/2/66	Carr	Mrs	Puellae	—	10 6
9/3/66	Addington	Mrs	Pueri	1	1 —
30/4/66	Brown	Mrs	Puellae	1	1
2/4/66	Selby	Mrs	Pueri		10 6
1/1/66	Thomas	Mrs	Pueri Instr	1	1
7/4/66	Studd	Mrs	Puellae		
7/4/66	Bragg	Mrs	Pueri	1	11 6
24/2/66	Simmys	Mrs	Pueri		
22/3/66	Spenceley	Mrs	Pueri	1	1
14/4/66	Durrant	Mrs	Pueri		10 6
7/6/66	Durrant	Mrs	C. Puellae		10 6
5/6/66	Bersey	Mrs	G. Pueri		10 6
7/6/66	Steward	Mrs	Pueri		
6/7/66	Snell	Mrs	Pueri	1	1
9/9/66	Cort	Mrs	Sal Puellae		10 6
19/8/66	Crane	Mrs	Pueri	1	1
18/8/66	Newson	Mrs	Puellae		10 6
3/9/66	Block	Mrs	Pueri		10 6
18/8/66	Rushbrooke	Mrs	Puellae		10 6
15/12/66	Allenby	Mrs	Puellae	5	— —
1/11/66	Lowe	Mrs	Pueri		10 6
7/10/66	Durrant	Mrs	C. Puellae		10 6
31/10/66	Scammel	Mrs	Pueri		10 6
25/10/66	Simmys	Mrs	G. Pueri		10 6
23/12/66	Chenery	Mrs	Pueri	1	1
28/11/66	Gorham	Mrs	Puellae		10 6
18/10/66	Warner	Mrs	Puellae		10 6
22/12/66	Carter	Mrs	Pueri		10 6

1867			£	s	d
Saturday	Carter	Mrs Felixstowe Ferry		10	6
January	Cort	Mrs Wm Trimley		10	6
February	Abbott	Mrs Jr. Walton	2	2	0
February	Brown	Mrs Felixstowe Ferry		10	6
February	Ward	Mrs Walton	1	1	-
March	Lambert	Mrs Walton		10	6.
March	Green	Miss Trimley	1	1	
May	Rugg	Mrs S. Felixstowe	1	11	6.
April	Smith	Mrs Walton		10	6
June	Hubbard	Mrs Trimley		10	6
June	Taylor	Mrs Felixstowe		10	6
July	Woods	Mrs Walton (owed)	2	2	0
August	Cullen	Mrs Walton	1	11	6
August	Penn	Mrs R. Walton Ferry		10	6
September	Jennings	Mrs G. Thorpe (Jan'y May 6th)		10	6
October	Barker	Mrs Henry Walton		10	6
October	Smith	Mrs Candler		10	6
December	Brown	Mrs Felixstowe	1	1	
October	Davis	Mrs Felixstowe	1	1	
December	Carr	Mrs Felixstowe		10	6
December	Reeve	Mrs Dr. Walton		10	6
December	Jones	Mrs D. Tower		10	6

	1867	£	s	d
22/12/66	Carter Wd. Pueri		10	6
8/2/67	Cortner W. Puellae		10	6
3/2/67	Abbott Ux. W. Puellae	2	2	-
8/4/67	Brown Wd. Puellae		10	6
27/4/67	Ward Wd. Puellae	1	1	-
16/8/67	Lambert Wd. Pueri		10	6
27/2/67	Green Wid. Puellae	1	1	-
24/4/67	Bugg Wd. Pueri	1	11	6
22/4/67	Smith Wd. Puellae		10	6
27/5/67	Hubbard Wd. Puellae		10	6
24/12/67	Taylor Wd. Pueri		10	6
4/9/67	Woods Wd. Pueri	2	2	-
1/9/67	Cullen Wd. Puellae	1	11	6
5/8/67	Fenn Wd. Pueri		10	6
20/8/67	Jennings Wd. Pueri		10	6
4/10/67	Barber Wd. H. Puellae			
12/10/67	Smith Wd. Puellae		10	6
26/12/67	Brown Wd. Pueri	1	1	-
22/11/67	Davis Wd. Pueri	1	1	-
31/12/67	Carr Wd. Puellae		10	6
8/12/67	Reve Wd. Dr. Puellae		10	6
28/12/67	Jones Wd. Puellae		10	6

