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Isforholdene i de danske Farvande i Vinteren 1921—1922.

Bearbejdet af Kaptajn C. I. H. SPEERSCHNEIDER.

Oplysningerne om Isforholdene i den forløbne Vinter er indsamlede og bearbejdede paa lignende Maade som tidligere.

Tabel 1 viser Middeltemperaturen og Afvigelserne fra Normalen paa 7 Steder i Landet. Det fremgaar af Tabellen, at Afvigelserne var positive i December og hovedsagelig i Marts, men negative i Januar og Februar.

December 1921. Middellufttrykket*) var ved Skagen 753.8 mm, i København 757.0 mm, eller henholdsvis 4.6 og 2.8 mm lavere end normalt. Vindretningen var overvejende omkring Vest og Sydvest. Paa Fyrskibene, hvor Temperaturen aflæses 6 Gange i Døgnet, var den laveste Temperatur ÷ 4.5 (Gedser-Rev).

Januar 1922. Middellufttrykket var ved Skagen 759.3 mm, i København 759.2 mm, eller henholdsvis 1.3 og 2.9 mm lavere end normalt. Vindretningen var overvejende omkring Øst og Sydost. Paa Fyrskibene var den laveste Temperatur ÷ 10.0° (Gedser Rev).

Februar. Middellufttrykket var ved Skagen 756.6 mm, i København 761.2 mm, eller henholdsvis 0.5 mm lavere og 0.1 mm højere end normalt. Vindretningen var ret skiftende, men dog hyppigst omomkring Syd og Sydvest. Fyrskibene var ikke paa Station.

Marts. Middellufttrykket var ved Skagen 756.1 mm, i København 756.9 mm, eller henholdsvis 2.1 mm og 2.2 mm lavere end normalt. Vindretningen var skiftende.

Paa Fyrskibene var den lavest aflæste Temperatur ÷ 6.0° (Læsø Trindel).

Tabel 2 viser de Frostperioder og Frostdage, som indtraf i Vinterens Løb. I November fandtes der nogle Frostdage midt i Maaneden og fra de sidste Dage af November til den 5te December en mindre

*) Reduceret til 0° C., Havets Overflade og Tyngden ved 45°.

The State of the Ice in the Danish Waters during the Winter 1921—1922.

Prepared by Commander C. I. H. SPEERSCHNEIDER.

The information concerning the state of the ice during the past winter has been gathered and prepared in a similar manner as formerly.

Table 1 shows the mean temperature of the air and the variations from the normal state at 7 different stations. It will be seen that the variations were positive in December, and on the whole also in March, while they were negative in January and February.

December 1921. The mean pressure of the air*) at the Scaw was 753.8 mm and at Copenhagen 757.0 mm, or respectively 4.6 and 2.8 mm below the normal. Westerly and southwesterly winds were predominant. At the light ships, where the temperature is read 6 times in the 24 hours, the lowest temperature was ÷ 4.5° (Gedser Rev).

January 1922. The mean pressure of the air at the Scaw was 759.3 mm and at Copenhagen 759.2 mm, or respectively 1.3 mm and 2.9 mm below the normal. Easterly and southeasterly winds were predominant. At the light ships the lowest temperature was ÷ 10.0° (Gedser Rev).

February. The mean pressure of the air at the Scaw was 756.6 mm and at Copenhagen 761.2 mm, or respectively 0.5 mm below and 0.1 mm above the normal. The direction of the wind was rather variable, although southerly and southwesterly winds were most frequent. All the light ships were withdrawn.

March. The mean pressure of the air at the Scaw was 756.1 mm and at Copenhagen 756.9 mm or respectively 2.1 mm and 2.2 mm below the normal. The direction of the wind was variable.

At the light ships the lowest temperature was ÷ 6.0° (Læsø Trindel).

