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THE WHALES

AND

DOLPHINS.

DIE WALTIERE—CETACEA—KITI,

(A Zoological Mnemonic)

PART II.

BY

RICHARD JOHN ANDERSON,

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PROFESSOR OF NATURAL HISTORY,

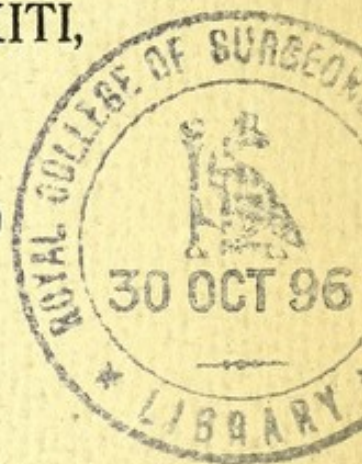
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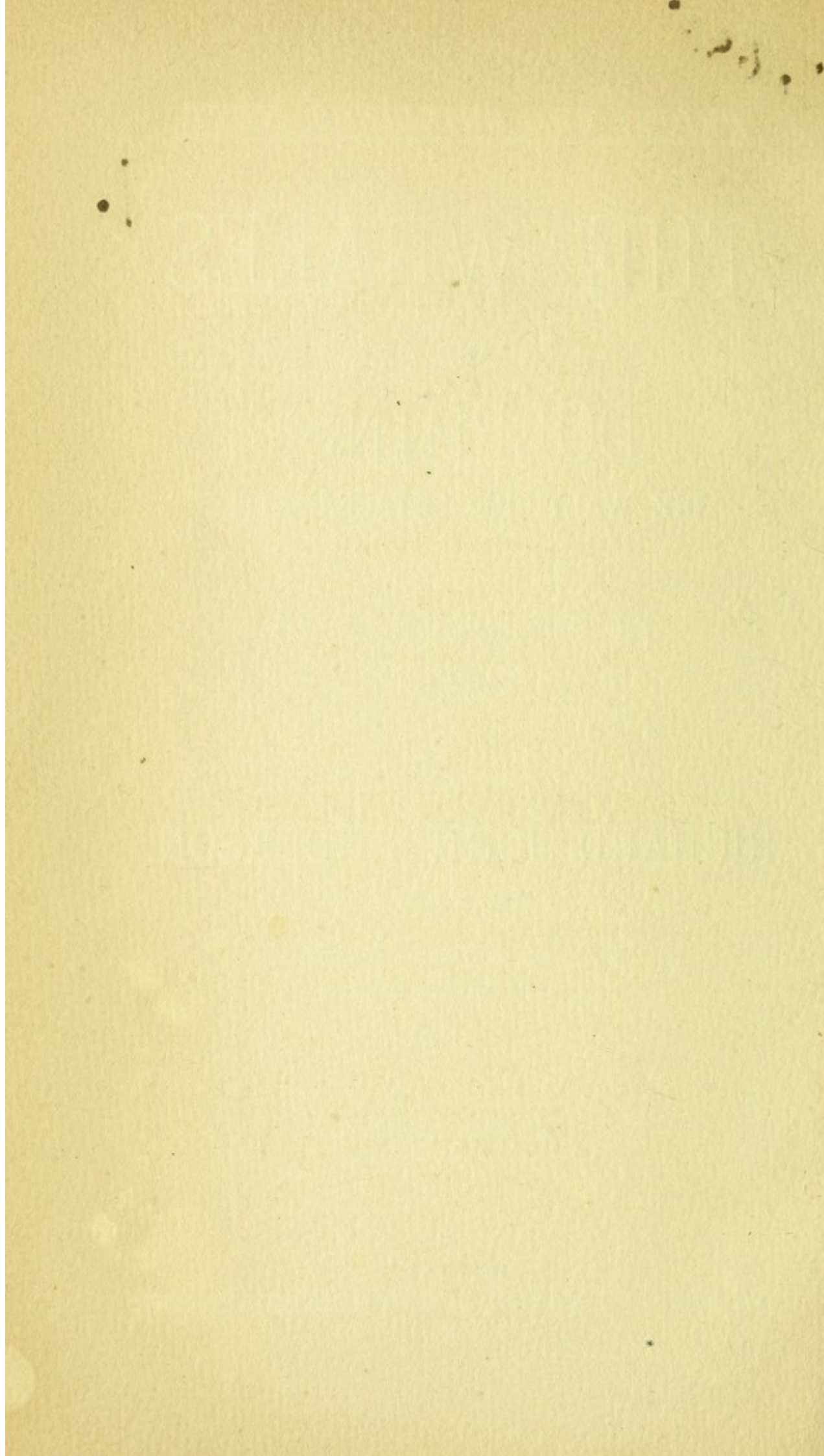
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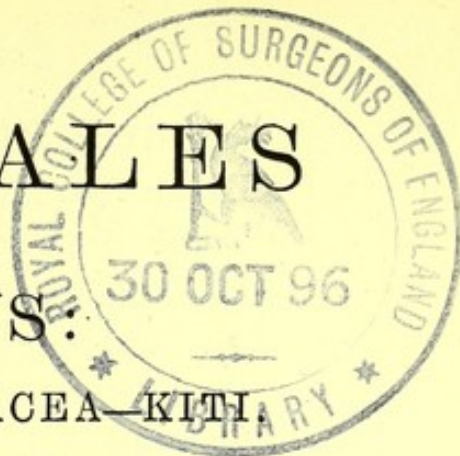
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THE WHALES

AND

DOLPHINS:

DIE WALTIERE—CETACEA—KITZ.



For Natant Mammals I would ask
The Muse to aid me in my task.
I fain would speak of fellow Creatures
That swimming count as chiefest features.
Seals, of course, live much on land
Near shores are the Sirenian band,
But whales and such would never dream
Of leaving water, as 'twould seem ;
Such beasts, not all of Modern birth,
Are Ancient progeny of Earth.
Great whales appeared in Eocene,
Others lived in the Miocene,
Zeuglodon had saw-like teeth,
Two roots *fastened* them beneath,
In some the teeth in front were cones,
Squalodon, Miocene, these owns.
'Tis well that I should make it plain
That, when one Eocene does name,
One means by that the London Clay,
Graveyards of a former day ;
Where of oddest shapes are buried
Beasts so singularly varied
Composite Photographs like here
Of horse, pig, elephant or deer.
The Miocene that's later found
Covers in Central France much ground.
Of beasts, gigantic as we learn
The Miocene did form the Cairn,
Such were the Mastodons so big,
Tusked tigers, and Primordial pig.

Mixed forms, indeed, there is no doubt
 Began then largely to drop out,
 These forms so ancient, as we think,
 The whales to seal tribe firmly link,
 And thus our steed we gaily steer
 From bears to seal-like monsters clear,
 From bears to dogs a distance far
 But yet good links there always are.
 To the Cats then Machairodus,
 Miocene Tiger, shows the road us.
 Indeed, the badger and the bear
 With pigs to claim kinship would dare.
 There are men who in sea otters
 Seek a link to beasts in waters.
 And others think that pigs of old
 Show Dolphin skull-marks clear and bold.
 (Perhaps there scarce is need to tell
 Porpoise, pork fish, the French name well.)
 Then if we take Sirenian Road
 We reach the oxen by this mode,
 What hobby this, you fain would ask,
 Its name I would no longer mask,
 You this may Evolution name,
 Descendz Doctrine known to fame.
 But let me warn unwary ones
 That land beasts, so the legend runs,
 Did in the early days of time
 Down from the rocky coasts then climb !
 And finding that the water bed
 Was pleasanter, least so 'tis said,
 They bade a long good-bye to land
 Where many an uncanny band
 Chased creatures to the air or trees,
 And these poor things drove to the seas.
 To seals from otters not in vain,
 You follow to the *Susu* strain,
 Last changing as it drew near sea,
 Thus Dolphin tribe began to be.

The legs like seals got turned behind,
 Legs thus you best for swimming find.
 At last the legs began to fail
 Perhaps they got close joined to tail.
 Traces of limbs, says Kükenthal,
 At side of rectum show in all ;
 But this is in the foetal state
 A sign of what they were till late.

I do not care to follow out
 How whales became so wonderous stout
 But, tho' so stout, I'd have you know
 They points in brain and motion show.
 They can do twenty miles an hour,
 And brain in weight and folds shows power,
 And tho' the port Establishment
 Is not by whales or Dolphins kent,
 To find them stranded is quite rare ;
 And they so many everywhere,
 Compared with those who plough the sea
 And hug the land they wish to flee.
 And tho' some cetes are tons in weight,
 And carry thus momentum great,
 It has but seldom been to tell
 That grave collision these befel.

Historic old tradition clings
 To stories of big whale-like things,
 For islands sailors some such took
 Like islands they did surely look.
 But when the sailors tried to cook,
 The whale this conduct could not brook,
 So turning once or twice his fluke,
 The pic-nic party he forsook.
 Slavonic folk-lore too asserts
 (The tale is told upon its merits)
 A fleet entire a whale did bolt
 (Think how the ships inside would jolt)

And afterwards a mystic ring
 Caused the whale them out to fling,
 A little perch (Jorsch) gave a hint
 By which the magic ring's bright glint
 Produced an action in the whale
 That caused the fleet out right to sail.
 A biggish whale it must have been
 For trees upon its back were seen,
 And mushrooms women tried to find
 On beard, and got them bear in mind,
 The little Jorsch (Perch) found the ring,
 Enclosed in Casket, big to bring,
 A school of Herrings failed to rise it,
 The Dolphins did that, History says it,
 Thus the hidden ring was found
 Just when the Sun begins its round.
 The story, no doubt, took its rise
 'Cause setting sun down ocean hies,
 The setting sun would seem to drop
 Into some ocean creature's crop,
 The simple men, without a datum,
 Said whale bolted sun or ate him.
 If that were so it seems quite clear
 It would next day be awkward here,
 If sun did not his course then steer
 Out of the mouth, or eye, or ear.

Cetacea as we name the whales
 Move through the water with their tails
 (Whale, or wheel fish, the rolling beast,
 It is like rolling waves at least)
 The transverse tail when skulled with skill
 Can move the beast quick as it will.
 Their blood is warm, the brain is large,
 Mothers with milk regale their charge,
 I fain would Yankee "Socials" beg
 To note the whale has got no leg.
 So that in talking of this beast

No feeling shocked is in the least.
 I say, of course, whale's skin is bare
 The Yank again would have me there.
 And yet it does seem too absurd
 To touch one hard for such a word.
 The skin's so thick, and fat so much
 The real beast's near hid in such,
 The sailors call this fat the blanket
 In whales and others with them ranked.
 Now of great use is fat in these
 That dive deep down into the seas;
 The pressure that's without applied
 Thus injures not the parts inside.
 In some a Dorsal Fin projects
 Steadying by the way it acts,
 Like in Ziphias, a sabre,
 Fin in some is very meagre.
 The arms are flippers, and the skin
 Of trunk includes much limb within,
 Motion at shoulder joint you see,
 It is, indeed, there, pretty free ;
 The other joints in limb you find
 Strong fibrous bands do firmly bind.
 And as the rays that form fish fin
 Fingers are joined the skin within
 No nails on hands are ever seen,
 They're not prehensile you may glean.
 Nor do they solid ground affect
 Then nails to save the hands would act.
 The limbs must be of use at least
 To balance, turn, or stop, the beast.
 Nor should one learn with much surprize
 The flippers help to float or rise.
 The head is large, the mouth is wide,
 Eyes in true whales are near the side.
 No nictitating membrane's here
 No use for such it would appear.

Outer ear openings are so small
 That they are hard to find at all,
 The ear no pinna has, 'tis queer,
 'Tis not in air whales have to hear.
 Ears, Lamarck would say, by friction
 Had been the object of constriction.
 Just as the limbs when backward stretched,
 And close to tail when tightly fetched,
 Got kneaded with the flukes in most,
 And thus the signs of feet were lost.
 The Mammae quite far back are put
 The teats near lower end of gut,
 In grooves by sides of Vulva placed ;
 Forwards the milk glands can be traced,
 These of muscle have so muckle
 Milk's squeezed out when young they suckle.
 Of young at birth there's only one,
 This much affection's spent upon.
 Gestation (whale) is months fourteen,
 It's after that with young they're seen.
 Blow-holes have whales, I mention here,
 These can be closed when down they steer.
 When they again to surface come
 They're ready then for breathing some.

Cervical vertebrae are thin
 Short'ning thus the neck they're in,
 The neck joints often anchylose,
 That is, one to the next one grows.
 It may be that they all keep free,
 In Rorqual this, and others, see.
 Physeter *first* one separate keeps,
 It thus a mark specific reaps.
 First two in Ziphias unite
 This differential is not quite ;
 Wherever in the whales you look
 The joints are seven like a book.
 Chest vertebrae show in this line

In Hyperoödon just nine.
 In "Finner" whales there are fifteen,
 In some another one is seen.
 The Neural Suture in the whales
 Far up on Neural Arch prevails.
 And when in Dolphin's back you trace
 The transverse process of this race
 It does first over Suture show,
 Then on, and then 'tis seen below.
 And thus a feature quite unique
 You in these beasts had better seek.
 Process in front belongs to arch
 But as backwards thence you march
 The transverse process smaller grows
 And then from body *Para* goes.
 And so 'tis thought a lumbar one
 Is rib distinctly, so said Owen.
 The Zygapophyses abort,
 For movement this is quite the sort.
 Now these two bony growths replace
 Which stretching do the spine embrace,
 And running forwards from the arch
 On both sides spinous process march.
 Such Metapophyses you name
 In Armadillo note the same,
 The latter has them upward bent,
 'Tis to support the armour meant.
 Thick gristle, vertebrae between,
 To favour motion this would seem,
 Of *Lumbar* Rorqual has sixteen
 So few as three are sometimes seen.
 To note the Sacrum's nil, one begs,
 This is because there are no legs.
 The vertebrae so called lumbar,
 More than equal back in number.
 Choosing Caudals you can't blunder,
 They always have *Chevron bones* under.
 I said there may be number three,

This is in Inia to see.
 Now *Caudal* bones in front are squeezed
 From side to side, so flexions eased,
 But where are fastened flukes of tail
 A lateral bulging does prevail.
 Under the transverse bars there go
 Arteries that distinctly show,
 And give off branches that ascend
 To dorsal part on which they end ;
 Thus two foramina one sees
 In segments vertebral of these.
 Now neck's so short, and tail so long,
 They thus are made to steer along.
 The soft parts so fill in the neck
 And make it level with the back
 Neck's not present to the letter,
 Whale can thus move all the better.
 A fish-like form does thus conduce,
 Quite easy, motion to produce.
 The foll'wing holds for most of whales,
 Asymmetry in some prevails,
 So that the bones so oddly grow
 'Tis hard their proper names to know.

The skull in whales does wide extend,
 And with the body nearly blend.
 Occipital comes frontal to
 And shuts parietal from view.
 Interparietals intervene
 Bones parietal between.
 At sides and back the latter trace,
 The Sphenoid's always in the base
 The Nasals, then, you always find
 Interparietals touch behind,
 Frontals with borders very thin
 To touch the Nasals reach far in.
 Nasals abut upon below
 Mesethmoids, everyone should know.

If you follow down the latter
 Note Presphenoids, no great matter.
 In front of these the vomer stays,
 Behind at Basi Sphenoid gaze.
 Basi occipital you see
 The next behind as it should be.
 In Palate Pterygoids don't unite
 In some, from Sphenoids free are quite.
 These latter they are bound to touch,
 In most of mammals joined are such.
 The palate bones you also see
 Which bound back-nares as should be.
 Basi-occip. sends down and out
 Processes two that are quite stout.
 This joins the outer hind-head bone
 At Paramastoid, as 'tis known.
 Then a fact that's not denied
 It joins Squamosal bone beside,
 In the so-formed hollow space
 Tympanoperiotic trace.
 These bones by Cartilage are joined
 At first in creatures of this kind,
 Sometimes in rock you ne'er can fail
 By earbones thus to trace a whale.
 When every other mark does fade
 These bones come often to our aid.
 The cranial space is like a sphere,
 Base broad and flattened as 'tis clear.
 Skull is so like the skull of seal
 It can the largest brain conceal
 Without increase in size of head
 By which the brain is carried.
 Of equal-surfaced forms, 'tis known,
 Globe greatest inside space does own,
 And globe-like shapes in water pressed
 Can thus resist the pressure best.
 A rounded form to things that live
 Nature does unceasing give.