1868

January	Crane Mrs	Felixstowe	1	1	
January	Lower Mrs	Wadgate		10	6
January	Downing Mrs F	Felixstowe	1	1	
February	Seamuel Mrs	Walton		10	6
April	Carver Mrs S	Felixstowe		10	6
March	Clifford Mrs	Walton		10	6
April	Newson Mrs Thos	Felixstowe		10	6
February	Leggett Mrs	Trimley	1	1	
March	Spenceley Mrs	Lower Walton	1	1	
April	Rushbrooke Mrs W.	Trimley		10	6
April	Kettle Sarah	Walton		10	6
April	Hall Mrs W.	Felixstowe		10	6
May	Durrant Mrs L.	Felixstowe		10	6
June	Durrant Mrs John	Walton		10	6
May	Barber Mrs L.	Lower Walton		10	6
April	Fenn Mrs E. G.	Walton	3	3	-
May	Steward Mrs	Walton	1	1	-
May	Durriant Mrs Elijah	Felixstowe		10	6
July	Marks Mrs	Felixstowe	1	1	
June	Smith Mrs W.	Trimley		10	6
October	Bugg Mrs Joel	Felixstowe	1	11	6
August	Ward Mrs	Walton	1	1	
September	Lattow Mrs	Felixstowe		10	6
August	Lemmings Mrs G.	Walton		10	6
October	Block Mrs W.	Walton		10	6
August	Page Mrs	Walton	2	2	
October	Cordy Mrs Sal	Felixstowe	1	11	6
October	Cort Mrs Sal	Trimley		10	6
December	Downing Mrs L.	Felixstowe	1	11	6
November	Cowie Mrs W.	Trimley		10	6
December	Carver Mrs Sal	Felixstowe		10	6
December	Fenn Mrs R.	Lower Walton		10	6
December	Servis Mrs	Felixstowe	4	4	
December	Creasy Mrs	Walton		10	6

1868

7/2/68	Craie Wm Pueri	1	1	
28/12/67	Jones Wm Puellae		10	6
13/1/68	Downing Wm Pueri	1	1	
28/2/68	Scammell Wm Puellae		10	6
12/6/68	Carver Wm L. Puellae		10	6
15/4/68	Clifford Wm Pueri		10	—
16/4/68	Newsom Wm Pueri		10	6
23/3/68	Leggett Wm Puellae			
8/5/68	Speasly Wm Simon Pueri	1	1	
19/3/68	Rushbrook Wm Pueri			
16/3/68	Kettle Sarah Puellae		10	—
26/4/68	Hall Wm N. Pueri		10	6
10/6/68	Durrant Wm L Pueri		10	6
23/6/68	Durrant Wm L. Puellae		10	6
14/5/68	Barber Wm L. Pueri			
5/4/68	Jenn Wm Puellae	3	3	
22/5/68	Steward Wm Pueri			
13/6/68	Durrant Wm E. Puellae		10	6
1/9/68	Marks Wm Pueri	1	—	—
11/6/68	Lunts Wm Puellae	4	10	6
12/10/68	Bragg Wm Puellae	1	11	6
27/8/68	Ward Wm Pueri	1		
8/9/68	Lattow Wm Puellae		10	6
29/8/68	Simmons Wm Puellae			
7/11/68	Block Wm Puellae			
7/8/68	Page Wm Pueri	2	2	—
25/10/68	Cordy Wm Puellae	1	11	6
9/10/68	Lort Wm Puellae		10	6
9/12/68	Downing Wm L. Pueri	1	11	6
29/10/68	Cowie Wm N. Puellae		10	6
24/12/68	Carver Wm Puellae		10	6
			1	
8/12/68	Lewis Wm Puellae	4	4	

1869.

February	Carter	Wm	Felixstowe Ferry		10 6
January	Woods	Wm	Walton	2	2
January	Abbots	Wm	W. Walton	2	2
January	Neal	Wm	Walton	1	1
February	Lowe	Wm	Wadgate Lower		10 6
January	Emery	Wm	Walton		10 6
January	Fenn	Wm	Walton		10 6
January	Durrant	Wm	C. Walton		10 6
February	Lolley	Wm	Felixstowe		10 6
March	Lambert	Wm	G. Norton		15 -
March	Gorum	Wm	Clopton Walton		10 6
March	Brook	Wm	Felixstowe	2	2 -
March	Crane	Wm	Felixstowe	1	1
March	Hockley	Wm	W. Walton		10 6
April	Carr	Wm	Felixstowe		10 6
April	Warner	Wm	W. Trimley		10 6
April	Smith	Wm	Sl Walton		10 6
June	Francis	Wm	Felixstowe		15 -
May	Cook	Wm	Falkenham		15 -
May	Capon	Wm	Walton	1	1 -
April	Lambert	Wm	Walton		10 6
April	Gorum	Wm	Sl Walton		10 6
May	Mays	Wm	W Walton		10 6
April	Spurling	Wm	Felixstowe		10 6
May	Knights	Wm	Sl Walton		10 6
May	Lee	Wm	Daniel Felixstowe	1	1
May	Hall	Maria	Felixstowe		10 6
May	Rush	Ann	Felixstowe		15 -
August	Hall	Wm	Holland Park	5	5 -
August	Mc Grath	Wm	Walton		15 -
October	Downing	Wm	F Felixstowe	1	11 6
September	Youngs	Wm	Felixstowe Ferry	2	2 -
September	Gort	Wm	W Trimley		10 6
				32	18 6

1869.