Table 2 gives the occurrence of frosty periods and frosty days during the winter. In November a few frosty days occurred about the middle of the month, and a short frosty period occurred from the

*) Reduced to 0° C. to the level of the sea and the gravity at Lat. 45°.

Frostperiode, ligeledes var der et Par enkelte Dage med Frost midt i December og i Begyndelsen af Januar. Vinterens egentlige og ret langvarige Frostperiode faldt fra den 12te Januar til c. 17. Februar og var gennemsnitlig paa c. 36 Dages Varighed. I Marts faldt der enkelte spredte Frostdage, der ikke foraarsagede Isdannelse.

Af Stationerne i Tabel 2 havde Randers den største Kuldesum (192.9), Hammeren den mindste (140.8).

Tabel 3 viser Vandets Overfladetemperatur og Saltholdighed i Løbet af Vinteren, Middeltal er opført for hvert Tidøgn. Fra midt i Januar, da Frostperioden begyndte, faldt Vandets Temperatur hurtigere. Da Fyrskibene blev inddragne i Slutningen af Januar var der gennemgaaende, for de Fyrskibe som laa paa dybt Vand, negativ Temperatur i 5 Meters Dybde 1 à 2 Dage før der viste sig Is i Overfladen. Ved Fyrskibe, som laa paa mindre dybt Vand kom der Is i Overfladen samtidig med at Temperaturen i Overfladen blev negativ, medens der endnu i 5 Meters Dybde var positiv Temperatur eller Temperatur lige ved 0°.

Overfladelaget gik ved Skagen og Læsø-Trindel ned til c. 20 Meters Dybde, ved Anholt-Knob og Schultz-Grund til c. 15 Meters Dybde og i Læsø-Rende og ved Lappe-Grund ned til c. 10 Meters Dybde.

Isdannelsen i Hovedfarvandene begyndte saaledes c. 14 Dage efter Frostens Indtræden; da Frostperioden ophørte midt i Februar blev Isen liggende i Hovedfarvandene i ret store Masser til de sidste Dage af Februar og endvidere som Drivis indtil den første Uge af Marts med.

Aarsagerne til Isdannelsen i afvigte Vinter var særlig det tynde Overfladelag, den ringe Strøm og den lave Saltholdighed.

Den laveste Saltholdighed indtraf til forskellig Tid paa de forskellige Steder, men gennemgaaende var Saltholdigheden i Hovedfarvandene særlig lav ved Midten af Januar og holdt sig ret lav flere Steder Resten af Vinteren. Ved Bornholm var Saltholdigheden konstant hele Vinteren.

I *Tabel 4* gives en Oversigt over samtlige Stationer i Landet, hvorfra der føres Observationer over Isen.

last days of November to December 5th. Also in the middle of December and the beginning of January a few frosty days occurred. The real and rather long frosty period of the winter fell from January 12th to February 17th and lasted on an average for 36 days. In March only some odd frosty days occurred which not caused any formation of ice.

Of the stations mentioned in Table 2 Randers had the greatest amount of cold (192.9) and Hammeren the smallest (140.8).

Table 3 gives the temperature and the salinity of the surface water during the winter, the mean values being quoted for each decade. From the middle of January, when the frosty period set in, the temperature of the water was sinking fast. When the light ships were withdrawn about the end of January, it was observed that, at the light ships lying in deep water, the temperature was generally negative at a depth of 5 m 1 or 2 days before any ice appeared on the surface. At the light ships lying in less deep water the appearance of the ice on the surface was coincident with the temperature of the surface water becoming negative, while the temperature at a depht of 5 m was still positive or very near 0°.

At the Scaw and at Læsø Trindel the surface layer reached to a depth of about 20 m, at Anholt Knob and at Schultz Grund to about 15 m, and at Læsø Rende and at Lappe Grund to about 10 m.

Thus the formation of ice in the main waters began about a fortnight after the commencement of the frost. When the frosty period ceased about the middle of February, rather great masses of ice remained in the main waters to the last days of February, and in the form of drift ice it remained till the end of the first week of March.