Where lifeless forces work their will
 Ge'metric law, the forms fulfil,
 And all these forces angles leave,
 Organic parts they cannot weave.
 Now when there's bone to make a snout
 Head's flask shaped then, without a doubt—
 Turcican Sella shallow find,
 You will these parts now bear in mind,
 Maxillae frontal bones o'er reach
 So rim of frontal's left for each,
 This outward from the nasal bends,
 And o'er the orbit outside ends.
 Orbital process down and back
 Goes in true whales, to know you'll reckon.
 In Dolphin tribe they're forward bent
 So this confusion can prevent,
 Rostrum of skull has Maxillae,
 Ethmoid, and vomer joined, we say.
 Now Premaxillae are to add,
 Six bones in all I think we've had.
 The latter bones show very long,
 To little but jaw arch belong.
 The base of skull so very wide
 Brain corresponds, you may decide.
 Zygoma is of Squamous wide
 And joins with Malar at the side,
 Zygoma is of Malar slender,
 And the arch it thin does render.
 Lower jaw has got no ramus,
 Condyles' aspect is the same as
 The Croc'diles ; Symphysis short,
 But long in Pontoporia sort.
 Where jaw is narrow and so long,
 Teeth of both jaws in front do throng.
 Approaching thus they seem to show,
 Oddly enough, a double row.
 Present is lachrymal in whales,
 In Porpoise this bone always fails.

Sphenoidal slit's to front confined
 Foramen lacerum's behind.
 Now that the front you will observe
 Does for five (2) an exit serve
 And optic, then to add a word,
 There follow sixth and fourth and third.
 The third of fifth goes *second* through
 Its *Oval* Hole's not here to view,
 Seventh and Eighth the usual way ;
 Through *second* all the rest we say,

The frontal and Maxilla 'tween,
 Two odd Canals may here be seen ;
 These are connected at the base
 With sinuses for air, which trace
 To *bulb* Eustachian behind,
 And follow back if you're inclined ;
 Turbinate bones are here but small,
 The sense of smell seems dull in all,
 Bulb olfact. may not be hollow,
 So weakened sense of smell may follow.

Cetaceans have Ribs that touch,
 The transverse processes in such,
 Ribs bodies vertebrae eschew,
 Except in the anterior few ;
 In Ziphians the ribs are ten,
 The number's small, as you should ken.
 Hyperoöden only nine,
 The very fewest in this line ;
 The *Finner* whales have got fifteen,
 In one of these sixteen is seen ;
 True Ribs in Porpoise are but five,
 Sternum does lengthened form derive.
 There's Pre— Meso— and Meta, too,
 Sternum (three parts) you mostly view,
 Balaena has three cornered bone,
 One pair true ribs this beast does own.

Physeter has in two parts rods,
 A fused thin part each here one lauds.
 In Sternum of the Ziphian kind
 A hole at middle, you will find,
 The nature of the ribs so free
 Not far to seek, as you may see.
 When outward pressure in these bends,
 The box so formed protection lends.
 No clavicles require their skill,
 Balancing arts their limbs fulfil.
 The Scapula is broad and short
 In beasts of all Balaena sort.
 'Tis narrower in Dolphins most,
 Spine and Acromion all boast.
 The bones of arms are short and flat,
 No motion is the elbows at.
 The Nodules or the Carpal bones,
 Of these two rows Cetacean owns ;
 Wrist gristle most in Orca shows,
 Early on others bone there grows.
 Of bony Nodules Whale has three,
 In Physeter there's six to see ;
 In latter too, one often sees,
 To some attached Epiphyses.
 The Meta Carpals always five,
 But Rorqual does but four derive.
 Olecranon the Ulna shows,
 Gristle to this on Rorqual grows.
 Radius increases down below,
 The Carpal end is thicker so.
 Balaena has Phalanges, see,
 One, four, and five, and four, and three,
 Phocaena, two, ten, seven, three, one ;
 Or two, eight, seven, two, three's the run.
 Now all the joints from elbow out
 Are made with fibrous tissue stout ;
 And no joint-space is ever there,
 So they but slight in movement share.

Globio-cephalus has hands
 Quite long, 'tis thus the record stands.
 If we count in the first five joints,
 Phalanges table thus-ward points ;
 Three, thirteen, nine, the fourth has three,
 In fifth a single bone you see.
 Unciform also touches last,
 'Tis to Cuneiform made fast,
 And note in Carpus of the Whales
 Bone trapezium always fails ;
 In Unciform this happens too,
 Perhaps in more than in a few.
 The stiffened joints with flattened arms
 Are of the flippers chiefest charms.
 'Tis said the young ones are caressed
 By Mother's flippers bent to breast ;
 And when the little one's afraid,
 It shelters neath its mother's blade.
 Pelvis the Ischial bones has free,
 To these attached small bones may be ;
 Bones that form the creature's hanches
 Are in whales just sixteen inches ;
 From back to front these seem to go,
 They do not bulge the surface so.
 Small bone fixed here at the middle
 Would seem at first to be a riddle ;
 A femur tis, and then to this
 Tibia bone is joined, I wis.
 No nails upon the hands e'er grow,
 Sea Cows have got them as we know,
 And legs outside don't ever show,
 The water best seems thus to flow.
 The stream that back and in does rush,
 Twirling and slowing, aids the push
 The Trunk gets from the fluke or blade,
 When through the water speed is made.

Whales have true muscle in the skin,

The blubber lies beneath, within,
 The head has got complexi two,
 Trachelo-Mastoids recti view.
 Splenii are also there,
 To move the heads, if these beasts care,
 Pectoral and Latissimus,
 Occipital Trapezius,
 Also Cleido-Mastoideus
 And Clavic'lo deltoideus
 Humero Mastoid Muscle make,
 That the nerve Accessory take,
 An omohyoid may be here,
 'Tis absent oft or small, I fear.
 The Trachelo Acromial see,
 Which may like Trapezius be,
 Then you note the Rhomboideus,
 Which does from these muscles free us.

Spinatus (Supra) arm has got,
 Spinatus (Infra) all the lot,
 Subscapularis ; I wager ;
 Cor-Brachial, Teres Major,
 Triceps have whales, but Biceps not
 Finger muscles few have got.
 Rorqual, that is such a vexer,
 Shows a well marked radial flexor,
 Ulnar too, palmaris longus
 To digits flexor prolonged is.
 Extensor digitorum then,
 Not much does this require my pen,
 The Levatores of the tail,
 Depressors too, are found in whale,
 To Transverse processes one sees
 These muscles go, remember please,
 Enormous large these muscles prove
 For by them whale is made to move.

The Cerebrum is very wide

With many gyri it's supplied.
 The many folds and size of brain
 Raises the Cetacean Strain,
Balaenoptera Musculus
 Has you will see the pull of us.
 Ten pounds or more weighs brain of these
 Three times a man's brain as one sees.
 Of course, an active brain and small
 Beats large that does not act at all.
Sieboldii has brain more small,
 One hundred ounces has *Rorqual*
Boops Megaptera, by fate,
 Of brain's allowed pounds nearly eight.
 Our friend *Balaena* brain displays
 That nearly ninety ounces weighs.
Hyper-oödon, brain six pounds,
 This form the whales from Dolphins bounds,
 Dolphin shows ounces twenty-four,
 A very decent weight to score.
 The pilot-fish has five pound brain
 And yet it is too eas'ly ta'en.
 The depth and breadth of much account,
 Breadth oft exceeds length in amount.
 In duck-whale, Dolphin, and white fish,
 Height 's near to length as one could wish.
 The fissures, fossae, lobes and such,
 With higher types come much in touch.
 Large brain does mostly cover small,
 This mark advanced you surely call.
Callosal Corpus mostly small,
 Olfactory find scarce at all,
 Spinal Canal with plexuses
 Of vessels great perplexes us.
 Into intercostal spaces
 One continuous these traces.
 You never look for then in vain
 The Isle of Reil in Porpoise brain.
 Sylvian fissure here of course,

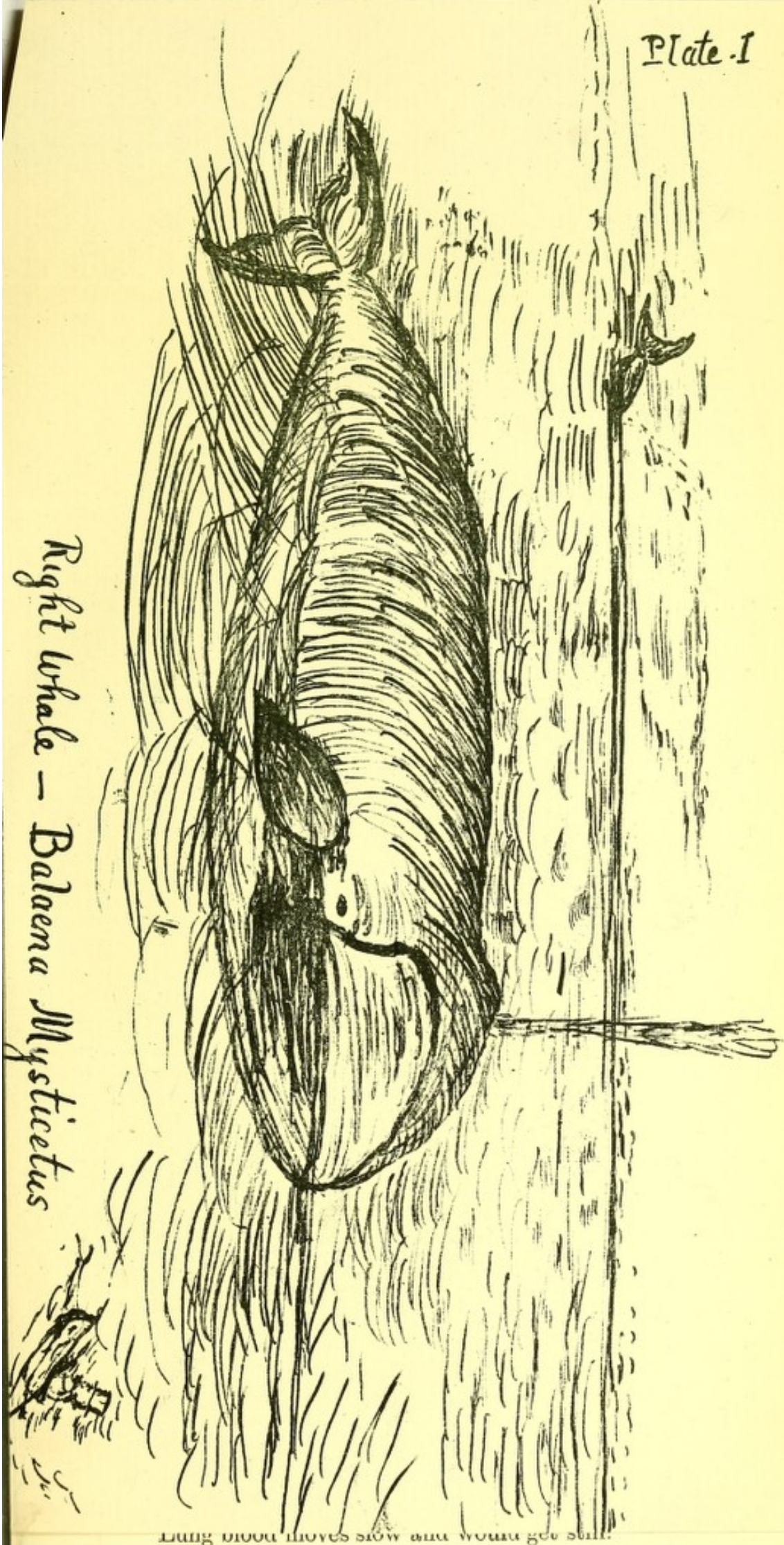
Supra and Pre. may show in force,
 Posterior Cornu here does show,
 A most important fact you know.
 In man 'twas thought that it showed best,
 And thus of wisdom was a test.
 In Apes this Cornu is to view,
 But they're with wisdom gifted too.
 It is without doubt very fine,
 This horn is in Cetacean line.
 It does indeed become their station,
 To air a little this inflation.

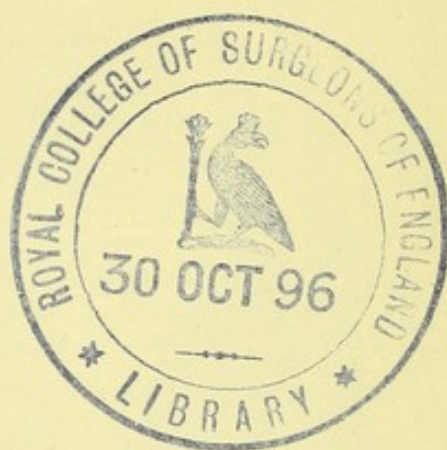
Small brain has bodies trapezoid,
 Tympanic Bullae here are void,
 In eye Sclerotic is quite thick,
 No Membrane Nictitating tick.
 Choanoid muscle always shows
 Distinctly present in the nose.
 External ear-hole very small,
 In Porpoise hard to find at all ;
 Two inches near behind the eye,
 When closed it water can defy.
 Canal of ear two inches long,
 Then the drum is by a thong
 To Malleus Handle right well bound,
 Small opening is in spaces found,
 The Malleus, or hammer bone,
 By jaw Primordial is grown ;
 Then Hyoid arch at inner end
 To form the Stapes aid does lend.

For os Quadratum in the bird
Incus in Mammals is the word ;
 Perhaps 'tis better this to state,
 As equal to palate quadrate.

The Columella of the bird
 Amphibia Reptiles (class third)

Right whale - *Balaena Mysticetus*





Equals the Stapes which, 'tis clear,
Of Hyoid 's formed and case of ear.

Tensor Tympani arises
(This fact often quite surprises)
From periotic bone of ear,
To Carnivor this mark comes near.
The heart, of course, is large in whales,
Aorta, largest form avails.
Of this, the lumen near the heart
Measures a foot, so every part
By blood can eas'ly be supplied,
Which feeds and heats so far and wide,
The wall, two inches in the main,
Can better thus withstand the strain.
Innominatae right and left,
In pilot whale become soon cleft ;
Carotid and Occipital,
And Facial, to the inner fall,
For arms Brachial come from outer,
These soon split up without doubt are.

Innominate may split near arch,
(Left one) like man's the branches march ;
Vessel net-works every where
Seem us in every part to stare.
In arms the Brachial soon divides,
And thus great Retia provides.
Spinal Canal, and sides of spine,
And heads of ribs, these all combine
To hold the blood, if they're required,
When mammal has in full respired,
Then in abdomen, formed by veins,
Find retia too, this fact explains
How there's ne'er risk of rupture rude
When flow through lungs is great withstood,
As breathing's under water nil,
Lung blood moves slow and would get still.

(Blue blood through smallest tubes won't flow
 There's in it much C and two O ;
 Friction 's by C O₂ increased,
 And soon, if much, the flow has ceased).
 Now blood of plexuses makes sure
 The moving blood keeps longer pure ;
 And when the blood in front grows still
 With blood behind the Retia fill.
 Thus plexuses of use appear
 For holding pure blood, as 'tis clear.
 They may of blood retard the flow,
 Diminish and so make it slow,
 And thus the heart gets less to do ;
 Less blood in this case flowing through.
 Retia safety valve like more,
 But can both force and blood restore,
 And like lymphatics they can hide
 A source of vital wealth inside.
 The Diaphragm is very strong,
 The central tendon small not long.
 Midriff and root of lung between
 Lymphatic glands are always seen.

The Larynx has no vocal cords,
 The thyroid shield good space affords
 For sac which may increase the voice,
 The animal has such a choice.
 There is some muscle in sac walls
 On which if beast should wish it calls
 To subsidize the breathing force
 By adding to it in its course.
 If, in inspiring, beast descends,
 The sac its aid in yielding lends.
 Trachea oddly trifurcates
 Two tubes to one lung go, one states,
 This is the right, and so one stares
 At mark of walrus, ox and bears.
 The lungs, are large but never lobed,

They are, of course, by pleura robed.
Thymus in foetus, Thyroid gland,
Both in the whale tribe take their stand.