24/2/69	Carter	Mrs	Pueri		10 6
25/1/69	Woods	Mrs	Puellae	2	2
12/1/69	Abbott	Mrs	M. Pueri	2	2
14/2/69	Beaill	Mrs	Pueri	1	1 -
22/3/69	Lines	Mrs	Puellae		10 6
9/1/69	Emeny	Mrs	Puellae		10 6
10/1/69	Fenn	Mrs	Pueri		10 6
10/1/69	Durrant	Mrs	C Puellae		10 6
13/2/69	Lolly	Mrs	Puellae		10 6
11/2/69	Lambert	Mrs	G. Puellae		15
26/4/69	Goram	Mrs	Puellae		10 6
26/3/69	Brook	Mrs	Puellae	2	2
13/3/69	Crane	Mrs	Pueri		
3/4/69	Hockley	Mrs	Pueri		10 6
16/5/69	Carr	Mrs	Puellae		10 6
25/4/69	Warner	Mrs	Pueri		
5/4/69	Smith	Mrs	Pueri		10 6
15/6/69	Francis	Mrs	Puellae		15
14/6/69	Cook	Mrs	Pueri		15
4/5/69	Capon	Mrs	Pueri		
29/5/69	Lambert	Mrs	Puellae		10 6
8/5/69	Goram	Mrs	Pueri		10 6
1/7/69	Hays	Mrs	Puer		10 6
20/4/69	Spurling	Mrs	Pueri		10 6
8/5/69	Knights	Mrs	Pueri		10 6
19/5/69	Lee	Mrs	Pueri	1	1
6/6/69	Hall	Maria	Puellae		10 6
14/5/69	Rush	Ann	Puellae		15
17/4/69	Hall	Mrs	Pueri	5	5 -
24/10/69	Mc	Crath	Pueri		
19/10/69	Downing	Mrs	Puellae		
15/8/69	Panzera	Mrs	Pueri	2	2
28/9/69	Cort	Mrs	M. Puellae		

			32	12	6
	1869		32	12	6
October	Speasly	Mrs Trumley	1	1	
October	Jennings	Mrs G. Thorpe Comm		10	6
October	Cowie	Mrs John Trumley		15	-
December	Cordy	Mrs R. Mattox	2	2	
November	Rogg	Mrs Joel Felixstowe	1	11	6
October	Steward	Mrs Felixstowe Ferry		15	-
November	Deeley	Mrs Joseph Trumley		10	6
November	Durrant	Mrs D. Mattox		10	6
November	Payne	Mrs Newbourne		10	
		42	40	16	6

1869

9/11/69	Spenley Wm Pueri.	1	1	
22/11/69	Lemmings Wm Puellae		10	6
8/10/69	Cowie Wm I Puellae			
8/12/69	Cordy Wm H. Pueri	2	2	–
6/11/69	Trigg Wm Puellae	1	11	6
25/10/69	Steward Wm Pueri		15	–
5/12/69	Derby Wm Puellae		10	6
11/12/69	Dowrant Wm D Pueri		10	6
11/1/69	Payne Wm Pueri			

1870

January	Barber	Wm	He Walton		10	6
January	Smith	Wm	W. Walton		10	6
March	Bloomfield	Wm	John Walton	1	1	
April	Woods	Wm	Lower Walton	2	2	
September	Condy	Wm	Sat Felixstowe	2	2	-
March	Mc Cue	Wm	Felixstowe		10	6
April	Boon	Wm	Walton	1	1	
May	Watts	Emily	Felixstowe		15	-
April	Hubbard	Wm	Trimley		10	6
May	Rushbrook	Wm	W. Trimley		10	6
May	Plant	Wm	Sam[l] Walton		10	6
June	Chaplin	Wm	Walton	1	1	
July	Durrant	Wm	L. Felixstowe		10	6
June	Norton	Wm	Felixstowe Ferry	1	1	
September	Kelly	Wm	P. Siver		15	
July	Catt	Wm	Ann Walton		10	6
July	Dawe	Wm	Wm[m] Lower Walton		10	6
July	Backhouse	Alice	Walton	1	1	
August	Jones	Wm	Walton		10	6
June	Crane	Wm	Felixstowe	1	1	
September	Spurling	Wm	Felixstowe		10	6
September	Gray	Wm	W. Walton		10	6
September	Moore	Wm	D. Felixstowe	1	1	
September	Goodwin	Wm	22 Walton		10	6
August	Browning	Wm	Felixstowe		15	-
October	Golding	20. 1m	Wm Walton	1	1	
September	Loppke	Wm	C. Walton		15	-
October	Gort	Wm	Sat Trimley		10	6
October	Newson	Wm	T. Felixstowe		15	-
October	Warner	Eliz[th]	21 Felixstowe		10	6
September	Abbott	Wm	Lower Walton	2	2	-
October	Beail	Wm	Walton	1	1	
			32.	27	7	6