The abundant formation of ice during the past winter was espicially occasioned by the thinness of the surface layer, the slight current and the low salinity of the water.

The lowest salinity was observed at different times at the various stations, but generally the salinity in the main waters was specially low about the middle of January, and at several stations it remained low during the rest of the winter. At Bornholm the salinity was constant all through the winter.

Table 4 contains a summary of all the stations in the country, where observations concerning the ice are taken.

For at hjælpe til en ensartet Bedømmelse er Isforholdene udtrykt ved Bogstaver, som har følgende Betydning:

Isfrit	A	Svær Driv-Is	F
Løs Sjap- og Kvadder-Is	B	Pak-Is	I
Sammenpakket Sjap- og Kvadder-Is	E	Skrue-Is	H
Spredt Driv-Is	C	Tynd Fast-Is	D
Driv-Is	K	Svær Fast-Is	G

Til nærmere Forklaring paa disse Benævnelser tjener følgende Beskrivelse:

B. *Sjap-Is* kaldes den Masse, der dannes af Sne og Vand eller af smaa Ispartikler, saalænge den ikke er frosset sammen endnu. *Kvadder-Is* kaldes de smaa, i Reglen afrundede Isflader eller Isklumper, som kan optræde for sig, førte sammen af Vind og Sø, men som hyppig træffes i Forbindelse med Sjap-Is.

E. *Sammenpakket Sjap- og Kvadder-Is* er Sjap-Is eller Kvadder-Is eller begge Dele i Forening, som paa Grund af Kuling eller Strøm, eller mulig Hindring for Isens Bevægelse er pakket sammen i en grødlignende Masse af antagelig Tykkelse.

C. *Spredt Driv-Is.* Isflager eller Iskodser, som med større Mellemrum er spredte over Farvandet, og som er i Drift.

K. *Driv-Is.* Isflader eller Iskodser i mere samlede Masser, som er i Drift.

F. *Svær Driv-Is* Svære Isflager eller Iskodser i samlede Masser, som er i Drift.

I. *Pak-Is.* Svære Iskodser, som af Kuling eller Strøm, eller, hvad oftest er Tilfældet, paa Grund af Indsnævring af Farvandet, er pakkede sammen til en svær tæt Masse.

H. *Skrue-Is.* Is, som skruer.

D. *Tynd Fast-Is.* En sammenfrosset, landfast Isflade af mindre Styrke.

G. *Svær Fast-Is.* En sammenfrosset, landfast Isflade af betydelig Styrke.

Besejlingsforholdene er udtrykt ved Bogstaver, som har følgende Betydning:

Skibsfarten uhindret	N
» vanskelig for Sejlskibe	O
» vanskelig; for Sejlskibe kun mulig med Bugserhjælp	P
Skibsfarten lukket for Sejlskibe	Q
» kun mulig for kraftige Dampere	R
» kun mulig med Isbryderhjælp	S
» helt lukket	T
Rende holdes aaben med Isbryder	U

I Tabel 5 er for hvert Sted anført, hvormange Dage der har været Is af de forskellige Arter, og hvormange Dage Skibsfarten har været paavirket deraf. Endvidere findes Rubrikker for det samlede Dageantal med Is samt for Tiderne for første og sidste Ismelding. Det maa dog erindres, at Stedet i Mellemtiden godt kan have været isfrit selv i længere Tid.

In order to further uniformity of judgement, the state of the ice is indicated by letters having the following signification.