On top of head the blowhole shows
By muscle such is made to close,
So that in reaching watery deeps
No water ever inside peeps.
'Tween the hole outside and Nares
Porpoise air sacs always carries.
One goes 'neath the skin to forehead,
Other's under face skin lowered.
The first bends down and outward more,
And ends between the skin and lower.
At Palate one a tube can trace
That does the larynx quite embrace,
Now Larynx does its form quite hide
With Arytenoid parts inside
And Epiglottis, both are stretched,
And then they are in this way fetched.
Drawn out they make a bulbous top,
On which the palate's made to stop.
When whale descends into the sea
He stays an hour or more 't may be,
And for the weight of sea o'erhead
Skin strength stands to him in good stead.
To breathe he comes up soon again,
And pokes his head out of the main;
He then blows off the impure air,
And does, by breathing, blood repair.
For, if he cares again to dive,
He must his lungs of air deprive,
And introduce a fresher store,
If he would fain descend once more.
Now if true whales near surface move
To take the food they so much love,
Their mouths may be kept very wide
Whilst sea's by palate tube defied.

They breathe as young Marsupials do,
 Which joined to teats as if they grew,
 Safe in their mother's apron hide
 Whilst they across the country ride,
 Thus living, until they are strong
 And big enough to get along.
 The Crocodiles, that have the way
 Of drowning beasts on which they prey,
 A tube of this kind useful find
 When under water mouth's confined.

The whale in blowing off his cloud
 Appears by water power endowed,
 But as everyone now knows
 'Tis vapour,—water ne'er he blows.
 The blow-holes have strong muscles 'round,
 For closing them they're useful found.
 Dolphin has blow-hole only one,
 The whales can two depend upon.
 Dolphin whales with teeth provided
 Seem Carnivora decided,
 But, if the Naturalist allows,
 We'd sooner place them near the cows.
 Dolphin, of course, has teeth in scores,
 In count of teeth it reptiles floors.
 Then note the teeth you find in these
 Are just as like as are "two peas."
 They differ from most mammal strain
 Where teeth three kinds are in the main.
 Whale-bone have all true whales in rows,
 For straining Molluscs all this goes.
 One set of teeth, you need not stare,
 Have got the whales, but they're not there.
 When whale comes first to taste the wind
 He leaves his teeth and hair behind.
 The Dolphin must milk teeth retain
 No others underneath remain.
 (All teeth grown in papillate sacs,

Each sac a small papilla decks,
 The soft stuff got shoved out and hard,
 And on the top enamel guard,
 If the jaw were shortened, then
 Soft pulps uniting, origin
 Of multifanged teeth, form the base
 Of molars of the mammal race,
 So molars that you find in man,
 As four or five distinct began.)

Two hundred (more) of whale bone plates
 Take place of teeth in whales, one states.
 Each plate runs half across the jaw,
 To roof they're fixed, inside they're raw,
 And then they're all beset with hairs,
 Thus Pteropods this mammal snares.

Whale bone on palate ridges grown
 Is hair-like stuff as may be shown,
 And into cloth it can be wrought,
 When teased out fine 'twill strengthen ought.
 Another fact, this whale bone screen
 Is double ranked (the tongue between)
 Tongue's of food a good detainer,
 Whale-bone row's a careful strainer.
 No wonder cuttles try the trick
 This well-set whale bone trap to pick.
 Of Balaenoids the Gullet's small,
 Larger for Molluses there's no call.
 The stomach always is complex,
 And may consist of many sacs.
 Three sacs in porpoise one may count,
 They may to more in some amount.
 Firstly a large one is to note
 White Epithelium its coat.
 The first pouch backward far does reach
 The widened gullet as we teach.
 The second stomach is rugose,

Smooth walls the third one does disclose.
 One may count duodenum four,
 But this is like intestine more.
 On these facts whilst one now broaches,
 Pouch the shape of seal's approaches.
 In both side-pressure makes to yield
 The viscera in beast concealed.
 Stomach that's crushed from side to side
 Gets very long in place of wide.
 Like fish Hepar and Lung of snake,
 These lengthened are for litheness sake.
 Seven Hyperoödon has got,
 Stomachs or sacs you call the lot.
 These separate all the walls do keep,
 Like stomach of a cow or sheep.
 The food's assured a longer stay
 This best for thinning is the way.
 It also thus gets time to soak
 Through walls of gut, the blood to stoke.
 Next after stomach in this kind
 A gut sac (duodenal) find.
 Such in the sharks you also note,
 Which clearly will delay promote.
 'Tis true as well of ungulates,
 Like Camels and their nearest mates,
 That duodenal sac does show
 That does to last of stomachs grow.
 Hepatic duct pours into this
 Bile products, of great use, I wis.
 (These lubricate and wet the walls
 To which, of course, absorption falls ;
 Waste products bile can so annul,
 That dangerous actions it can dull
 Helping off the poisonous juice
 That in the gut would seem profuse).
 That fats are thinned, and starch by bile
 Gets liquid, in a lengthened while,
 Tho' told so long, I feel inclined

To say 'tis less clear to my mind ;
 'Tis sure for human minds too sad
 To have to show that bile's not bad,
 At least 'tis not so bad, but that
 It helps to e'en dissolve the fat.
 The opinion once was widely rife
 That bile was bane of human life.
 The Coecum's small but absent most.
 No G. B. The whales can boast
 Liver three lobes, and then the gut
 At eight times body length is put.
 And note the small Omental Sac
 Appears in some a mouth to lack,
 As if the Sac were here produced
 By friction that the stomach loosed,
 Salivary Glands I mention
 Are at most a mere convention.
 The Orca, Rorqual, Pilot bands,
 All have submaxillary glands ;
 Parotids two, and, so 'tis clear,
 From others these do differ here ;
 The kidneys lobes abundant show,
 And testes in abdomen grow.
 Seminal sacs you cannot see,
 Os Penis neither can there be ;
 Uterus is in two horned state.
 Placenta is deciduate,
 (It seems placenta never splits,
 Maternal with the foetal flits).
 The form of this is called diffuse,
 Largest allantois they produce.

CETACEA as chief forms embrace
 The Dolphin and Balaenoid race.
 Odontoceti first you name,
 That have got teeth in the jaw frame.
 Then a single blow-hole, here,
 Is mark of Dolphin tribe most clear,

Mystacoceti one describes
 As tribe which whale bone us supplies ;
 Mystacoceti, in a manner,
 Has every whale beneath its banner.
 Two blow-holes here there are to see,
 Thro' which exhausted air goes free.
 Archaeo-Ceti are a type
 Extinct (like seals gone over-ripe),
 Their jaws contain three kinds of teeth,
 Three, one, five, (seal form) same beneath ;
 The Zeuglodon, you sure must feel,
 Is less of whale and more of seal.
 The Ziphioids you ought to place
 'Tween Dolphin and Balaenoid race.

Of natant beasts and where they're found.
 And how they try to get around.
 Commencing with Balaena race,
 We can these last to Ziphians trace.
 To Dolphins then our course is bound,
 Forms which are all Cetaceans sound.

Mystacoceti are the whales,
 In jaws of which whale-bone prevails ;
 Term " Bearded Whales " is one of pride,
 Beard being, here, the mouth inside.
 The whale-bone plates, are twenty score,
 They may be less and sometimes more.
 Length fifteen feet they frizzled show
 At inner side and eke below ;
 The hair that's wanting on the skin
 Would seem to grow the mouth part in.
 All know, of course, the oral space,
 Is made by dimpling from the face.
 Reversing, one might fancy so,
 That ox front teeth on forehead grow,
 Or one could say, at least of some,
 That horns are growing on the gum.

In skull of all Mystacocetes
 Lopsideness one never meets.
 Parietals above do touch
 Concealed by Superocc. in such.
 The frontals form the nasal roof,
 The nasals also, here's a proof
 That to tame mammals whales look near
 Compared with Dolphins, as 'tis clear.
 Premax. and Max. and Vomer too,
 In tapering rostrum are to view,
 This in Balaena, and depressed,
 In Rorqual's broad, straight and compressed.

Olfactory organ present here,
 Which is in Dolphin barely clear,
 Lies in a fosse eight inches long,
 But nerves from bulb are not so strong.
 The frontal supr. processes, find,
 Are large in all the true whale kind,
 Maxillae these do never cover,
 Which in the Dolphins they reach over,
 Malar orbit completes below,
 Lachry. 'tween Front. Max. Malar, show.
 A ridge is seen on palate bone,
 And many holes has this to own,
 Through which blood vessels to Baleen
 In greatest number here is seen.
 Then palatines and Maxillae
 Small Pterygoids, wide parted say,
 The palate plates too always take,
 And thus a palate complete make.
 Zygoma large has glenoids under,
 These glenoids are so far asunder
 That the lower jaw's bent out,
 And bowed there can't be any doubt.
 So jaws a function here discharge
 Important, and the mouth enlarge.
 The Tympanic and Periotic

Are in this skull quite quixotic,
 And by the Cranial bones are put,
 And from the Cranial space they're shut.

Tympano-hyal forms a mass
 To which does Stylo-hyal pass.
 Basihyal, with proc. a pair,
 And Anter. Cornua are there.
 Thyrohyal bones are round
 On cross section always found.

The Balaena Mysticetus,
 That the sailor glad to greet is,
 Is called the Right or Greenland Whale,
 That tempts man North in storm and gale.
 The head in these being bowéd grown,
 They're in the West, as Bow-head known.
 These whales indeed live farthest north,
 And are much money value worth.
 Balaena's sixty feet in length—
 (To eighty) not so great in strength.
 Compared with length this whale is thick,
 In moving too 'tis very quick.
 There's twenty feet or so of head,
 Mouth edge appears much curved, 'tis said.
 Then near mouth angle lies the eye,
 Not large but easy to descry.
 For Blackness in Balaena look ;
 On throat, arm white and near the fluke.
 On end of muzzle note the " bonnet,"
 But all whale-fish do not don it.

(The whales have now got very few,
 So thirty feet for length might do.
 And these are young and so the size,
 If large, means years, now rarest prize,
 It may be true, they fewer seem
 Because they're hunted now with steam,

For whales are timid and sore dread
The sound of screw armed ships, 'tis said.)

The tail is greatly lobed and strong,
And thus serves whale to move along.
The neck skin's smooth unlike Rorqual,
In which 'tis corrugated all.
Of course, no skin's upon the back,
Rorqual a fin does never lack.
The flippers thick and heavy are,
Than Rorqual trunk is thicker far.
To six score tons whale's weight amounts,
About three tons the whale bone counts.
Whale thirty elephants out weighs
A larger one more still, Brehm says,
And e'en two hundred horses would
By weight of whale be well withstood.

The Scapula is high in these,
Acromion here one also sees.
Coracoid too you also note,
A higher type both these denote.
Limb short and Pentadactylate,
Head very large and here truncate.
Greater is mouth-space here you find
Than all the body space combined.
Now head I've said, no one denies,
Is more than third the body size.
And greatly arched is upper jaw,
From front to back, this deepens maw.
Bowed lower jaw does outward tend
From front to back where 'tis to end.
You can see the shape then, soon,
Is in the main near like a spoon.

Baleen plates nineteen score are found
On each side palate, baleen's sound.
Length of a plate is near twelve feet,

And black, elastic, narrow, neat.
 The rows the tongue fits up between,
 Thus to more perfect make the screen.
 When mouth is wide the baleen straightens
 And the sieve-like action greatens.
 Stiff lower lip keeps blades all right,
 And so the sieve parts are kept tight.
 When mouth is short the baleen bends,
 So flexible are lower ends.
 Neck vertebrae are anchylosed,
 The chest is at twelfth dorsal closed.
 Loin vertebrae, fourteen to view,
 The caudal count at twenty-two.
Tympanic angular and deep,
 The bone inflation does not keep.
 Hollow Eustachian not big,
 The folding's not, in shape, like fig.

The brain of whale, there is no grounds
 To think e'er reaches quite *six* pounds,
 (The breadth the length of brain exceeds)
 'Tis measured by the body's needs.
 Pounds six times thousands twenty-five,
 Six pounds of brain then keep alive.

B. *Mysticetus*, Northern kind,
 Australis in the South you find.
 Still Biscayensis does exist,
 That to destroy man did persist.
 So scarce had this "Bone" whale become,
 None knew in ocean there were some.
 Japonica, Pacific North,
 One does not yet know quite its worth.
 Antipodarum, if you'll mind,
 Men of Australia coast do find.
 And, when whales come to nurse their young,
 By whaling men their dirge is sung ;
 If young be killed, dam keeps about,

Her life blood also is let out.

Neo-Balaena, Pigmy Whale,
Is found in South Pacific
A solid neck we here may hail,
But genus is specific.
In hands of these are digits three
Hence find a narrow flipper,
More facts in Lydekker please see
About this ocean tripper,

When from the water whale jumps out
As if to better see about,
The whaling man most surely screeches
That the whale he looks at "breaches,"
When flukes are shown, rest then failing,
This he designates "lob-tailing,"
And single fin when sailors see
They say, the whale must "finning" be.

B. Borealis when alive
Measures in feet just forty-five,
The ribs in this are just thirteen
In the Atlantic it is seen.
Then at a birth there is but one,
This is in larger whales the run.
Whales from the Crag would seem to show
Some points that in Balaena glow,
B. affinis, such a creature,
Gives the Mysticetus feature.

I've said that Pliocene has whales,
And in the Norwich Crag
Ear bones are found, the mark prevails
Of what whales least do brag.
The Microlestes, mammal beast,
That Trias age first saw,
When first from living it had ceased

Bequeathed to us its jaw.
 Some cuttles that in Jura swam
 Leave one prophetic link ;
 Through all the after storm and calm
 Has come to us their ink.

Boops Megaptera or whale,
 In which arms longer do prevail,
 Is hump backed, and in shape it shows
 Like porpoise, but is whale, one knows,
 The arms are nearly third of length,
 And scalloped then as for its strength.
 Megaptera is strong enough
 To make its taking somewhat tough ;
 Neck vertebrae in this are free,
 Dorsal fourteen (chest part you see).
 Lumbar eleven do here prevail,
 And twenty-one are in the tail.
 Bones tympanic, here inflated,
 Serve when ancient whales are dated ;
 Skin of throat, that's here plicated,
 Shows 'tis to Rorqual related.
 Body's black and limbs are white,
 Acromion here is not in sight ;
 Coracoid, too, does not appear
 In the *Longemana* clear.
 The *tetradactyl* parts in hand
 Seem to with Rorquals space demand ;
Brain seven pounds, or nearly eight,
 Equals the elephants in weight.
 Tho' we can the small bulb follow,
 The bulb is never in this hollow.

Physalis antiquorum name
 The Rorqual of the greatest fame,
 Or *Balaenoptera*, with fin
 Provided 'tis, and we begin
 By saying beasts are very long,

And to them wrinkled throats belong.
 The head is flattened, pointed, short.
 First finger does in all abort ;
 One ever these Cetaceans calls,
 The Finners, Rasors or Rorquals.

The Blue Whale, largest living beast,
 In length is four score feet at least ;
 These beasts that so excel in strength,
 Have flippers seventh of body length.
 Vertebrae, sixty-four are here,
 Of these, sixteen bear ribs 'tis clear.
Balaenoptera rostrata
 Five score feet the tail *pro rata* ;
Sieboldii, this whale's best called,
 It is not easily overhauled.
 Head short, then the trunks a spindle,
 Backwards this is seen to dwindle ;
 Then flat and sickle shaped are arms,
 This beast a sailor much alarms.
 The tail crescentic is and broad,
 The whale bone is, in this, a fraud.
Sieboldii's colour's black above,
 Whiter below, not had to prove ;
 Brain seven pounds, the length exceeds
 The breadth by little, as one reads.
 This is a sportive, dangerous beast,
 Under its shadow Dolphins feast ;
 Secure they are at Rorqual's side,
 A whale the world would fain avoid.
 If Rorqual swam with all his might,
 He'd stave or dinge the vessel quite ;
 And a blow straight from his tail
 Might cause a ship to shorten sail.
 (The use of bombs, so common now,
 Will Rorqual's freedom not allow.)
 It may be Dolphins keep so near,
 Because there's danger that they fear ;

Danger can with excitement fill,
 And they can sport with all their will.
 The fullest force with which heart beats,
 No doubt, the brain responding greets ;
 Often defeat attends on danger,
 Pleasure's to defeat no stranger.

Next note there is B. Musculus,
 Smaller, but quite as frivolous ;
 And yet its brain full ten pounds weighs,
 The largest nature e'er essays.
 To fourteen thousand body rate
 There's one of brain, we here may state.
 (Perhaps, in gauging, nerve parts all
 Should to brain reckoning always fall ;
 Some insects, birds, and mammals wise,
 Show brain that's large for body size.)
 The brain is oval, sharp before,
 And this is asymmetric more ;
 Small brain to great is one to three,
 Sylvian fissure, marked you see,
 Shows three branches very clear,
 And shows to higher types 'tis near.
 The Supra-sylvian, *Coronalis*,
 Rhinal, too, and Lateralis,
 All are to see in Musculus,
 Presylvian fissure strikes all us.
 Olfactory nerve is present here,
 But origin from Reil's not clear ;
 Here the trochlear nerve is thin,
 Acoustic mark'dly strong therein.
 Posterior commissure is great,
 Anterior small (the common fate).
 The Ant. Corp. Quad. are larger here,
 Median groove not very clear
 That, oft, in Musculus is big,
 Corp. Striat. not worth a fig.
 The Rorqual smallest known to fame,

Some *B. rostrata* this would name.
 Yellow beneath, cod fish the food,
 Of course, 'tis not for whale-bone good.