1870

1/1/70	Barber Mrs H.	Pueri		1
28/2/70	Smith Mrs	Puellae		10 –
5/4/70	Bloomfield Mrs.	Pueri	1	1
6/5/70	Woods Mrs	Puellae	2	2
12/9/70	Cordy Mrs	Pueri	2	2
9/3/70	McCue Mrs	Puellae		10 6
2/6/70	Moon Mrs	Pueri	1	1
15/3/70	Watts Emily	Puellae		15
11/4/70	Hubbard Mrs	Pueri		10 6
10/5/70	Rushbrook Mrs	Pueri		
25/6/70	Plant Mrs L.	Puellae		10 6
28/6/70	Chaplin Mrs	Pueri Short	1	1 –
31/7/70	Durrant Mrs	Pueri Short		10 6
20/6/70	Norton Mrs	Puellae	1	1
7/10/70	Kelly Mrs	Puellae		15
25/6/70	Catt Mrs	Pueri		10 6
9/8/70	Dawe Mrs	Puellae		10 6
5/7/70	Backhouse Alice	Puellae	1	1
10/8/70	Jones Mrs	Pueri		10 6
11/6/70	Crane Mrs	Pueri		
11/10/70	Spurling Mrs	Pueri		10 6
1/10/70	Mays Mrs W.	Pueri		10 6
18/9/70	Moore Mrs D	Pueri	1	1
25/10/70	Goodwin Mrs	Pueri		10 6
19/9/70	Browning Mrs	Puellae		15 –
19/10/70	Golding Mrs	Pueri	1	1
2/9/70	Topsfole Mrs C	Puellae		15 –
20/8/70	Court Mrs	Pueri		10 6
14/10/70	Newsom Mrs	Puerorum		15 –
18/11/70	Warner E.	Puellae Short		10 6
25/9/70	Abbott Mrs	Pueri	2	2
20/10/70	Beall Mrs	Pueri	1	1

1871

January	Warner	Wm.	W.	Trimley		10 6
February	Ward	Wm.	Walton	1	11 6	
February	Allenby	Wm.	Felixstowe	5		
February	Dewsnap	Wm.	C.	Walton		10 6
January	Smith	Wm.	Ed.	Walton	1	1
January	Catto	Wm.	Felixstowe		10 6	
February	Cleary	Wm.	Martin	Trimley		10 6
January	Emery	Emma		Walton		10 6
May	Francis	Wm.	Felixstowe		15 -	
March	Bragg	Wm.	Joel	Felixstowe	1	11 6
April	Reade	Sarah		Walton		10 6
May	Cowie	Wm.	John	Trimley		15 -
June	Jennings	Wm.	J.	Walton		10 6
May	Lee	Wm.	David	Felixstowe	1	1
July	Hibbard	Wm.		Trimley		10 6
June	Goram	Wm.	L.	Walton		10 6
June	Jolly	Wm.		Felixstowe		10 6
August	Cordy	Wm.	W.	Walton	2	2
July	Catterwoul	Wm.	J.	Lower Walton		15 -
September	Wm. Cuc	Wm.	John	Felixstowe		15 -
August	Crane	Wm.		Felixstowe	1	1 -
August	Branch	Wm.		Felixstowe		15 -
November	Downing	Wm.	L.	Felixstowe	1	11 6
November	Woods	Wm.		Walton Grange	2	2 —
September	Smith	Wm.	W.	Walton Dock		10 6
August	Chaplin	Wm.		Walton	1	1
August	Barber	Wm.	L.	Lower Walton		10 6
August	Mc Gratt	Wm.		Walton		15 -
August	Carr	Wm.		Felixstowe		10 6
August	Steward	Wm.		Felixstowe		15
December	Thompson	Wm.	G.	Felixstowe	3	3
September	Capon	Wm.	Herbert	Walton	1	1
December	Fenn	Wm.	R.	Walton Ferry		10 6
December	Emery	Wm.		Walton	10	6
			33		32.	15 6

1871

22/1/71	Warner Mrs	Puellae		
16/1/71	Ward Mrs	Pueri		
9/3/71	Allenby Mrs	Pueri	✓5	
4/2/71	Durrant Mrs	E. Puellae	10	6
30/1/71	Smith Mrs	E. Puellae	✓1	1 —
22/2/71	Latta Mrs	Puellae	✓10	6
16/1/71	Chenery Mrs	Pueri	✓10	6
15/1/71	Emery Emma	Pueri	10	6
20/5/71	Francis Mrs	Pueri	✓15	—
13/3/71	Trigg Mrs	Jnr. Pueri	1.	11 6
6/4/71	Reece Sarah	Puellae	✓10	6
17/4/71	Cowie Mrs	Puellae Hunt		
7/6/71	Sinclair Mrs	Pueri	✓10	6
6/7/71	Lee Mrs D.	Puellae	✓1	
26/6/71	Hubbard Mrs	Puellae	✓10	6
11/6/71	Horan Mrs	L. Puellae	✓10	6
15/7/71	Colley Mrs	Pueri	10	6
19/8/71	Cordy Mrs	Pueri	✓2	2
25/7/71	Cattermoul Mrs	J Puellae	✓15	—
23/9/71	McCue Mrs	Pueri	✓15	—
28/7/71	Craig Mrs	Pueri		
13/8/71	Branch Mrs	Puellae	✓15	—
16/11/71	Downing Mrs	Puellae	1.	11 6
	Lee 1872			
11/9/71	Smith Mrs	Pueri		
24/9/71	Chaplin Mrs	Pueri	1	
20/7/71	Barber Mrs	L. Puellae		
10/9/71	McGrath Mrs	Puellae		
25/9/71	Carr Mrs	Puellae	✓10	6
10/9/71	Steward Mrs	Pueri	15	
2/9/71	Thompson Mrs	Puellae	3	3
4/9/71	Capon Mrs	Puellae		
28/10/71	Fenn Mrs	Puellae	15	
22/12/71	Emery Mrs	Puellae	10	6

1872.