Free of ice	A	Heavy drift ice	F
Brash and pancake ice	B	Pack	I
Packed brash and pancake ice	E	Screw ice	H
Open ice	C	Thin fixed ice	D
Drift ice	K	Heavy fixed ice	G

The following description gives a more precise explanation of the designations above:

B. *Brash ice* is a mass consisting of snow and water, or of very small pieces of ice not yet frozen together. *Pancake ice* consists of small, generally round, ice flakes or ice lumps. It may appear alone, brought together by the wind or the sea, but it often appears in connection with *brash ice.*

E. *Packed brash and pancake ice* is brash ice or pancake ice or both at the same time, which has been packed together in a turbid mass of considerable thickness either by the wind or the current or by some obstruction to the free drift of the ice.

C. *Open ice* is drifting ice flakes or hummock ice scattered over the water at greater intervals.

K. *Drift ice* is drifting ice flakes or hummock ice in more collected masses.

F. *Heavy drift ice* is drifting heavy ice floes or hummock ice in close masses.

I. *Pack* means heavy ice floes, which have been packed together in heavy, dense masses, either by the wind or the current or — as is generally the case — by a narrowing of the waters.

H. *Screw ice* means ice that is screwing or nipping.

D. *Thin fixed ice* means thin land ice.

G. *Heavy fixed ice* means heavy land ice.

The conditions for navigation are indicated by letters having the following signification.

Navigation unimpeded	N
» difficult for sailing vessels	O
» difficult, impossible for sailing vessels without tug-boat	P
Navigation closed for sailing vessels	Q
» only possible for powerful steamers	R
» impossible without the assistance of icebreaker	S
» quite closed	T
Channel kept open by means of ice breaker	U

In Table 5 is for each station put down the number of days with ice of the various descriptions and the number of days on which navigation has been affected by the ice. Further rubrics will be found giving the total number of days with ice, and the dates of the first and the last report of ice. However, it must be noted, that in the interval the station may very well have been free of ice, even for a longer period.

I sidste Rubrik er der for enkelte Pladser anført den største Tykkelse i cm, som Isen har naaet.

Oversigt over Isforholdene i de forskellige Farvande.

Fra midt i Januar 1922 faldt Vandets Temperatur paa Grund af Frosten. Da Temperaturen enkelte Steder var under 0° i 5 Meters Dybde blev Ismeldingstjenesten etableret den 24de Januar.

Den 26de begyndte Isdannelsen i den sydlige Del af Store Bælt mellem Lolland og Sprogø, idet stærkt afkølet Vand fra det isfyldte Farvand Nord for Lolland drev Nord paa forbi Omø op i Sprogø Østerrende. Den følgende Dag dannedes Is overalt Syd for Sprogø indtil Albuen samt i Lille Bælt Øst for Als, hvor koldt Vand fra det isfyldte Farvand Syd for Fyen drev ud i Bæltet. Den 28—30te Januar dannedes Isen i hele Farvandet fra Gedser gennem Bælterne og Nord for Sjælland.

Den 31te Januar forværredes Isforholdene, ikke fordi Frosten om Natten havde været strængere end de foregaaende Nætter, men antagelig fordi Overfladen nu var saa afkølet, at Vandets Frysepunkt blev naaet, Isen laa i Sund og Bælter, stærkest mellem Omø og Gedser; ogsaa i Kattegat begyndte nu Isdannelsen.

Den 1ste Februar begyndte Isen langs svensk Kyst udfor Vinga at drive Vest paa, hvorfor Isen den 2den Øst og Vest for Læsø samt ved Skagen blev saa stærk, at Dampere vanskelig kunde passere.

I de følgende Dage blev Isforholdene stadig vanskeligere baade i Kattegat og i Bælthavet. I Dagene omkring den 6te og 7te var Kattegat Østerrende passabel, medens uigennemtrængelig Is laa Vest for en Linie fra Skagen over Læsø, Anholt og Hesselø og derfra ned mod Sjællands Rev. Bælter og Sundet var kun passabel med Isbryderhjælp, medens Østersøens isfri Vand gik hen til Linien Falsterbo—Stevns.

In the last column is given — for some of the stations — the greatest thickness in cm, which the ice has attained.

Summary of the state of the ice in the various waters.