A WHALING VOYAGE. A.D. 18—

Those who whales desire to seek
 Secure a ship without a leak,
 With lines that help her on to move,
 And beams that strong 'gainst ice will prove.
 It may be that the ship has steam—
 That for speed quite good would seem;
 And in the whaling ground you look
 That season's not lost by a fluke.
 Then a trusty crew they choose,
 And hope to make a happy cruise.

The ship that's for the whaling ground
 Must be the best of all ships found.
 Salt junk and eggs, and lemon juice—
 Of flour the owner is profuse;
 Tea and tobacco for a wake,
 And grog enough to make hearts ache.
 By spirits here, if it's required,
 Zeal can thus easily be fired.
 Butter and sugar add to these—
 Milk's not plenty on the seas—
 Good water, an abundant store;
 Ship's biscuits they don't leave on shore.

Ice-spades and ploughs they'd better take,
 Lest they a long sojourn should make.
 Not that there's need, but they might stow
 'Neath under deck a sleigh or two.
 Of guns, of course, they take a few,
 If game should ever come to view.
 They also powder engines take
 By which harpoon bombs fast they make,

Tackling, then, of such a vessel
 As with a whale intends to wrestle,
 Means tons of iron, miles of rope,
 Thus helping one with strength to cope.
 Bombs, too, are used when near at hand—
 A shocking missile to command.
 Spears with hooks and eyes adorned,
 Such as would be by soldiers scorned.
 Harpoons with barbs, of course, are armed,
 That hold when creature flees alarmed.
 Then knives for cutting up the skin,
 Knives for blubber found therein ;
 Pots that serve the fat to boil—
 This is how they get the oil.

The crew engaged, I should have said
 That every man is articulated ;
 The pay so much a month, and share
 Of every fish they homeward bear.

The weather fine, and hardships few,
 The sailors splice, and smoke, and chew ;
 Lest sitting much their blood should clog,
 They shake out sails and drink some grog.
 It happens, sometimes, that a breeze—
 No rare exception on the seas—
 The sails disturb, and ship bends o'er,
 And if there's much they feel quite sore.
 With reefing here and hauling there,
 Scarce a minute is to spare.
 Oft the tar forgets to swear
 When things are bad, and takes to prayer.
 Those who on the high seas travel,
 And can this mystery unravel,
 Think that they nothing have to fear
 When sailors curse and drink their beer.
 If in the storm the sailor groans,
 His terror, then, the landsman owns.

And then that touch of nature glows
 That in bright times so rarely shows.
 (A ship well found right royal fares,
 With crew equipped and passengers,
 As long as weather shows quite bright,
 And inner working all is right.
 A gale may much its rage display,
 And one by one blow sails away ;
 Then, bending down the strongest masts,
 The ship and sailor downward casts
 Into the ocean depths, and smothers
 Fathers, daughters, sons and mothers.
 The chronicler of this disaster
 Of each detail becomes a master,
 And draws with skill each last sad look
 At everything that each man took ;
 And says of poor souls, fair and brave,
 Two hundred met a watery grave.
 And then he adds, with subdued sound,
 There were of sailors forty drowned.)
 The landsman in his mind does bear
 That in good weather sailors swear.
 Happy the crew to bless who ken
 The storm, and seas, and waves, and men ;
 Happy the skipper, when he's teased,
 Can look and feel as if he's pleased ;
 Who, when his crew prove lubbers, sighs,
 Quietly saying, "*Bless your eyes !*"
 The whaler's men must sometimes run—
 I've said there's tauting to be done—
 A rope to bend, the lead to heave ;
 Perhaps there's in to take a reef.
 And then the tar displays good sense,
 When he must with his plug dispense.
 Finding the change of situation
 Favours not expectoration,
 The herb Nicotian he stows
 Inside his cheek or 'tween his toes :—

Outcome of the frugal mind ;—
 What joy if all were so inclined !
 To take a sun or tell a star
 Does not concern a common tar ;
 But, then, deck swabbing all must do,
 Or take a steering bout or two ;
 And to keep watches short or long,
 Belongs to every sailor strong.
 For safety, then, one trims up lights,
 That they may keep the ship to rights.
 Masthead, and binnacle, and side—
 The ship best thus will safely glide ;
 And then, with steam, it's no abuse
 If trysail, staysail, jib's in use.
 And mainsail, then, to save the coal—
 They may each stitch of lint unrol.
 Approaching towards the whaling seas
 The whaling crew abandon ease ;
 With looking out and changing sail,
 They hope right soon to find a whale.
 (Atlantic was in old times found
 To be a proper whaling ground,
 And there Biscayans spent their toil,
 Europe to well supply with oil.
 And having all the whales near killed,
 Atlantic whaling then was nilled.
 Right whales are caught in frozen seas—
 Indeed, ice whales are all of these.)
 The whale observed, they shorten sail,
 And of their engines make avail.
 Harpoons with tackling, and without,
 Which whaling boats can carry out ;
 Missiles, again, that better suit
 Out of the larger guns to shoot ;
 And, sure enough, the whale is there,
 For danger near without a care.
 Even if small, he'd have the notion—
 The world is wide, and so's the ocean.

An animal of sixty feet—
 Could he expect to equal meet ?
 A mountain fish, on ocean breast,
 Confiding in his strength, can rest
 Far from the land, on which there dwell
 Creatures with claws and teeth so fell,
 That would on land think it no sin
 To tear a whale from tail to fin.
 Then think of all the falling trees—
 The ocean is quite free from these.
 The air is not without its faults ;
 Scarce creature in it ever halts.
 They nearly all must move or work,
 A downward force in air does lurk.
 Tho' air has no grampus beagles,
 Vultures plenty are, and eagles ;
 And, then, the sun-rays streaming hot,
 Would make for whales no pleasant lot.
 The wind, too, if it were quite strong,
 Might move a beast too quick along.
 The world of water's surely best—
 Than land or air *there* is more rest.
 So, satisfied with ocean fare,
 Aquatic life seems free from care.
 Whale can take, as he's so fatty,
Otium cum dignitate.
 Yet now and then the beast is teased,
 Perhaps as eas'ly as he's pleased.
 A whale to please—what does he need
 But small shell-fish on which to feed ?
 To tease a whale is done with ease,
 As man amongst a bed of fleas.
 Cyamus (Amphipod)—the louse—
 That in whale's skin lies close as grouse ;
 Bound to do so, as I may say—
 They can't so easily run away.
 No use, indeed, for beaters here—
 Scrapers would only serve, I fear.

These Amphipods, the nasty pest,
Oft cause the whale too much unrest.

Sharp-toothed brethren of Balaena
Enter the aqueous arena,
And, when they use both teeth and flukes,
An ugly work for whale it looks,
Which never then does dive from sight,
But always safety seeks in flight.
I say it, tho' I'm not a sage,
That when in conflict men engage,
They take, as measure of courage,
Size of beast that claims "*Demurrage* ;"
And, if they're strong, then there's no doubt,
Strong is the man who puts to rout.
Attack upon a man of might
Proves courage, it would seem, at sight ;
Attack an ancient institution—
This shows a virile constitution.
He who by tongue can make one squirm
Is often biggest of the firm.
Those who tease, and hurt, and blacken,
Mostly can on favour reckon.
That art does always best succeed
'Gainst white and quietness indeed ;
And so the Dolphins and all such
Gain glory by the whale they touch.
And now I may a moment snatch
To say a whale may meet his match—
A Dolphin, with a front tooth long,
Might pierce the whale with its great prong.
In saying this, I fain would wink—
Narwhal is quiet, I do think.
His fighting force he'd never fail
To use where needed, I'll go bail.
The Orca or the Killer whale
Does often this poor beast assail.
Narwhal with short muzzle seizes—

Soon the blood of latter freezes.
 A "school" of Orcas fight the whale,
 Which now its speed can scarce avail
 Attacking him on every side ;
 As soon as ever he has died,
 They fight for who shall get his tongue—
 A dainty bit these hounds among.
 The Swordfish, too, whale oft attacks,
 And never for its great size recks ;
 Piercing the whale with two edged-sword,
 Destroys the living force there stored.
 The whaling men then try full soon
 To test their strength with an harpoon.
 Whaler's boat rows up so quiet
 That whale knows not they're so nigh it.
 The spearman does his harpoon poise,
 And drives it in without much noise.
 The stroke, then, that the poor beast feels,
 Causes the whale to show its heels—
 Its tail, I mean, as it must be ;
 No legs are ever there to see.
 Yet, when the whale jumps out of sea,
 Tar says " he breaches " with some glee.
 Whale makes off—you ask me whether
 He's limited by length of tether ?
 This depends on length of cable,
 And on whether crews are able
 To work the boat and bring it nigher
 Before the whale begins to tire.
 (The whale in swimming shows great power,
 Rate five and twenty miles an hour.
 Many a one has been provoked
 That whales cannot be buoyed and yoked,
 And thus, of life two hundred ton,
 Might give a ship a speedy run.)
 For cable done, there is no doubt,
 The whale must stop or boat give out ;
 Or else the rope, unless its stout,

Will surely break and cause a rout.
 If that the rope's too quick out-paid,
 The boat may go on fire, 'tis said.
 A sailor, then, a bucket takes,
 And thus the bulwark ever slakes.
 Sometimes the whale begins to dive—
 Then is the time to look alive.
 The boats are spread all round about,
 They then keep a good look-out.
 When up the fish for breathing steers,
 Then nervous hopes and manly fears
 Engage the minds of all the men,
 Lest quick the fish go down again.
 So creeping up the whale to strike,
 To be the first each one would like.
 A harpoon hurled, the boat retreats,
 Lest it might take in its receipts
 Some dexterous movements of the whale,
 When to this use it puts its tail ;
 And a whale, if in a hobble,
 Soon disposes of a cobble.
 No longer prowess does prevail,
 With such effect he turns his tail
 That, greatly raised out of the water,
 May a boat completely shatter.
 And lucky are the whaler's men,
 That get on board their ship again.
 Now, it is thought a sign of wit
 To strike the tail if one is fit,
 Just where the tail and body join,
 And paralyse the nerves from loin.
 With a stroke to stop the danger,
 And to rest to bring the ranger,
 Harpoon after harpoon enters,
 Till, at last, the iron centres,
 Within where vital blood-stream flows,
 And so the whale obtains repose.
 (So many blood wells every where,

Tapping is all the easier there.)
 The oil to get, the beast's brought near,
 Men with spiked boots the blubber clear;
 Top jaw's cut off before the fat,
 Thus whale-bone can be well got at.
 The fat is boiled, the oil is stored,
 And all the whale-bone got on board.
 Now, having thus their task complete,
 They leave the flesh for seals to eat.
 (Seals, sharks and crustacea there,
 Soon leave the skeleton quite bare.
 This, when there's no longer meat on,
 Wears away, or else is eaten.)
 The jaws are used for posts of gates,
 Such degradation these awaits.
 When cargo full the ship does get,
 Crew make for home, with all sails set—
 Coming, in a happy fashion,
 Products to dispose cetacean.
 Sailors, whom we don't count sages,
 Come to Captain, then, for wages;
 Month by month he quickly reckons,
 And in turn each sailor beckons,
 To whom the well-earned pay he gives—
 He knows by whaling each man lives.
 The crew stand round upon the floor,
 As if they were expecting more.
 "We're bound to part, my blithsome friends,
 So all ends well that happy ends."
 Thus Skipper. "You've fish-share forgot,"
 Says one bold tar among the lot.
 The Skipper, rising, outward goes,
 Raising his finger to his nose,
 "My men," he says, "I've no complaint
 To make, because the patron saint
 Of good old Scotia brought us back,
 Tho' we of dangers knew no lack.
 St. Andrew, of all saints most sound,

Has warmest hearth on Scottish ground ;
 And none but Scotchmen ever meet
 Once every year to keep his fête ;
 So it would me not well become
 To break a bargain as would some.
 A share of every fish we caught,
 I know I promised, as I ought.
 So odd it is that we should fail
 To catch a fish, yet take a whale.
 No fish, no share—you will admit ?
 We have not by much fish been hit.
 A whale, indeed ; I only wish
 That I could call a whale a fish.
 I state the fact, and fear no action,
 MAMMALIAN is the whale's extraction."

Odontocetes are whales wherein the teeth
 In place of Baleen show the lips beneath.
 On squids and cuttles many of them feed,
 These creatures seize and swallow with much
 greed.

The cuttles that they live on are so large,
 (Parts found in stomachs show) we must
 discharge

A debt at once, by making full confession
 Of faith in cuttles great, this clear concession
 Must surely all the story tellers please,
 That ninety foot Octopus note in seas.
 One giant squid in size like puncheon,
 Upon a Cachalot would luncheon.
 (Squids eyes, a foot across or so,
 In contrast with the whales they show.)
 Whilst the whale kept struggling, toiling,
 The Squid its arms around kept coiling ;
 The vert'brates aid their wretched friend,
 And willing aid the whale do lend
 To tear the giant squid in shreds—
 The squid that every being dreads

CATODONTIDAE.

The Physeters have not symmetric jaws,
The teeth, of course, are here, there may be
 flaws ;

Ribs with the centra at the front unite,
And transverse processes are firmer quite
Than the known method that you see prevails,
In this respect, in all the other whales.
The nasal bones are only nodules here,
But flippers have five digits always clear.

Physeters true, in upper jaw no teeth,
A single pair or many are beneath.

Macrocephalus Physeter,
For sperm oil a noted creature.
Length (feet) is ninety (sixty?) quite
Thirty feet of head in sight.
When beast in size is less profuse,
Head correspondingly reduce.
Fortunate 'tis for Physeter,
The beast is not a landed creature ;
He would else find his head so stout,
Its weight would soon the beast wear out,
(Note reptile big of later chalk,
That had a deinosaurian walk ;
A bird-like gait this creature had,
And short fore limbs, for walking bad.
A horny beak on six foot head,
The breadth, again, is four foot read ;
This weighty head, it seems quite plain,
Trunk thirty foot had to maintain ;
Which had a weight and size, of course,
To hold the flesh, that gave it force ;
And then the weight of head support,
With the three horns of less import.)
The tail in breadth is twenty feet,

And flippers you may five feet meet.
 Two hundred tons the body weight,
 Sigmoid blow holes at any rate ;
 The mouth is long, prolonged behind,
 Near mouth end here the eye you find.
 A flat wide basin's front of head,
 Here Spermaceti's carried.
 This fat is found in back as well,
 (The *common* fat will for this sell).

The adult upper teeth drop out,
 To lower jaw teeth cling, quite stout.

Teeth are one score, or maybe that and five,
 On each side jaw the same, and form derive ;
 What helps the beast to exercise its strength
 The sides of jaw are joined for half their
 length.

Ear apertures are here a quarter inch,
 They serve their turn, perhaps, just in a pinch ;
 Their eyes more useful, but, of course, for air
 The field of vision's small, but if they care
 To make it bigger they can jump some feet
 Out of the ocean, greater range to greet.
 There's no back fin, the arms behind the eyes,
 And under these, feet sixty (more) the size ;
 The flukes are twenty feet, and then the tint
 Black brown above, front grey, light under
 hint.

In Bay of Bengal great Physeter's found,
 Pacific also and Atlantic ground,
 Around the Horn perhaps some species stray,
 They scarcely can go any other way.
 Barrels of oil there maybe several score,
 Say eighty such, perhaps, a good deal more.

The nasals form a transverse crest,
 With frontals and supr. occips pressed ;

Maxillae and the Premax plates,
 Enormous back wall given by fates.
 The two side plates on jaw bones grow,
 Near base of Rostrum this does show.
 The basin's closed except above,
 But front again does open prove.
 Asymmetry in skull extreme,
 The left side large as it would seem ;
 No mammal skull we ever see,
 Can so lopsided ever be.
 The facial angle, then again,
 If, when beast's intact 'tis ta'en,
 Is 90° which would seem to show,
 For *Sperm* intelligence does grow.
 Caucasian races are to this,
 In facial angle low, I wis.
 But Grecian type of excellence,
 In statues ends, where whales commence.