January	Chapman	Wds	Lower Walton		15
February	Waller	Wds	E. Walton	1	1
February	Downing	Wds	F. Felixstowe	1	11 6
January	Knights	Wds	Walton		10 6
February	Catt	Wds	Anod. Walton		10 6
January	Woods	Wds	Walton	2	2
February	Pierce	Wds	Walton		15
February	Laws	Wds	H. Kirton	2	2
February	Loch	Wds	Walton		15
February	Jennings	Wds	E. Thorpe Cow.		10 6
February	Gales	Wds	Walton (Durrant)		15
February	Markham	Wds	Walton (Durrant)		15
March	Burrows	Wds	Felixstowe		15
March	Gorham	Wds	Sd Walton		10 6
April	Moore	Wds	D. Felixstowe	1	1
February	Taylor	Wds	P. Tower	1	1
March	Newson	Lane	Felixstowe	1	1
May	Jones	Wds	Walton		10 6
June	Topple	Wds	E. Cage Lane		15
June	Wheeler	Wds	Felixstowe Ferry		15
July	Markham	Wds	Jun Walton		15
May	Haskell	Wds	E. Walton		15
June	Friend	Wds	Lower Walton		15
July	Topple	Wds	W. Queen St		15
July	Speakeley	Wds	Trimley	1	1
June	Parker	Wds	Walton	1	11 6
June	Gooding	Wds	Walton		15
June	Bloomfield	Wds	Walton	2	2
July	Kerridge	Wds	24 Walton		15
August	Plant	Wds	W 27 Queen St		15
August	Murrell	Wds	24 Mill Lane		15
July	Lambert	Wds	E. Kirton		15
July	Cort	Wds	Sd. Trimley		10 6
				29	11

	1872			Cr by
9/1/72	Chapman	Wd	Puellae	15
13/2/72	Walker	Wd	Puellae	
23/3/72	Bowden	Wd	P. Puer	
17/1/72	Knights	Wd	Pueri	10 6
26/1/72	Catt	Wd	Puellae	10 6
5/1/72	Woods	Wd	Pueri	2 2 —
15/2/72	Pane	Wd	Pueri	15 —
11/1/72	Lord	Wd	Puellae	2 2 —
20/2/72	Josh	Wd	Puellae	15 —
11/2/72	Cunnip	Wd	Puellae x	10 6
16/2/72	Eales	Wd	Pueri	15 —
11/3/72	Markham	Wd	P. Puer x	15 —
30/3/72	Barrow	Wd	Puellae x	15 —
1/4/72	Lorain	Wd	Pueri	10 6
3/6/72	Moore	Wd	Puellae	1 1
23/2/72	Taylor	Wd	Puellae	1 1
13/3/72	Newton	Jane	Puellae x	1 1
6/4/72	Jones	Wd	Puellae	10 6
13/6/72	Topple	Wd	P. Puellae x	15 —
2/7/72	Wheeler	Wd	Pueri	15 —
15/5/72	Markham	Wd	J. Puer x	15 —
10/6/72	Haskell	Wd	Pueri	15 —
13/6/72	Friend	Wd	Pueri	15 —
30/6/72	Topple	Wd	H. Pueri	15 —
27/1/72	Speedley	Wd	Puellae	1 1 —
28/3/72	Parker	Wd	Pueri	
27/6/72	Cooley	Wd	Pueri	15 —
8/6/72	Bloomfield	Wd	Puerum	2 2 —
24/6/72	Kerridge	Wd	Pueri	15 —
20/8/72	Plant	Wd	Puellae	15
10/9/72	Thurrell	Wd	Pueri	15
27/6/72	Lambert	Wd	G. Pueri	15
15/7/72	Cort	Wd	Sal. Pueri x	10 6