From the middle of January 1922 the temperature of the water was sinking on account of the frost. On January 24th, when the temperature at some stations was below 0° at a depth of 5 m, the ice signal service was established.

On the 26th the ice commenced to form in the southern part of the Great Belt between Lolland and Sprogø, owing to the very cold water from the ice-filled waters north of Lolland flowing northward past Omø into Sprogø Østerrende. On the following day ice was formed everywhere south of Sprogø to Albuen and also in the Little Belt east of Als, where cold water from the ice-filled waters south of the Funen streamed into the Belt. Between the 28th and the 30th of January all the waters froze up from Gedser through the Belts and north of Sealand.

On January 31st the state of the ice grew worse, not because the frost had been more severe during this night than during the former nights, but probably because the surface of the water now had grown so cold, that the freezing point of the water had been attained. The Sound and Belts were covered with ice, which was thickest between Omø and Gedser, and now the ice also commenced to form in the Kattegat.

On February 1st the ice along the Swedish coast off Vinga commenced to drift towards the west which on the 2nd made the ice so close east and west of Læsø and at the Scaw that steamers had difficulty in passing.

During the following days the conditions of the ice continued to grow worse as well in the Kattegat as in the Belt Sea. About the 6th and the 7th the Kattegat Østerrende was passable, while impenetrable ice was lying west of a line from the Scaw over Læsø, Anholt and to Hesselø, and from here towards Sjællands Rev. The Belts and the Sound might only be passed with the assistance of icebreakers, while the ice-free water of the Baltic reached to the line between Falsterbo—Stevns.

Omkring d. 9de og 10de var hele Kattegat en Ismark kun mulig for de kraftigste Dampere og flere Steder endda kun for Isbrydere. Bælterne indtil Gedser var nu lukkede for den gennemgaaende Skibsfart, medens Sundet kun var passabelt med Isbryderhjælp.

Fra den 11te begyndte Dampere i tiltagende Antal at sidde fast i Isen i Nærheden af Morup Tange, hvor Isen altid har Tilbøjelighed til at presses sammen. Isen trængtes mere og mere over mod Kattegats Østside, hvor der den 15de Februar var svære Isskruninger lige fra Vinga til Kullen, og hvor et halvt Hundrede Dampere sad fast ved Vinga, Niddingerne og Morup Tange. Samme Dag aabnede den vestlige Vind for Kattegat Vesterrende fra Skagen til Grenaa, men den 17de bredte Isen sig for en svag, sydostlig Vind atter Vest paa og forhindrede Sejladsen gennem Læsø Rende. De haardeste Isforhold fandtes Øst for en Linie fra et Stykke udenfor Vinga over Læsø, Vest om Anholt og Hesselø ned mod Issehoved paa Samsø. Bælterne var stadig lukkede, Sundet kun mulig med Isbryderhjælp, og i Østersøen var hele Farvandet mellem Bornholm og Sjælland isfyldt.

Fra Marstrand taltes 46 Dampere i Isen, omkring Niddingerne laa c. 16 Dampere og ved Morup Tange sad c. 16 Dampere i 50 cm tyk Is.

Den indtraadte vestlige Vind begyndte fra den 20de efterhaanden at drive Isen fra den jyske Kattegatskyst mod Øst og den 23de var hele Kattegats Vesterrende hovedsagelig isfri, kun truede Isen fra Store Bælt med at spærre Farvandet mellem Hesselø, Grenaalandet og Anholt. Øst paa i Kattegat sad Damperne stadig fast i c. 30 cm tyk Is og Vestkanten af hele denne Ismark gik fra noget Nord for Vinga ned mod Læsø og Anholt til Kullen.