A Sperm whale tooth is large, sometimes
 three pounds,
 Nine inches long, at base, and nine around.

On diving down beneath, this whale has
 power
 To stay in foraging more than an hour,
 When going down to dive, the move of whale
 Commences by the rounding out of tail.
 The speed, twelve miles an hour, if danger's
 near,
 It may be more if helped or moved by fear.
 The young at birth, are up to feet fourteen,
 These sink beneath the surface quick, I ween,
 Because specific weight they can adjust,
 If not, they'd use their flukes, indeed they
 must.

Like fish, swim bladder that is filled with air,
 Put in from blood to rise up if they care.

Thro' intestinal membrane air may ooze,
And whale may get up by a sim'lar ruse.

Physeters eat rock cod, and squid,
Bonito, albecore, but hid
Are methods that these beasts pursue
In catching these and cuttle too.
'Twould seem some prey are eas'ly caught
When chasing bait, for bait is sought,
E'en to the gorge this beast can boast,
So cuttles then and fish are lost.

Just as the fish that has its home
Inside Anemone's odd dome,
Out rushes to coax on its prey,
On which Anemone gets gay.
And when the lust for food gets strong,
Prey chases fish, but finds it's wrong.
The hundred-armed grasps chasers round,
Stinging the wretches they have bound.
So cuttles thro' the water rush,
To catch a crab or fish, but push
Their zeal too far, and when too late
They learn their wisdom was not great.
They're caught themselves, and so 'tis seen,
When whales ope' mouth to trap they mean.

When fish descends right at a bound,
He's said in action then to sound,
And may eight hundred fathoms go
That's down direct a mile or so.
This whale can sink a ship, and would,
Has crushed a boat, the actions rude,
When a boat some blows thus catches
'Tis little use except for matches.
He takes a boat of't in his jaws,
And can thus much distraction cause.
The Ambergris, so valued much,

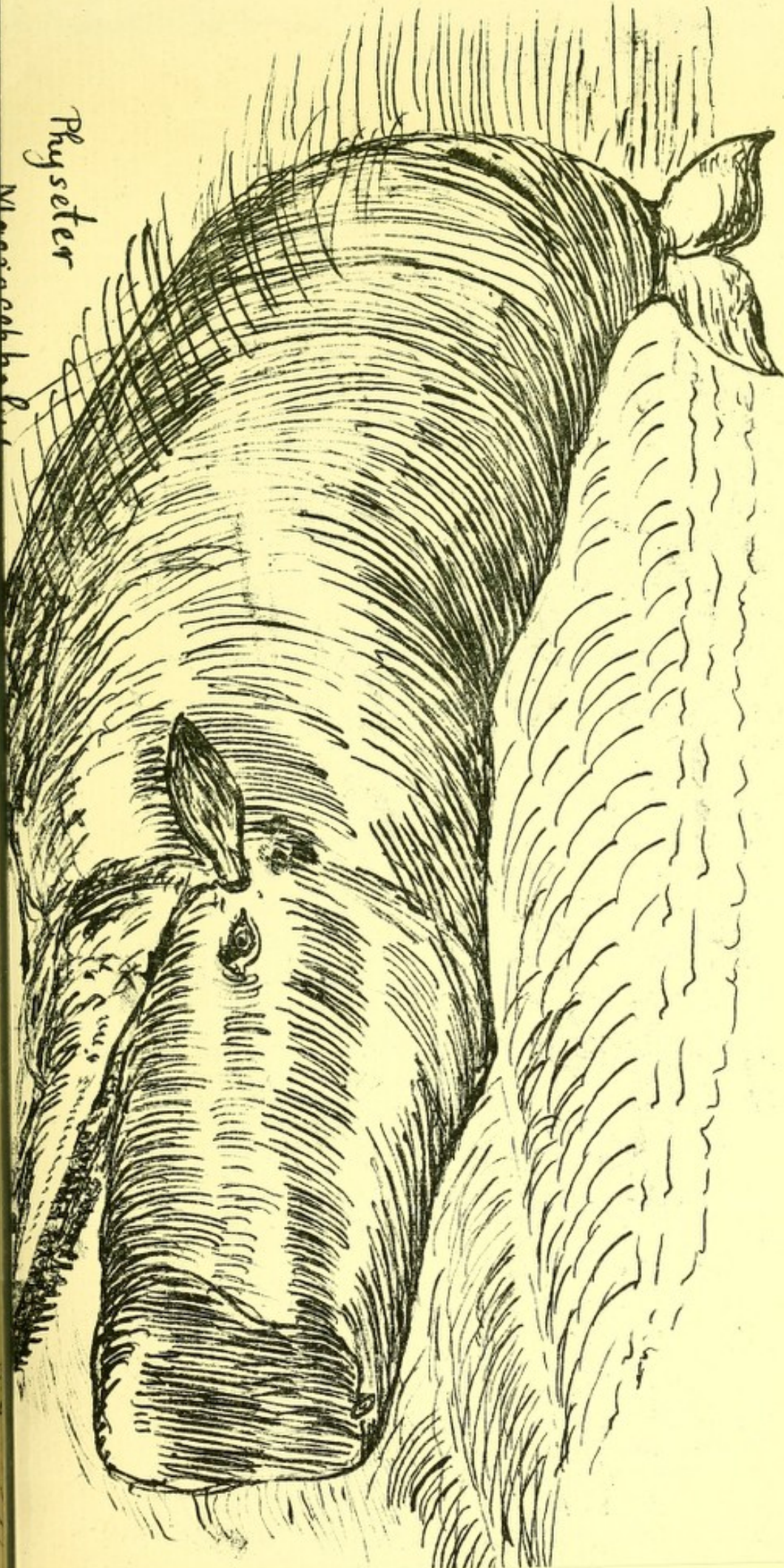
Is found in Viscera in such
 This perfume so very subtle
 Seems connected with some cuttle
 That the Physeter has bolted,
 Which in food-tube getting jolted
 Collects a mass of gum Benzoin,
 With various biliary stuffs and stone.
 This substance is by many sought,
 And by perfumers gladly bought.
 They gauge it by its weight in gold,
 Its many virtues are thus told
 By saying that it will increase
 The odor's strength, and scent release
 Of all perfumes with which 'tis mixed,
 And scent's more permanent or fixed.
 Ambergris one finds, when boating,
 On the water sometimes floating ;
 Sometimes 'tis found upon the shore
 In lumps of fifty pounds or more,
 Such pieces found oft here or there,
 Might tempt a man such beasts to spare.
 (When the Whale's no longer living,
 It Ambergris then ceases giving.
 Soon after death it may be said
 Its last of Ambergris is paid).
 If the Cachalot (Physeter)
 Has this curious kind of feature,
 Viz. making Ambergris inside,
 And then it scattering far and wide
 To save its life by shelling out
 The thing the sailors look about.
 It surely thus deserves some credit,
 For seeking thus mankind to debit.
 But the whale, when ships has met he,
 Should know he's killed for spermaceti.
 Sinbad's elephant was wiser,
 When he acted as adviser.
 Took him to the burial place

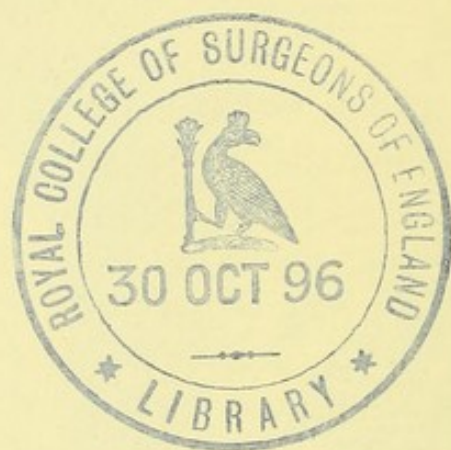
Of Loxodon the Afric race.
 (Beast knew that tusks are eager sought,
 By men and often by them bought,
 At prices that would feed a beast,
 In Egypt for a month at least).
 Sinbad saw land with tusks all strewn,
 A thought sprang in his mind right soon ;
 Why kill the elephant right out,
 Since clustered lie such tusks about.

Sperm whales are bold and brave in fight,
 In taking them the task's not light—
 Unwanton sight of ships and men
 " Gallies " the Cachalot, and then
 Much consternation he does show,
 By rushing round, and to and fro.
 He jumps at times so out of deep,
 Beneath his body you can peep.
 ('Tis thus sperms have a good look out
 When they would scan the sea about.)
 Oft the whaler boldly charges
 With all his force, ship, tho' large is,
 Yields to the strength, lets water in,
 And then the crew will have to swim.
 The crew of that good whaling ship
 Are forced to give their boat the slip ;
 The ship staved in goes down beneath,
 Leaving the crew to grind their teeth.
 (But if the sides are iron bound,
 The plates are only dinged found ;
 After one or many blows,
 A sperm whale sometimes bleeds his nose.)
 When fish is struck he fights, or flees,
 Ten miles an hour through the seas.
 When life is waning, as it seems,
 From mouth the food consumed teams ;
 (The masses that whales then eject,
 'Tis told in " *Nature* " for a fact,

Physeter

Macrorhynchus - Pott whale





Are measured thus by common sight,
 Feet, eight by eight by six in height ;
 Hatch house size for sailors shows,
 The measurement for landsmen goes.)
 And, oft before life takes it flight,
 The cuttles charge with all their might ;
 And other things that scarcely dare
 To touch the whale when life is there.
 These whales appear to move in *schools*
 The master here gives out the rules ;
 Into the school no stranger dare
 To find his way, without some care.
 Some schools are female, you should know,
 The name male school on some bestow.
 When of first, school-mate is wounded,
 Never note retreat is sounded ;
 The whole dame school does tarry there,
 Beside their friend, and danger share.
 No tim'rous female feeling here,
 To cause them quick away to steer.
 The cause of this no doubt you find
 In some odd action of the mind.
 The male school, if a mate be struck,
 Scamper right off, and trust to luck.
 Here the social instinct strong
 To female school does most belong.
 The instinct that protects the young,
 Leads beasts their friends to stay among.
 The males, whose instincts are to fight
 With males, in quarrels take delight ;
 These fights begin and end for self,
 'Tis known the cause is often pelf,
 Self-preservation also lurks,
 And on their fears most strongly works.
 You see in male self-serving type,
 In first self-sacrifice is ripe.
 (Not Camper's facial angle note.
 For whale's intelligence, I quote,

The corner 'tween front snout and jaw
 I take to air this bit of "law,"
 E'en argue that true Camper's low
Muzzle intelligence does show.)

The *Cogia Breviceps*, lesser sperm whale,
 Gray's *Cogia*, Porpoise-like, upper teeth fail,
 Enamelled and curv'd teeth always you find,
 The skull is both hollow above and behind.

Hyperoödon, feet six-twenty,
 Near North Pole these beasts are plenty ;
 In Summer come they to our coasts,
 Northward in Winter steer their hosts.
 In head of these, enlarged behind,
 Much fat in front of nostrils find
 Between two plates that stand away
 On outer edge of *Maxillae*.
 In front of this the flattened snout
 A duck-like form does shadow out ;
 Hence we the creature duck-whale call
 A name that's known to Greenland all,
 In lower jaw the teeth are two,
 There may be four in this to view,
 (The young have twelve) the flippers small,
 Entire is tail fin in them all ;
 Small dorsal fin, colour dark gray,
 Lighter below, the common way.
 The young are nearly black, 'tis said,
 The old white grey is often read ;
 The length attains to thirty feet,
 Girth twenty, this they rarely beat.
 When found alone, these are old bulls,
 The rest are always found in schools.
 Of oil these yield of casks a few,
 Of spermaceti hundreds two.
 This beast has least in all the line
 Of ribs, which number only nine ;

The weight of brain is quite six pound,
 Breadth than length is greater found.
 One-fifth of small does great brain cover,
 And great has rounded form all over.
 The frontal lobes are round and full,
 In sympathy you'd think not dull.
 Olfact'ry tract is here well seen,
 Trochlear nerve small is the mean ;
 Nerve facial here is very weak,
 The hearing nerve 1 cm. seek,
 Small ant. comm. the post. is clear,
 Back corp. Quad. distinct are here.
 Flutings on skin of throat you see.
 They're often stranded, this must be
 They're too pre-occupied to note
 Whales can't on shoaly places float.
 The bottle hump above the beak
 Is large in males, in females weak,
 Or smaller much in these and young:—
 Beast's size in feet near thirty long.
 Colour grey-black to grey below,
 A whitish head, spots yellow show ;
 A ring round neck they've also got,
 A sign of greater age, I wot.
 They're not afraid of ships, it seems,
 To them ships are, perhaps, as dreams ;
 When whales desire to look around,
 They leave the water at a bound ;
 And twist and turn their heads away,
 So that they can make best survey.
 Their food is cuttles, these they eat
 Six inches long, such must be sweet ;
 'Neath sea the beast may stay two hours,
 Longer, if he his prey devours.
 Two hundred pounds of spermacete,
 Two tons of oil, but females neat
 Have less true sperm, more solid fat,
 Fat for the oil ; I mention that,

When struck beast dives for half-a-mile,
And stays when down a goodish while.

Of *Hyperoödon rostratus*
There has been, perhaps, jam satis,

In *Mesoplodon*, a beaked kind of whale,
Flat forms of teeth in lower jaw prevail ;
In upper jaw they never cut the gums,
And so that set historic mark becomes,
The *Mesoplodon*, doubtless, once required
Two sets for food, it at that time desired.
In course of time the teeth had ceased to act,
And upper set to grow a reason lacked ;
The rostra of the jaws are hardest bones
That any vertebrate whatever owns.
The *Bidens* type has length of fifteen feet,
Great height in front of blow hole always meet.
Behind an elevation, also see,
That runs far on to back, as it may be,
A bristle fine the outer ear admits,
The colour slate, 'neath lighter, as it fits.
Seen from below all creatures such as this
Appear to match the sunshine, such as 'tis.
Whilst creatures that one views from higher
points,
Nature to match the darkest depths appoints,
And always does a ready means devise
By which things living tend to harmonize.

The *Cavirostris Ziphias*, so-called Cuvier's
Whale,
Has solid first three neck joints, a mark that
does not fail.
Triangle beak here stronger, and larger than
the last,
A pair of cone teeth are in jaw and always
here made fast.

The distribution of this whale, if we may use
the term,
Is just the same as that you find in well-known
whale called sperm.

M. Layardi has strap-like teeth, and large,
In Mosley's kind sets cross, and fangs
discharge

The work of growing, whilst the crowns are
worn,

Thus useful teeth Mesoplodon adorn.

The habitat is in S. Afric. seas,

Count near eight Gals. of oil from one of
these.

Beak never is so solid as in last,

The Physodonts were near them in the past;

In Pliocene they lived ; in both their jaws

Good teeth are found : here harder food the
cause.

The Dolphin tribe, Delphinidae,
Are smallest Cetes that plough the sea,
Through ocean depths or else the seas,
Or rivers (which have some of these).

The Narwhal, and the Risso's, too,

Are very big, so size won't do

To fix Delphinidae, what then

Sufficient marks define the den ?

Except Nar-whal, they've many teeth,

In upper jaw, and so beneath.

The jaw is short and very strong,

Jaw symphysis, not very long.

First three neck vertebrae unite,

Rest much freer, as is right,

A crescent the blow-hole adorns,

With mark'dly forward-looking horns.

THE SEA UNICORN—THE NARWHAL.
MONODON MONOCERUS.

The Monodon that's Narwhal called
Is twenty feet when in it's hauled,
Whitish or mottled, tail is big
'Tis deeply cleft or lobed in rig.
The dorsal fin is always nil,
Small median ridge its place may fill.
The paddles are both broad and short ;
Compare this with true dolphin sort.
The digits two and three are like,
The fourth as shorter, you would strike.
The head lop-sided, short, and round,
No beak or rostrum here is found.
Narwhal, White Fish and Phocoena,
Orca, Black Fish and Balaena
Thus differ from true Dolphin race
And the Ziphian tribe in face.
Neck vertebrae in Narwhal seven,
First two free, dorsal eleven.
The Lumbar vertebrae are six,
At six and twenty Caudal fix ;
The pterygoids are small in these,
Not joined in palate, note well, please,
Tho' they are not in palate joined
They do approach, we know behind.