1872			29	11	
July	Cheney	Wm Martin	Trimley	10	6
June	Ward	Mrs C. J.	Walton	1 11	6
July	Plant	Mrs Sam	Walton	15	
July	Cook	Mrs	Falkenham	15	
October	Plant	Mrs C.	Queen St	15	
July	Newson	Mrs Thos	Felixstowe	15	
July	Durrant	Mrs C. (100)	Walton	15	
August	Hayes	Mrs	Walton (Castle)	15	
September	Rice	Mrs	Felixstowe	15	
November	[illegible]		Walton	15	
October	Dawdson	Mrs	Queen St	15	
September	Nugg	Mrs	Sock Felixstowe	1 11	6
September	Foon	Mrs	Walton	1 1	
October	Carver	Mrs	Trimley	15	
October	Francis	Mrs	Felixstowe	15	
October	Thurman	Mrs	Walton	1 15	6
October	Loanes	Mrs	Felixstowe	15	
October	Mosley	Mrs	R. Walton	15	
November	Durrant	Mrs	C. Walton	15	
November	Ward	Mrs	J. Felixstowe	1 4	6
December	Ellis	Mrs	Trimley	15	
December	Carr	Mrs	Felixstowe	15	
November	Durrant	Mrs	Thos Walton	15	
February	Carver	Mrs	Sat Felixstowe	15	
December	Cordy	Mrs	Sat Felixstowe	2 2	
			£	53 1	6

1872.

6/7/72	Cheney	Wm	Pueblo	10 6
6/7/72	Ward	Wm	Pueblo	
24/7/72	Plant	Wm	Pueblo	15
8/8/72	Cook	Wm	Pueblo	15
19/11/72	Plant	Wm	Pueblo	15
11/8/72	Newton	Wm	Pueblo	15
26/7/72	Durrant	Wm	Pueblo	15
28/9/72	Hayes	Wm	Pueblo	15
29/10/72	Dawe	Wm	Pueblo	15
22/10/72	Davidson	Wm	Pueblo	15
5/9/72	Bragg	Wm	Pueblo	1 11 6
25/9/72	Moore	Wm	Pueblo	1 1
9/10/72	Hanna	Wm	Pueblo	15
22/10/72	Thomas	Wm	Pueblo	15
8/12/72	Thrasher	Wm	Pueblo	1 11 6
22/10/72	Soares	Wm	Pueblo	15
4/10/72	Woolley	Wm	Pueblo	15
16/10/72	Durrant	Wm	Pueblo	15
26/12/72	Ward	Wm	Pueblo	1 1
24/12/72	Carr	Wm	Pueblo	15
4/12/72	Durrant	Wm	Pueblo	15
8/11/72	Carver	Wm	Hartus Fairchild	5
17/12/72	Cordy	Wm	Pueblo	2 2

1873

February	Barber	Mrs	G.	Walton	15
January	Mays	Mrs	W.	Walton	15
January	Beadle	Mrs		Walton	1 1
January	Ellis	Mrs		Trumley	15
February	Palmer	Mrs		Walton	15
March	Woods	Mrs		Walton	2 2
April	Crane	Mrs		Felixstowe	1 1
April	Markham	Mrs	T.	Walton	15
April	Gillingham	July 13	Esther	Felixstowe	15
[illegible]	Wallace	Mrs	G.	Walton	1 1
April	Capon	Mrs		Felixstowe	1 1
April	Ward	Mrs		Walton	1 1
July	Headdigan	Mrs	H.	Town	15
June	Carver	Mrs	Sam	Felixstowe	15
May	Stanforth	Mrs		Walton	15
July	Peck	Dec 22	Oct 1st	Felixstowe	15
Oct	Cordy	Mrs	W.	Walton	Dec 20. Can 2 2
June	Browning	Mrs		Felixstowe	15
July	Hall	Mrs	W.	Felixstowe	16
June	Rushbrooke	Mrs	H.	Trimley	15
June	Norton	Mrs		Felixstowe	1 1
August	Seaman	Mrs		Walton Ferry	15
June	Barber	Mrs	Sad	Walton	15
Sept	Peacock	Mrs	H.	Felixstowe	15
Sept	Pilgrim	Mrs		Felixstowe	15
Sept	Warner	Mrs	W.	Trimley	15
Sept	Rogers	Mrs		Walton	15
Sept	Day	Mrs	O	Walton	15
Oct	Chaplin	Mrs	J.	Walton	1 1
Oct	Topple	Mrs	C.	Walton	15
Oct	Woods	Mrs	Nathan	Walton	15
Sept	Bugg	Mrs	Joel	Felixstowe	1 11 6
Oct	Bloomfield	Mrs	J.	Walton	1 1 —
					31 3 6

1873.