On Cuttle fish and holothures
And crabs and such Narwhal endures ;
Now on its upper jaw a tooth,
Or horn, I'd better say, forsooth,
A canine tooth, a left one too,
Ten feet and spiral is to view ;
The spiral runs from left to right,
Forward and like a watch hand quite.
Small right in upper jaw is seen,
Two front teeth are above, I ween,

Two grinders are in lower jaw,
 But these drop out, so runs the law.
 In females horn-like teeth are small,
 Indeed they scarce appear at all.
 The Narwhal with front tooth so long,
 Might pierce a ship with its great prong ;
 So Monodon Monocerus
 (Such names for nature answer us)
 Might its canine, as you hear, sir,
 Have correctly called a piercer.
 The beast, I am inclined to state,
 Is one hat folks too badly rate ;
 Tho' the tooth's so sharp a feature,
 Narwhal has a harmless nature.

This tooth, showing screw-like figure,
 May be used much as a digger,
 By which its food it can procure,
 On which itself and wives endure.

Perhaps it serves to break the ice,
 Which might confine it like a vice—
 Or, then, again, such teeth may cause
 An enemy to stop and pause.
 A tooth like this may form a bar,
 And closer intercourse thus mar.
 Danger that's always off ten feet,
 Or eight, mankind might e'en call sweet.
 Indeed, when kept so far away,
 Then danger grave is danger gay ;
 And if the beasts could form a square,
 Or circle (tails in) they might bear
 The brunt of such a warlike host
 As in the North the seas do boast.

A Yankee hints the Eskimoes
 Might as great warriors eas'ly pose ;
 One Narwhal borne by warriors six,

They could both ram, and foes transfix,
 And when the battle din is o'er,
 Eskimoes could their aids restore,
 The scheme with banners still unfurled
 Is pictured in the *New York World*.
 The Narwhals when they sport about,
 And cross their teeth both 'in and out,
 Appear in deadly war engaged
 With tempers very much enraged.
 'Tis thus in all the sports of youth,
 If man would only tell the truth,
 These sports their chief excitement bring
 By copying the real thing.
 Bull-baiting, and, indeed, such like,
 Are signs of minds that fain would strike,
 'Tis therefore stated by the wise,
 That these are prize-fights in disguise.

A statement made somewhat remote,
 I am most anxious still to quote,
 That ships are by the Narwhals pierced
 'Tis thus explained by the auster'st ;
 Beast thinks he's got a dang'rous foe,
 And then he comes attacking so ;
 Or thinking to some food obtain,
 Which ship may in its hold contain,
 His tooth he uses as a drill,
 Or screw, his larder thus to fill.
 Perhaps the tooth's extraction's meant,
 Length growing inconvenient,
 But Flower differs from this view
 (Perhaps such stories are not true).
 This writer says, I'm bound to own,
 Narwhal-struck ship was never known.

Tooth being chiefly grown by males,
 Whilst it in females mostly fails,
 Suggests the latter use the stuff

That makes their sires appear so rough.
 So in some kinds of pig and deer
 Dog teeth and horns do great appear.
 The horns and teeth that look so fine
 Might be to females a good sign
 Of strength, or else a beauty mark,
 Which tempts in union to embark,
 And he that had the shortest horn
 Was treated with contempt and scorn,
 The roughest type did thus persist,
 Because encouraged to exist.
 Eskimoes like the Narwhal's flesh
 And this they eat both salt and fresh,
 Using the prongs for spears and such
 For stabbing other Narwhals much.
 When harpoon-struck, fish makes a dive
 But soon does at the top arrive,
 For fast to buoys harpoons are tied,
 So diving deep is here denied—
 No equal contest, Narwhal's killed ;
 The Eskimo with joy is filled.
 The oil, and skin, and flesh, and horn,
 No Eskimo would ever scorn.

Two head sides are, remember, please,
 Unequal in sperm whales and these.
 Lombroso says, in men a flaw
 Of mind with such would seem the law.
 Asymmetry in fowls that shows
 Seems close in-breeding to disclose.
 Females grow horns, they say, when old,
 Two horns, sometimes, I might have told,
 From altruistic cares quite free
 You egoistic features see
 (Oft hens of pheasants us do mock
 All spurred and feathered like the cock).

In olden times the teeth were bought

And of the greatest value thought ;
 Their powder mixed in any cup
 Destroyed the strength of poison sup,
 And water, stirred with such a horn,
 Was healed and pure as child unborn.
 A cup made of this iv'ry white
 No poison drop contain it might,
 Hemlock, aconite, and acid,
 Virus lost, became quite placid.
 The beast supposed to bear this horn
 Was called the far-famed Unicorn.

Sea Unicorn some Narwhal name,
 A compromise that keeps the fame.
 Teeth are still kept at St. Denis,
 Symbol moral there for men is.

The Unicorn so odd and rare,
 Endowed with virtues fresh and fair,
 A horse-like form with rampant air,
 Did on its head a long horn bear,
 And by the centre of its head
 The virtues of the beast was read.
 (The Rhinoc'rus Unicornis,
 On whose nose a monstrous horn is,
 Had answered better to this one
 Than would our friend the Monodon.)
 Where Rhinocerus horn is used
 Like virtues seem to be infused,
 The hardened epidermis heals
 And every noxious substance steals—
 To give some Eastern parts their due
 'Twould take all power of horn to do.

The beast the following displays—
 (In parts would anyone amaze)
 The foot of elephant so big,
 The head of stag, and tail of pig—

'Twould seem the elephantine foot
Suggests there's steadiness at root,
With wit, work, strength, endowed beside
Which nature does to such confide.

In Narwhal's flipper, tho' so flat,
The bones are found just such as what
Exist in other Mammal kinds,
And most high vertebrates, one finds.
Three upper carpals are found here
The usual vert'brate number, clear,
Centrale in the foetus shows,
Late this to Intermedium grows,
Or else it joins carpale two,
Third joining this you also view.
Time does carp. five to Ulna fix
That makes the carpals number six,
Two, six, and five, and three and three,
You in phalanges here may see,
Or two, nine, seven, five, and four,
Which makes phalanges several more.

Some other noted parts adorn
The World-wide famous Unicorn.

The head of stag with ears erect,
Sensitive to the least effect
Produced by smell, or sound, or sight,
Suggests from moral danger flight.
When brought to bay by danger faced
Timidity becomes erased,
'Gainst yelping hounds, when brought to bay,
Stag fights for every bit of way.

The tail of boar or pig, one knows,
Which on this beast so curls and grows,
May mean, as we must surely think,
'Tween change and changeless type the link,

That pigs are pigs, how deep you sink,
 To prove is almost waste of ink.
 Of height there ne'er has been one rule,
 One form did reach the size of mule—
 The Eo-Mio-Pliocene
 Have all got pigs, they may be seen,
 And tho', I fancy, clothed with flesh
 Driven to Galway, clean and fresh,
 A living form from Eocene
 Would have, indeed, no buyers keen ;
 Yet few, I think, would much us blame
 Thus Hyopotamus to name.
 Some animals, that once did live,
 By bones their history hint or give ;
 Given a tooth, or bone, or horn,
 We make Bear, Pig, or Unicorn.

Perhaps, you here an instance see
 Of rare and strange persistency,
 And in the pig-tailed Unicorn
 A sign of toughness great inborn.
 Were it not for our own nation,
 I would give this explanation,
 Deep meaning lurks in porcine tail,
 Some hints pronounced, tho' dim, prevail ;
 The tail of pig most surely shows
 The more you pull the more beast goes.
 When with pigs you'd save some bother,
 Drive one way they go the other.
 I'd like another note to make
 Intellect does not pigs forsake,
 Because, it seems, their fate's fulfilled
 When they for pork are reared and killed.
 When trained they have been used in chase,
 And yoked and ridden in a race.
 Their virtues one can't eas'ly lump,
 Pigs have been trained to read and jump.
 (Contentment's type, and that of ease,

No good in contemplating these.)

The unicorn, you'll bear in mind,
 Is found to equine shapes inclined,
 And here again there is to tell
 Of imagery that deep does dwell.
 The horse that is so strong and good,
 When trained and rightly understood,
 Destructive is to last degree,
 If foully treated, you may see.
 Give equine type the right know,
 That man can never be his foe,
 And when he's firm in work and wait,
 And constant, too, without rebate,
 He can on man, whate'er betide,
 Depend to be his steady guide.
 The horse, when carefully "brought in,"
 Will serve his master out and in ;
 But if horse sees man unquiet,
 Nervous, jerky, he learns by it
 That there is danger in the air,
 And he had rather not be there.
 Horse thinks that what a man can scare
 Would be too bad for horse to bear.
 No need to say the Ungulate
 Has fears, that stillness does abate,
 Movements with such would seem to warn,
 Danger is near they dare not scorn.
 Now, if one touch a horse so shy,
 As if his finger were a fly—
 Then do say kindly for the horse
 That he has never learned to curse.
 If he finds his hind legs handy,
 It is the fault of fool or dandy.
 Thus formed for safety, strength, and speed,
 In it demand for skill we read.
 Return for this we see it gives,
 Helping mankind, for whom it lives,

Carrying to the goal direct,
 Thus philanthropic he does act.
 Now, as it has above been told,
 The horn of unicorn did hold
 Virtues so many that it sold
 For largest sums in times of old.
 And foulest lakes, they were so bold
 To say, became as pure as gold.
 Where'er this curious beast did stand
 Actions the best it could command,
 Whene'er the power was exercised,
 Evil, the worst that was devised,
 Vanished beneath its virtuous look—
 The mind the evil quite forsook.
 Let me a moment take some space
 In contrast with this beast to place
 The lion, threat'ning brave and fierce,
 Whose teeth would seem as made to pierce,
 With claws so made to grasp and tear,
 As if the beast no one would spare ;
 And these two beasts on Britain's Arms
 In symbol have most potent charms.
 The one wrong-doers should alarm
 The other neutralize the harm.
 In man two sets of properties
 Combine to make the human phase ;
 Human, indeed, are always here,
 Although in some the man's not clear.
 Animal qualities, of course,
 In Mammals have a common source ;
 The animal does often act,
 Excluding Homo in the fact.
 Actions, too tiger-like are met,
 Perhaps, most eas'ly by a threat,
 The Ape-like qualities, concealed,
 Remain so, lion's teeth revealed ;
 So traits of fish, or fowl, or beast,
 May be stamped out, or else decreased.

The Unicorn does then suggest
 That good may evil thought arrest,
 By neutralising it where found,
 And planting something pure and sound,
 Thus long before the evils show
 The soil's used up where they would grow.
 A sign or word good thought inspires,
 Stirring the virtuous desires.
 On entering the erring mind,
 Touches the evil it may find,
 The legend, too, you find it flush
 With symbols that would evil hush,
 'Tis *honi soit qui Mal y pense*,
 This may be said to have strong sense.
 To every one let evil be,
 Who would his neighbour injured see ;
 To this as it would seem to me
 I'd not object, if from it free.
 The phrase, perhaps, to all applies,
 And, where it holds and man defies,
 'Tis true that men, both small and great,
 Must feel the strength of their own hate ;
 And if the feeling grew too ill,
 It might be strong enough to kill.
 If it were not, then, one might think,
 Before the man had time to sink,
 He'd banish every evil thought
 That with dislike to man is fraught ;
 But if all thought and action blend,
 The Unicorn may be our friend.

So Monocerus Monodon,
 Although in sea its glory's won,
 Has by the force of ancient thought
 A tooth that wondrous action wrought ;
 'Tis rare that such a horn or tooth
 Can make itself so felt, in sooth,
 Without affecting gravely such

That have teeth prized or dreaded much.
 The story of the Monodon,
 A bit prolix, its course, has run ;
 If every beast long tales would need
 And got them, they'd take long to read.

I in extenuation say
 That clash of arms and glitter may
 And have done ample in their day
 To cherish interest in the fray :—

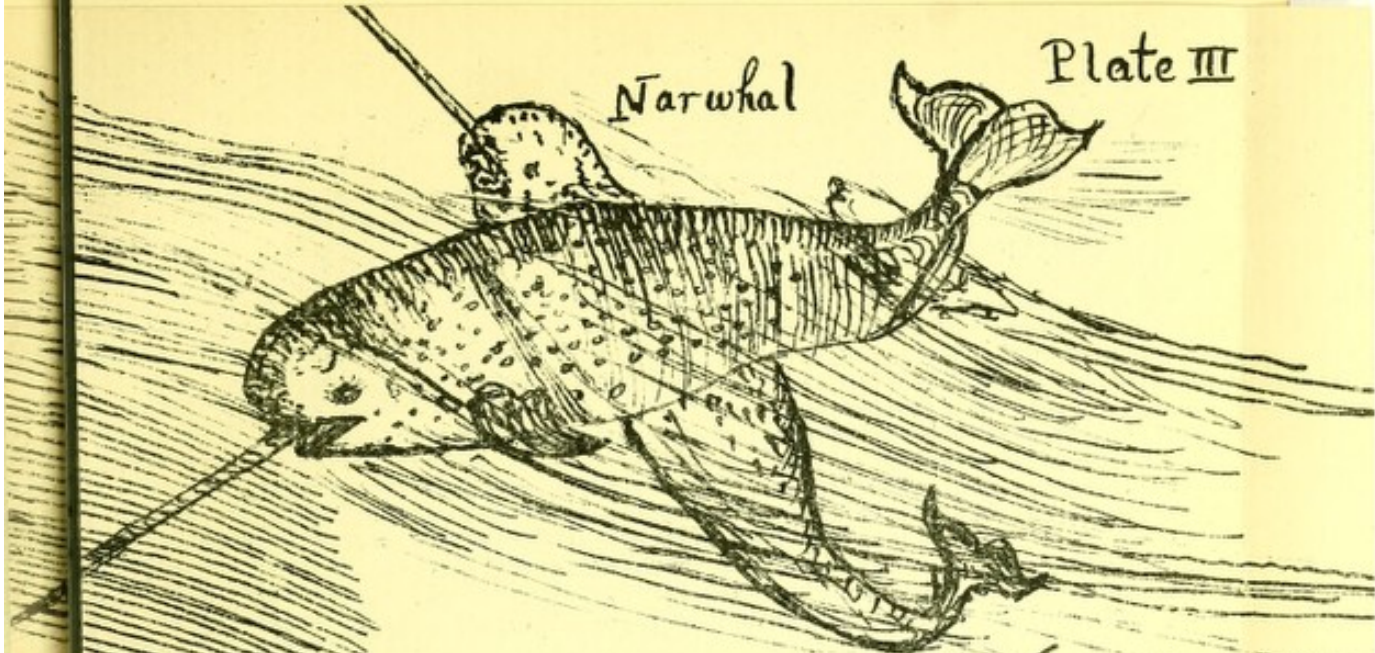
Xerxes the Persian's mentioned most,
 Because of the enormous host
 He brought from far to Grecia's coast,
 That he might over Grecia boast.

Leonidas, with men so few,
 Whose minds great brav'ry did imbue,
 Showed at Thermopylae Xerxes who
 Were those with whom he had to do—
 They were not men for peace to sue,
 But Xerxes made his venture rue.

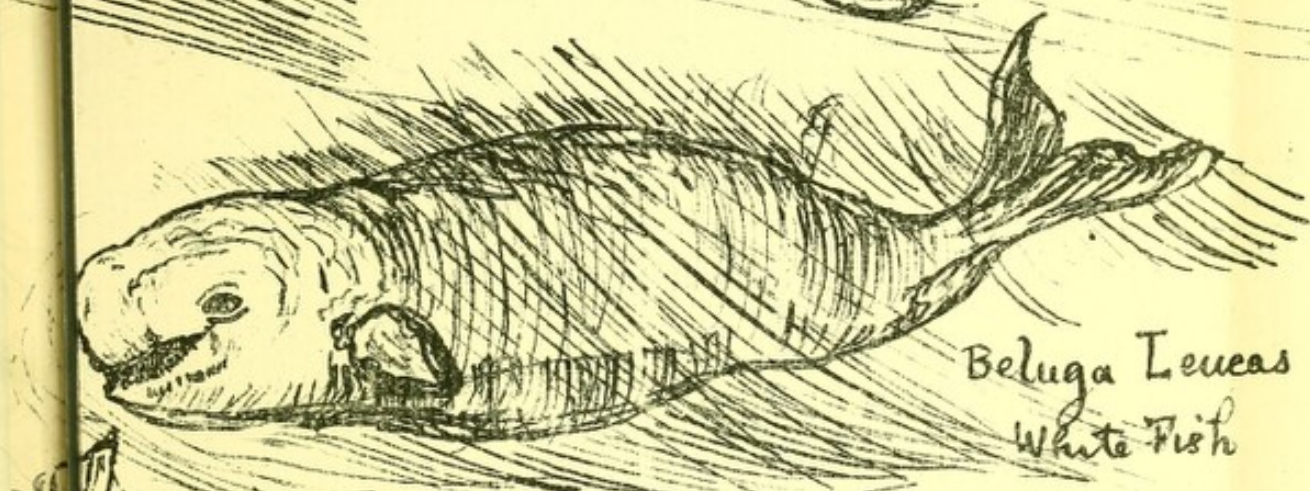
At Salamis he Greeks would slight,
 Sea armaments were in the fight.
 Xerxes himself " fought " on a height,
 And, long ere day had left for night,
 He saw a most depressing sight,
 That did his hopes completely blight ;
 His boats were either put to flight,
 Or captured, or got sunken quite.
 A tale ten times as long of Xerxes,
 When told by Grecians scarcely erks us.

Again, prize fights of former days
 Made records, one still with us stays,
 Tom Sayers, in " sixty," won the Belt,
 And made his prowess greatly felt ;

Narwhal



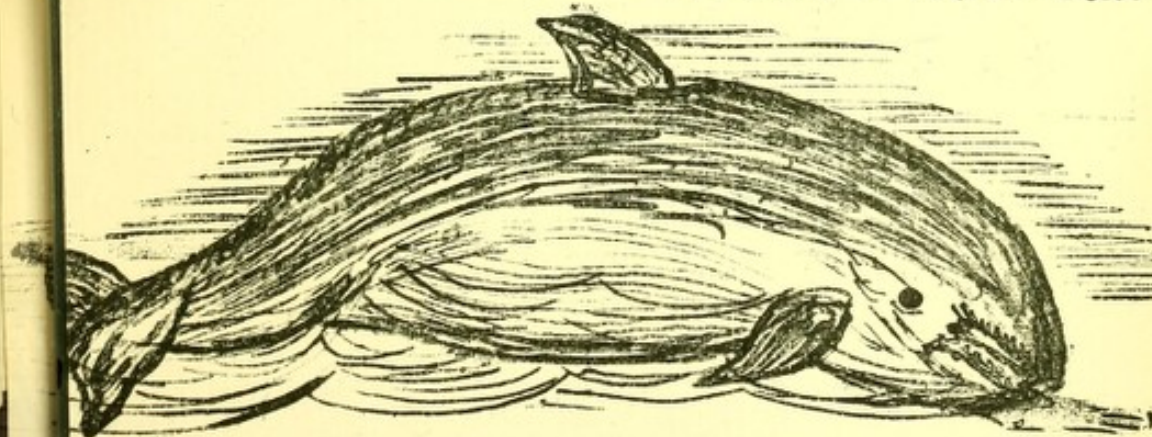
Beluga Leucas
White Fish

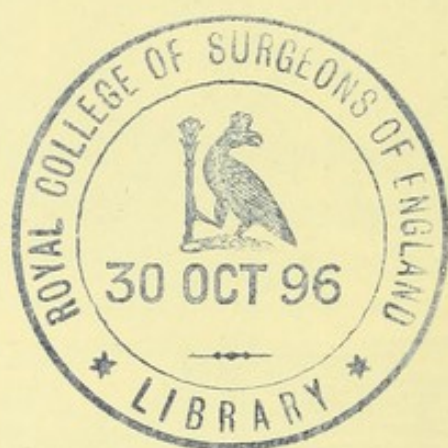


Globiocephalus latus - Pilot - Cawing whale



Phocoena communis. - Porpoise





The boxers at the shrine all knelt
 Of one who blows so neatly dealt.
 His backers landed lots of *Geld*,
 Away did opposition melt ;
 In journals of the *Ganzen Welt*
 The actions of Tom Sayers were spelt.
 Think what was the P. R. alarm,
 When Heanen broke the hero's arm ;
 The mishap acted like a charm,
 Although to Sayers 'twas fraught with harm.
 One half it did of Tom disarm,
 The other half grew quick and warm ;
 His strength arose like bread with barm,
 His blows came like of bats a swarm ;
 And Heanen thought of the school marm,
 Who lived near his ancestral farm.
 So skilfully Tom blows applies,
 He closes Heanen's pair of eyes ;
 Then Britain was a glory reaper,
 Since Sayers was of the Belt the keeper ;
 Heanen found the *Contest* "steeper,"
 That shut his eye (P. R. Peeper)
 Rendering it in two ways weeper,
 And for a time a waking sleeper.
 Do you think this greater fun
 Than life and work of Monodon.

Delphinapterus twelve feet long,
 Does to the Arctic Sea belong ;
 But shows of South 'thas no abhorrence,
 As it ascends the River Lawrence ;
 Now and then, too, Scotland's coast
 Can its presence also boast.
 This beast Beluga Leucas call,
 Or as Whitefish, 'tis known to all.
 No dorsal fin the fish has got,
 Thus like Narwhal 'tis most, I wot ;
 The flipper shows three digits clear,

A hand broad, short, and round is here.
 Rostrum is equal cranial length,
 Broad base, triangular for strength.
 Down Premaxillae front part grows,
 Round is this part in front of nose ;
 Skull narrow, lengthened, and depressed,
 Harmlessness seems thus expressed.
 The vertebrae cervical seven,
 All free, the dorsal are eleven.
 Lumbar nine are here to see,
 The caudal number twenty-three.
 The teeth four tens, or eights are here,
 Confined to jaw three-fourths, 'tis clear.
 Their points are sharp, and gaps between,
 Truncated later, as 'twould seem.
 Beluga's brain weighs pounds near four,
 Than human brain 'twould av'rage more,
 The forward lobes are strongly marked,
 As if they in high thoughts embarked.
 The breadth exceeds both length and height,
 Two last are equal, if I'm right.
 The Sylvian branches, here well shown,
 Connecting links do always own ;
 Olfactory nerve's not eas'ly found,
 The optic here, of course, is sound.
 Facial weak, acoustic good,
 Then the Ant. Comm. ne'er find you could.
 Quadrigemina ; hind parts, small,
 Equal the front in nearly all.
 White fish, when hunted, gaily races,
 The hide is tanned for porpoise laces.
 Small fish and cuttles are its food ;
 Flesh is not thought for eating good.

The Orca Gladiator bold,
 Called Killer Whale, the length is told
 As great as six-and-twenty feet,
 A dangerous beast for fish to meet.

Teeth four-and-twenty in the maw,
 In four divided for each jaw,
 And all appear in front, you note,
 Curved back, which seizing does denote.
 Both Seals and Dolphins fall to these,
 In quantities, in Northern Seas.
 Eschricht, indeed, a story tells
 Of how a Seal an Orca fells ;
 Seal the last of fourteen bolted,
 'Gainst this speedy act revolted.
 Of porpoises, the Orca had
 Thirteen, a number fraught with bad ;
 Thus twenty-six in all he bagged,
 The last him choked, he was so fagged.
 Orca, 'tis said, the tongue prefers
 To all the flesh the body bears.
 He sometimes also snaps whale bone,
 Perhaps for shell-fish, cause not known ;
 But Orca acts the whales among,
 As if the whale was made for tongue.
 The Orca frightens whales away,
 No friend to whaling men, they say,
 The upper parts of fins are black,
 Jaw, chest, and lower, white does deck.
 Whiteness does never reach to flukes,
 The sides form prongs of trident hooks ;
 Observe here Neptune's well-known mark—
 The trident's white, the rest is dark.
 Behind the eye a streak is found,
 A purplish one, the fins around.
 Beasts move abreast and steer along,
 Twelve beasts or more are in the throng.

Pseudorca Crassidens is small,
 This " Lesser Killer " people call.

Globiocephalus latus,
 Pilot whale, that so much fat has,

Is twenty feet from tail to snout,
 A little less, but thereabout.
 Spindle shaped and very quiet,
 It takes cuttles as chief diet.
 The head is globe-like, short low fin,
 The colour's black, this creature in ;
 But, from the side of jaw to tail,
 A white spear mark you'll surely hail.
 The head is round and short in these,
 Jaw symphysis quite short, one sees.
 The flippers five feet long or so,
 Phalanges many also show.
 Part hid by gum teeth forty grow,
 No beak like Dolphin here does show.
 Brain six pounds, the general weight,
 One for four hundred body rate.
 This fish is sometimes called a "grind,"
 And Black-fish, too, you'll bear in mind ;
 'Tis sometimes called the cawing whale,
 This name 'mongst sailors does prevail.
 A school of these when near Faroe
 Creates intense excitement, so
 That men make off, and go in hosts
 To drive these beasts upon their coasts.
 They seek the leader of the band,
 Then all the rest they can command.
 A male is master of the school,
 When he's secure the chase is cool.
 Atlantic, Cape, New Zealand, too,
 Have Pilot whales, and not a few.

Grampus Griseus has no teeth
 In upper jaw, but seven beneath,
 Note seven to three on either side,
 It differs thus from Dolphins wide ;
 These teeth are found alone in front,
 Slant mouth, short lower jaw, and blunt.
 Back fin is pointed then and high,

And narrow flukes you here descry.
 Back fin and flukes, dark grey and black,
 A purple tinge they do not lack.
 Blackish flippers, mottled grey.
 Yellowish coloured head ; they may
 Amount to feet thirteen. full grown.
 Most oceans (temperate) Grampus own.
 This Risso Dolphin you may name,
 Cuttles are its chiefest game.

Phocoena Communis, you see,
 That is so very full of glee,
 Lives in the Black and Azof Sea,
 And much in ocean, as should be.
 The teeth so flat, an hundred fold,
 Divide in four, for jaws to hold ;
 The lower jaw is under-shot,
 A fairly good mark of this lot.
 Black back, and a violet tint,
 The venter's white, fins black, I hint.
 Brain's one to ninety body weight,
 One-third of small brain's covered, state.
 The front lobes are diminished here,
 The basal part is scarcely clear.
 Sylvian fissure here to view,
 And Pre. and Supra. portion, too.
 No Olfact. Sulcus found therein,
 Trochlear nerve is very thin ;
 'Tis doubtful, then, that it can smell,
 Or roll its little eyes so well.
 But big are grown the hearing nerves,
 Large facial the head muscle serves.
 A porpoise herd is called a " school,"
 The social instinct's here in full.
 These beasts chase fish, get caught in nets,
 One useful oil from blubber gets ;
 For boot-laces is used the hide,
 The taste of flesh one can't abide.

In former days, 'twas thought so good,
 Kings called the flesh the choicest food ;
 No longer does this stuff secure
 The favour of an epicure.
 The food is herrings, salmon, such
 Are food that porpoise values much.
 In motion flippers lie at side,
 Out they stand when stopping's tried ;
 They pair in summer, single young,
 They're shot by Indians—rowed among.
 Phocoenoides, no back fin,
 Teeth thirty-six the jaws are in.
 Length four feet, black ; in pairs they move,
 Which dam and calf, or male form prove.
 This porpoise, sluggish, quiet, slow,
 Does rarely lively movements show.
 'Tis found near India and Japan,
 Where it begins to interest man.
 No Coecum's ever here to see,
 'Tis like thus all Delphinidae.
 Orcella, Irawady kind,
 In Bengal Bay there is to find ;
 Near Singapore and Borneo,
 These Dolphins also surely go.

Lagenorhynchus size eight feet,
 Acutus here is what we meet ;
 White sides, and then a pair of eyes
 As black as sloes, one here descries.

Crucigera, Pacific kind,
 A blackish muzzle has you find,
 The rest is white, but eye to tail
 A blackish mottling does prevail
 In these and others, make no doubt
 Albinoism takes pigment out.

Dussumier's Dolphin, Malabar.

At Cape, Capensis Dolphins are.
 Roseiventris; colour rose
 On venter; near Molluccas shows.
 Four feet in length, and then tooth rate,
 You count here four times forty-eight.
 Palate, *Attenuatus*, flat,
 In other Dolphins hollow's that.

THE DOLPHIN.

Delphinus Delphis (Dolphin), you will me
 well believe,
 Does surely more attention than other Cetes
 receive,
 The reason is, the creature lives in South
 Europe waters,
 Red Sea, too, and ocean wide, and elsewhere,
 if it matters.
 Eight feet long, and spindle-shaped, a sickle
 fin is dorsal,
 Medium fore-limbs, archéd brow, in move-
 ment fishes floors all,
 Brain is large, as you may guess, with ounces
 three-and-twenty,
 One to forty body weight, and this you see
 is plenty.
 Olivary bodies, that so oft Medulla decorate,
 Decline in Delph. to meet the eye, (one spec.
 at any rate)
 Olfactory nerves are absent here, hence it is
 to note,
 Crebriform (Ethmoid) lamina's not perforate,
 we vote.
 Low'r vermiform, at hemispheres, has mark
 distinctly placed,
 Splenial fissure, largest limb, to frontal lobe
 does haste.

Fissura Circularis ext. gives off the ext.
Presyl.

Scissura of Rolando this, you note the Rhinals
will.

Anterior Rhinal Roland's joins, and goes
thence to middle,

Annectant pucker Post. one joins to splenial,
a riddle.

The Pterygoids of so much note are whole
length joined in palate,

And Jaws drawn out to form a beak, ask
us in birds t' instal it.

The teeth so many and so like remind us of
the Lizards ;

Two condyles on the hind-head bone mark
Dolphin from these wizards.

The teeth may be two forty clear, or less, and
all are pointed.

The Dolphin is right quick to move, its tail-
end's so well jointed.

This beast when drawn out of the sea, you
will do well to note here,

The tail with vigour then can use, so it is
well to keep clear.

Dolphins make a murmuring noise, like
breezes through woods sighing,

Remember that they raised the case, in which
the ring was lying.

Some people think the Dolphin tribe at ship-
wrecks do assemble,

And hoist the seamen on their backs, so
horses they resemble.

They carry off their riders from the breakers
to the shore,

Where they can find a good ship tight to
bring them home once more.

Old Arion, the Music-man, molested by his
oarsmen,

Who so desired to steal his wealth, they
 seized upon his stores then,
 He asked their leave to play a tune, as he
 knew how to do it,
 A Dolphin bore him to his home ere he had
 time to rue it.
 And when the oarsmen reached their home,
 I think they did perspire,
 To find Corinthian Arion and here about his
 lyre.
 This simple tale about the lyre will be by all
 believed,
 Who think that every Orphean tale in truth
 is all conceived.
 (The lyre that cute Apollo gave unto the
 Orphean Bard
 Made rivers cease their rapid flow and beasts
 their ways discard.)
 Venus it's said and Amphitrite can put these
 beasts in harness,
 If thus they're fit such arts to prove, it is
 enough to warn us
 That softer talk and charming work a Hercules
 can conquer,
 Yield Pride and Strength, Ambition too, and
 e'en the greatest *Bon Cœur*.
 The Dolphin's food is brought to light, when
 opened by the student,
 For in its stomach fish are found, and friends
 that were less prudent,
 Sea-snakes too come here to view, perhaps
 the taste or notion
 Is thus admired, and so acquired, of showing
 snake-like motion,
 It's thus a group or Dolphin School in single
 file progress do,
 And then appears a snake-like form and that
 with much success, too.

The great sea-snake you see described, if you
 consult the papers,
 Its length set forth, its thickness too, its antics
 and its capers,
 A captain says his boat sent out had nearly
 been a winner,
 The snake was cut, he saw its blood—but
 this was after dinner.
 But do not let the thought of fame tempt
 you to write in journals,
 Or sure enough you'll find it tough, if you stir
 up the colonels
 Of the marines, who know the deep, for some
 of these have seen it,
 And Admirals of full four score will call you
 fool and mean it,
 So leave the tale to have its way, so far it
 length of rope has,
 Perhaps the snake's no Dolphin school, but
 ninety foot octopus.
 In olden times, and Southern climes, men
 Dolphin beasts did tame well,
 And it is said, when gently coaxed, to shore
 they'd bring their game well,
 In one odd case (authentic? nay!) when
 Dolphin's child friend died,
 The beast the child sought far and near, and
 then it stopped and cried.

The Tursiops is bottle-nosed,
 A short stout beak is here imposed.
 Four twenty-sixes teeth are here,
 Four twenty-two's perhaps but clear.
 The length in feet, from twelve to nine,
 Grey, purple, white, below define,
 Others black on upper side,
 All may be grey, so range is wide.
 This Dolphin's found near everywhere,

A score gals. oil come to its share.

In Steno's kind the teeth are rough,
Four twenty-fives and hard and tough ;
Whilst upright grooving marks the crown,
Long symphysis for jaw, mark down.
In this form the muzzle's white,
White's for the lower surface right.