11/3/73	Barber	Wm G.	Pueri	15 —
12/1/73	Mays	Wm	Pueri	15
9/1/73	Veale	Wm	Puellae	1 1
5/1/73	Ellis	Wm	Pueri	15
21/2/73	Palmer	Wm	Puellae	15
26/2/73	Woods	Wm	Puellae	2 2
2/3/73	Crane	Wm	Pueri	
12/5/73	Markham	Wm	J. Puellae	
30/5/73	Gillingham	Esther	Pueri	15
14/6/73	Waller	Wm	Pueri	
1/4/73	Capon	Wm	Pueri	
24/8/73	Ward	Wm	Puellae	
25/6/73	Maddgan	Wm	Pueri	15 —
14/6/73	Carver	Wm	L. Puellae	15 —
16/6/73	Standforth	Wm	Pueri	15
30/6/73	Peck	Wm	Pueri	15
9/10/73	Corby	Wm	W. Puellae	
22/5/73	Pobjoy	Wm	Pueri	
13/8/73	Hall	Wm	Wm Pueri	15
3/7/73	Rushbrooke	Wm	W. Pueri	
17/6/73	Norton	Wm	Puellae	1 1
11/8/73	Fenn	Wm	Puellae	15 —
18/6/73	Barber	Wm	Pueri	
16/9/73	Branch	Wm	H. Puellae	15
15/10/73	Pilgrim	Wm	Pueri Hort	15
12/9/73	Warner	Wm	W. Puellae	
6/11/73	Rogers	Wm	Puellae	15
21/9/73	Day	Wm	O. Pueri	
17/11/73	Chaplin	Wm	Pueri	
28/10/73	Topple	Wm	C. Puellae	
21/10/73	Woods	Wm	Pueri	15
3/10/73	Bugg	Wm	Puellarum	2 2
22/10/73	Bloomfield	Wm	Pueri	1 1

1873					31	3	6
November	Mc Cue	Wd	Felixstowe			15	-
October	Smith	Wd	E. Walton		1	1	-
Nov	Rushbrook 26.	Wd	W. Walton			15	-
Nov	Barber	Wd	E. Walton			15	-
Nov	Frost	Wd	C. Felixstowe			15	-
October	Branch	Wd	W. Walton			15	-
December	Newson	Wd	W. Felix Ferry			15	-
October	Taylor	Wd	Landguard		1	1	-
November	Downing 1st marr.	Wd	E. Felixstowe		1	11	6
November	Quinton	Elizabeth	Trimley			15	-
December	Lee	Wd	E. Felixstowe			1	-
December	Jolly	Wd	John Felixstowe			15	
December	Hobbs	Wd	Felixstowe			15	
December	Giles	Wd	Walton			15	-
December	Markham	Wd	E. Walton			15	
December	Panzera	Wd	Felixstowe				
	Wright	Susannah	Walton			15	
December	Branch	Wd	E. Felixstowe			15	
December	Ward	Wd	Eliz	Felixstowe		1	-
					45	3	-

50

1873.

11/11/73	McCue	Wm & Puer	15	-
3/11/73	Smith	Wm & E. Puer		
25/11/73	Rushbrook	Wm & Puer	15	
19/11/73	Harber	Wm & S. Puer	15	
1/12/73	Frost	Wm & C Puellae	15	-
5/11/73	Branch	Wm & M. Puer	15	-
6/12/73	Newson	Wm & M. Puer	15	
24/11/73	Taylor	Wm & Puellae	1	1 -
4/12/73	Downing	Wm & L. Puer		
24/12/73	Quinton	Eliza Puellae		15
	See 1874			
13/12/73	Colley	Wm & Puer		15
14/12/73	Hobbs	Wm & Puer		15
	See 1874			
23/12/73	Markham	Wm & G. Puellae		
26/12/73	Pawsey	Wm & Puellae		
28/11/73	Wright	Susannah Puellae		
23/12/73	Branch	Wm & L. Puellae		15
24/12/73	Ward	Wm & Edw & Puellae	1	1

1874

January	Plant	Mrs	Wk	High Row	15 -
February	Grayling (May 2.)	Mrs	Jerry	Watton	15
February	Abbott	Mrs	Wk	Watton	2 2 -
January	Ward	Mrs	Thos	Felixstowe	1 1
February	Wrightenda	Mrs		Watton	15
March	Jennings	Mrs	Arthur	Watton	15
January	Lee	Mrs	Samuel	Felixstowe	1 1
January	Giles	Mrs	Wm	Watton	15
January	Skipper	Mrs	Lince	Cottage	1 1
March	Gooding	Mrs	Fagborough		1 1
February	Rivrole	Mrs	Trimley		15
April	Chinery	Mrs	Martin	Trimley	15
March	Cook	Mrs	J	Falkenham	15
April	Plant	Mrs	C.	Felixstowe	15
April	Boon	Mrs		Watton	1 1
March	Laubert	Mrs	C.	Falkenham	15 -
March	Mays	Mrs	Thos	Watton	15 -
March	Jolly	Mrs	Fort	Cottage	15 -
June	Jennings	Mrs	G.	Trimley	15 -
June	Mann	Mrs	John	Trimley	15 -
April	Giles	Mrs	C.	Watton (Rota)	15
June	Moseley	Mrs	R.	Watton	15 -
June	Cox	Mrs		Watton (4 c. 2 m.)	2 2
August	Downing	Mrs	A.	Watton	2 2
August	Cort	Mrs	Sal	Trimley	15 -
August	Coram	Mrs	Sal	Watton	15
September	Mr. Studd (33)	Mrs	Henry	Watton (3 c. 1 m.)	16
September	Durrant	Mrs	C	Watton	15 -
August	Brawley	Mrs		Watton	16
September	Coram	Mrs	G.	Watton	15
September	Rockley	Mrs	W.	Watton	15 -
October	Topple	Mrs	W	Watton (27)	15
November	Cordy	Mrs	Sah	Trimley	2 2

1874

20/1/74	Plant Mrs H. Puellae			15 -
5/2/74	Crayling Mrs Puellae			15 -
15/1/74	Abbott Mrs H. Puellae		5	-

Lee 1873.