Flippers in Sotalia smooth,
They're broad and strong, too, here, in sooth.
In Amazon, Braziliensis,
But in the East you have Chinensis.
S. Teuzsi differs, I do trow,
In eating herbs, an odd type now,
West Africa is this one's home,
It never far from this does roam.

The Stenodelphis, river Plate,
Blainvillei, does calm await
Such food as comes from higher parts,
But local stuff, it gets by starts.

The jaws are long, with sixty teeth
Above, on each side, and beneath.
Blow-hole, crescentic, transverse placed.
A long breast bone, two pieces traced.

Unlike the Dolphins, here you see
The last of oddest forms, and free.
Pontistes argentina, too ;
And *Saurodelphis* add thereto.

Argyrodelphis, which you find
In Patagonia, bear in mind,
Like whales the nasal bones has, note,
With whales to place it, you'd not vote.

Iniopsis, that you get

In Caucasus, is like this set,
 And so the race is nearly lost
 That over Europe swam and tossed.
 In seas (American) lived such,
 Where now the land appears so much,
 There possibly existed land
 Where oceans now the parts command.

Inia Amazonica of fresh water too,
 Has on back a dorsal fin, and this is small
 to view.
 The beak is straight and narrow, and unlike
 that of whales,
 The horse-shoe shape in blow-holes (another
 mark) prevails.
 Teeth seventy, short and wrinkled, and
 thickened at the base,
 Indians superstitious are about this curious
 race.
 Back is black and venter rose, so odd they
 do appear,
 In one of this uncanny lot no one would put
 a spear.

This *Bouto* lives in Amazon,
 Goes down head first, when diving's done.
 At surface first appears the nose,
Tucuxi (dorsal part) first shows.
 Then *Bouto* moves about in pairs,
 This social trait is their "affairs."
 The beast that puffs, and blows, and snorts,
 At night in Amazonian orts
 Is *Bouto*, but of colour bright,
 That feeds from mouth to source all right.

Platanistidae teeth have got,
 Many and small,
 Jaw symphysis then, I wot,
 Are joined in all.

The neck's slight, but well marked here,
 And the ribs touch
 The vertebral centres clear,
 (Common in such)
 Neck joints again separate find
 Mark that's akin
 To earth going Mammal kind :—
 Whales they're joined in.

Begin with a land Mammal,
 Say like the stoat,
 Steps to otters, don't trammel,
 The likeness note,
 To the seal forms transition
 Seems never hard ;
 Much depends on decision,
 Legs getting marred.
 Then the type Platanista,
 From nature's wand
 Comes from seal like a vista
 (Squalodon band).
 Once again nature touches,
 Short-necked type, view,
 That to ocean now rushes ;
 True cetes ensue.

Platanista in darkness
 Requires no eyes,
 But the want you remark less,
 Skin loss supplies.
 The food for the retina
 So rich, not used
 To skin brought by blood in a
 Way gets diffused.
 Then note, water sticksion
 Grows with the speed,
 Of 'tween change, distinction
 Nerve parts take heed ;

So this beast in the water,
 Like bats in the air,
 Tells rush less that's sought for,
 When flow's less there.

In muddy streams this creature mostly lives,
 The shore as well some food the Susu gives.
 A beak compressed, but larger near its end,
 Low back ridge, that to make a fin does tend.
 Flippers triangular and like a fan,
 Blow-hole a lengthened slit, the common plan.
 Teeth cones, or cylinders by constant use,
 Are large, and near jaw end one here teeth
 views.

At root of beak are crests, that nearly meet
 In front of beak, which large in males we
 greet.

Usually teeth, are thirty on each side.
 The size of Dolphins ten feet, now decide.
 The females larger, all are found up stream
 A thousand miles or so, but sometimes deem
 It wise to seek the waters near the sea,
 And spend a season in the warm Hughli.

The name *Susu* means short and blowing
 noise

The Dolphin makes when plunging, in its
 joys.

The Platanists curative virtues have,
 They give to man a well-reputed salve.
 The food's siluroid fish that hide in mud,
 And prawns as well are welcomed for its
 food.

Young single born are in the summer time,
 Eight months or nine gestation gives the
 rhyme.

It seems the young to arms quite closely
 sticks,

At least 'tis seen so near, the objects mix.

Incisors and Canines in front
 Amount to four in Squalodonte ;
 Behind, Premolars four you count,
 Molars up to seven amount.
 The last have got a double root,
 Compressed triangle crowns, to boot,
 With cusps that form an edge like saw,
 Which in true shark tribe is the law.

In Plio. (Mio.) then you find
 Links 'tween the cetes and cat-like kind.

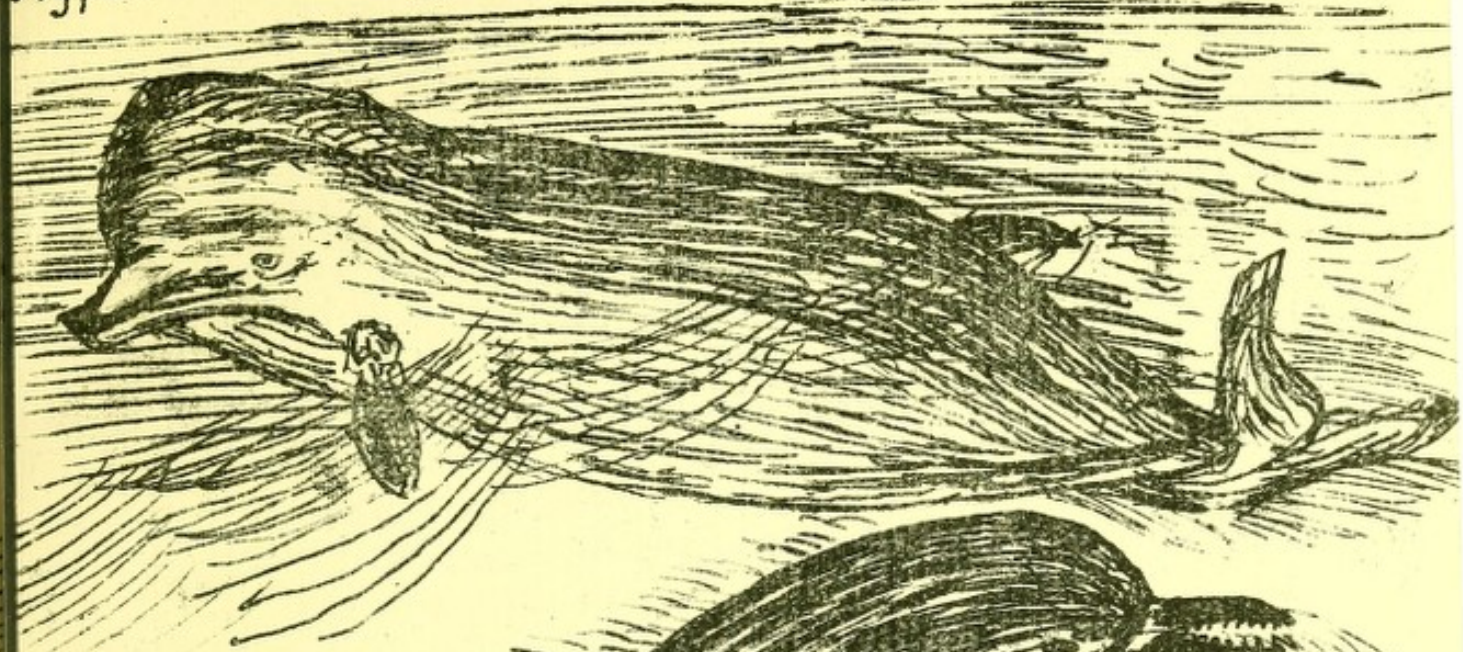
The Zeuglodonts of Eocene,
 In N. America are seen,
 In Europe West and Caucasus,
 Australia, too, approaches us.
 Of these lands, then, some parts were sea,
 Land there was scarce, it seems to me.
 Some beasts were large as our true whales
 With others Dolphins turn the scales.
 The teeth in front, let's say are four,
 On each side molars four, no more,
 Long nasal bones, with forward nose,
 Arm long for cetes, as we suppose ;
 But end is flat, like other cetes.
 They've armour too, of bony plates.

Note that true whales have got Baleen,
 Milk teeth are not above gum seen.
 The Dolphin's skull lopsided find,
Nasals roof fossae in true kind.
 Their *Nasal* tubes up backward go ;
 In whales, they forward point, you know.
 On front. (orb. Proc.) maxilla lies
 In Dolphins ; whale's, one free describes.
 Lachrymals, from jugals free,
 Are small in whales, as you may see,
 In Dolphin's large and joined they're made,

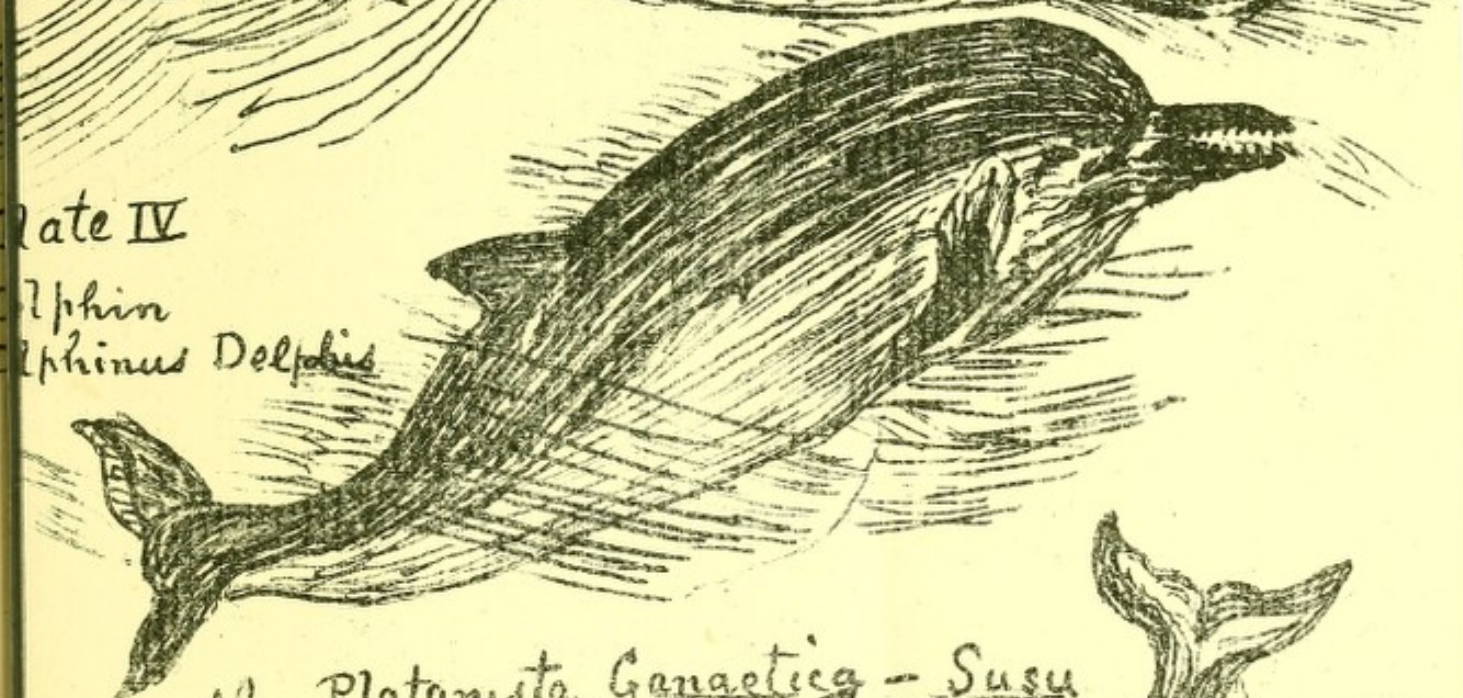
To orbit roof they render aid.
 Tympanic's to the Petrous joined
 In true whales, not in Dolphin kind.
 Lower jaw rami arched in whales,
 No symphysis proper here prevails ;
 In Dolphins both jaw halves are straight,
 And here's symphysis, we may state.
 The Dolphin's front ribs centra meet,
 On whale's T.P. rib has its seat.
 First rib joins sternum in the whales,
 All but one sternum piece here fails.
 Dolphin's breast bone has many parts,
 Strength several ribs to this imparts.
 Nostrils in whales are always two,
 They join in Dolphins (blow-hole view).
 In whales olfactory's distinct,
 In Dolphins, mostly, 'tis extinct.
 In whales, not Dolphins, find a coecum,
 Note, *Susu* has, in *Vade mecum*.

The Dolphin in the earliest time
 Cetacea represented.
 Poseidon and the gods sublime
 Its injury resented.
 Neptune for the Dolphin made
 A seven-starred constellation,
 Jove wished to have it nine, 'tis said ;
 Both caused this new creation.
 So Dolphin, placed in azure sky
 By Zeus, gained then all honour.
 And from deep ocean meets the eye,
 Poseidon thus gives *Bonheur*.
 Aquila near, the stars are seen,
 And Lyra, not too distant,
 (The tortoise) near the royal swan,
 And Pisces, most consistent.
 Aquarius ; the winged horse,
 As well as Capricornus

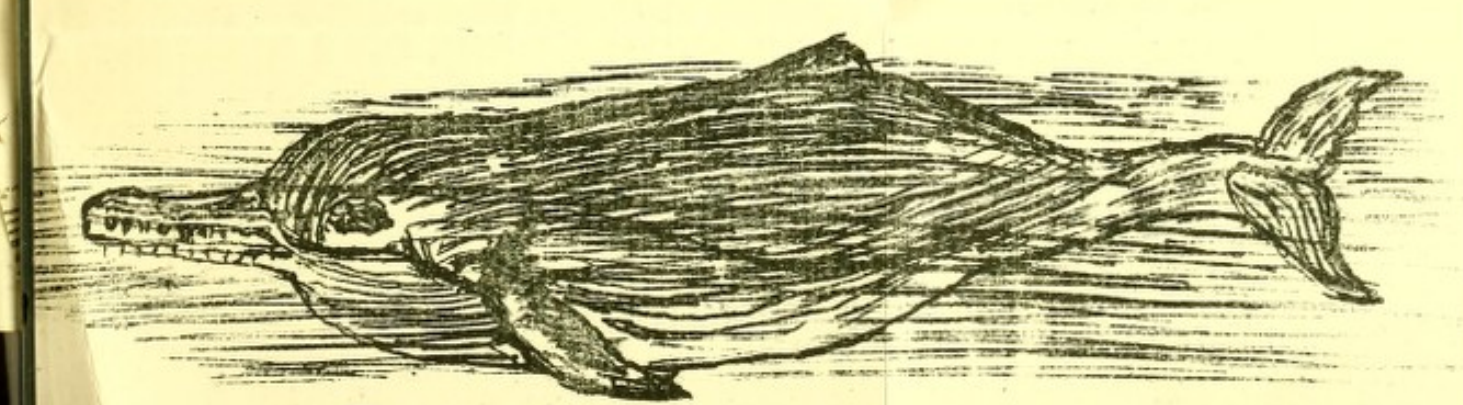
Hyperödon — Duck-whale — Dentition. $\frac{0-0}{1-1}$



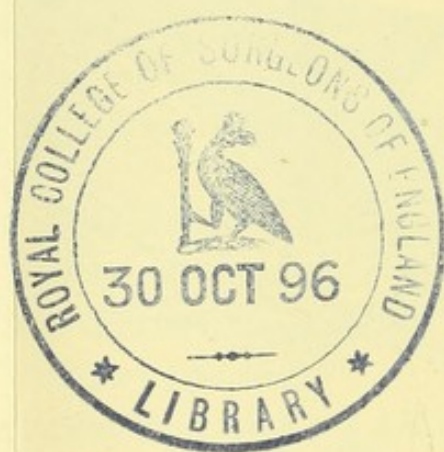
Rate IV
Dolphin
Delphinus Delphis



Platanista Gangetica — Susu



Inia Amazonica



Go with the others in their course,
(The Goat, near Archer borne is).

Aegina, Argus, Syracuse
Placed Dolphins on their coin.
First place did tortoise also use,
 Another potent sign.
Brundusium Poseidon graved
 With Dolphin (man astride).
'Twas thus the men, who tempests braved,
 In ocean kings showed pride.
On modern shield of armoured knight,
 And peer, and squire so bold,
Oft Dolphin gleams and glitters bright,
 Sea victory's so told.
The sea towns, railways (e'en G.E.),
 Holding cetaceans high,
By graven Dolphin let us see
 Whom Cetes are honoured by.

R. J. A.

1896.

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