Lee 1873

8/3/74	Jennings Mrs A. Pueri			15 -
10/2/74	Lee Mrs Puellae	1	1	
16/1/74	Giles Mrs H. Puellae			15 -
11/1/74	Skipper Mrs Puellae			15 -
28/2/74	Cooding Mrs Puellae	1	1	-
26/2/74	Murrell Mrs Puellae			15 -
31/3/74	Chenery Mrs M. Pueri			10 6
30/3/74	Cook Mrs Puellae			
16/4/74	Plant Mrs C. Pueri sort			15 -
18/4/74	Boon Mrs Puellae	1	1	-
20/4/74	Lambert Mrs G. Puellae			15 -
27/4/74	Mayo Mrs J. Puellae			15 -
2/5/74	Dolly Mrs Puellae			
16/6/74	Jennings Mrs G. Puellae sort			10
31/5/74	Mann Mrs John Pueri			15 -
2/5/74	Giles Mrs G. Puellae			15 -
11/6/74	Crossley Mrs Puellae			15 -
27/7/74	Cox Mrs Pueri	2	2	
12/8/74	Downing Mrs A. Pueri	2	2	-
11/8/74	Sort Mrs Jas Pueri			15 -
5/8/74	Coram Mrs Pueri			15
26/9/74	Studd Mrs H. Puellae			
9/9/74	Durrant Mrs C. Pueri			15 -
9/8/74	Bailey Mrs Puellae			15 0
3/8/74	Coram Mrs G. Puellae			15 -
15/9/74	Hockley Mrs H. Puellae			15
2/10/74	Topple Mrs H. Puellae			15 -
24/11/74	Cordy Mrs Jas Pueri	2	2	-

1874

Sept^r	Markham	Wm^s J Walton	15	
October	Catt	Wm^s amos Walton	15	
October	Parker	Wm^s a. L. Walton	11	6
November	Plant	Wm^s S. Queen St	15	
October	Cracknell	Mabel Walton		
[illegible]				
[illegible]				
[illegible]				
[illegible]				
December	Duffy	Wm^s P. Lower	15	
December	Coles	Eliza Queen St	15	
December	Fisher	Wm^s Queen St	15	
December	Wells	Wm^s Queen St	15	
December	Newson	Wm^s J. Felixstowe	15	

1874

8/9/74	Markham	Wm L. Puellae	
28/9/74	Catt	Wm Amos. Puellae	1.
16/10/74	Parker	Wm Puellae	
6/12/74	Plant	Wm Puellae	
13/11/74	Cracknell	Matilda Pueri	
	Lee	1875	
	Lee	1875	
	Lee	1875	
	Lee	1875	
25/12/74	Duffy	Wm Puellae	15 —
19/12/74	Oakes	Eliza Puellae	
24/12/74	Fisher	Wm Puellae	15
27/12/74	Mills	Wm Pueri	15
28/12/74	Newson	Wm L. Puellae.	15

	1875				
~~January~~	~~Fisher Mrs Lincoln St.~~				15
~~January~~	~~Hill Mrs Lincoln St.~~				15
January	Francis Mrs Felixstowe	B			15
February	Moore Mrs D. Felixstowe	✓	1	1	-
March	Ward Mrs Thos Felixstowe		1	1	-
January	Plant Mrs Sam[l] Walton			15	-
~~January~~	~~Newton Mrs Felixstowe~~	~~Forty~~		15	-
February	Carr Mrs Felixstowe	✓		15	-
January	Knights Mrs Cor Queen St			15	-
February	Crane Mrs Felixstowe		1	1	-
January	Woods Mrs Walton		2	2	
January	Waller Mrs Walton		1	11	6
January	Mays Mrs Wm Walton			15	-
January	Fenton Mrs P. Kirton		1	1	
February	Howell Mrs Cor Trimley E.	✓		15	-
March	Eli Mrs Queen Street			15	-
March	Glandfield Mrs G. Trimley			15	-
March	Runnacles Mrs Walton	✓		15	-
Feb[y]	Bloomfield Mrs Walton		1	1	-
Feb[y]	Davidson Mrs Walton	✓		15	-
March	Rooke Mrs Walton			15	-

Cr. 1875

See 1873

See 1874

16/1/75 Francis Wm Pullar 15. 0

17/1/75 Plant Wm L. Pullar

See 1874

9/1/75 Knights Wm Pueri 15. 0

12/2/75 Crane Wm Pullar

1/1/75 Woods Wm Pueri

12/1/75 Waller Wm Pueri

6/1/75 Mays Wm N. Pueri

8/1/75 Fenton Wm Pueri

5/2/75 Bloomfield Wm Pullar

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