I de følgende Dage blev Vesterrenden i Kattegat helt isfri, og Bælter og Sund aabnedes saa smaat langs Farvandets Vestsider. Den 28de laa Isens Vestkant i Kattegats Østside fra 6—7 Sømil ud for Vinga ned midt mellem Sverige og Læsø og derfra over Anholt til Kullen. Store Bælt var aabent Nord fra til Sprogø,

About the 10th and 11th the Kattegat formed one ice field which only the most powerful steamers were able to penetrate, in several places even only with the assistance of icebreakers. The Belts unto Gedser were now closed for navigation, while the Sound only was passable with the assistance of icebreakers.

From the 11th an increasing number of steamers commenced to stick fast in the ice in the vicinity of Morup Tange, where the ice always has a tendency to pack. The ice was now pressed more and more towards the eastern side of the Kattegat, where violent screwings occurred on the 15th on the whole stretch from Vinga to Kullen, and where about 50 steamers were beset at Vinga, Niddingerne and Morup Tange. On the same day the westerly wind opened the Kattegat Vesterrende from the Scaw to Grenaa, but on the 17th a light southeasterly wind again spread out the ice towards the west impeding navigation through Læsø Rende. The conditions of the ice were worst east of a line starting some distance off Vinga trending over Læsø, west of Anholt and Hesselø towards Issehoved on Samsø. The Belts were still closed, the Sound was only passable with the assistance of icebreakers, and in the Baltic the waters between Bornholm and Sealand were filled with ice.

From Marstrand 46 steamers were counted in the ice, in the vicinity of Niddingerne were 16 steamers, and at Morup Tange about 16 steamers were beset in 50 cm thick ice.

From the 20th the westerly wind that had set in commenced to drive the ice towards the east away from the coast of Jutland, and on the 23rd the whole Vesterrende of the Kattegat might be said to be free of ice, but still the ice coming from the Great Belt threatened to block the water between Hesselø, Anholt and the land around Grenaa. In the eastern part of the Kattegat the steamers still stuck fast in the ice which was about 30 cm thick, and the western edge of this icefield was trending from a little north of Vinga towards Læsø, Anholt and to Kullen.

During the following days the Vesterrende in the Kattegat became completely free of ice, and in the Belts and the Sound the western sides of the fairway commenced to open up. On the 28th the western edge of the ice in the eastern part of the Kattegat was trending from a point 6 to 7 miles off Vinga

og Sundet var aabent langs Vestsiden fra Hveen til Møen.

Den 1ste Marts passerede Skibe ned gennem Kattegat Østerrende; Sundet, Store Bælt og Femer Bælt var aabne, derimod laa Isen stadig i Bugter og indre Farvande samt i hele Lille Bælt. Fra den 4de Marts var Hovedfarvandene isfri, ligeledes Smaalandsfarvandet og enkelte af Fjordene, men endnu laa der noget Is mellem Assens og Sydpynten af Ærø.

Ved Bornholm viste Drivisen sig først den 10de Februar; et Par Dage efter var der allerede svær Drivis mellem Bornholm og Skaane, og den 12te var der isfyldt mellem Bornholm, Rygen og Møen, men Øst for Bornholm stadig isfrit. Saaledes var Forholdet til den 26de Februar, da denne Is spredtes, men endnu den 1ste Marts mødtes en Samling svær Is, der laa fra 10 Sømil Vest for Rønne til 30 Sømil Øst for Stevns. Fra den 4de Marts var der helt isfrit i den vestlige Østersø og omkring Bornholm.

I Vesterhavet var der ved Vyl Fyrskib spredt Drivis i en halv Snes Dage i Begyndelsen af Februar; endog ved Horns-Rev Fyrskib dannedes der Sjapis fra 4de—6te Februar. Vandets Temperatur var baade her og ved Vyl c. $\div 2^0$ eller $0^0.3$ lavere end Vandets Frysepunkt, idet hele Vandmassen fra Overfladen til Bund var underafkølet.

Det maa tillige bemærkes, at den svære sammenpakkede Is under svensk Kyst i Kattegat blev liggende ret længe klos under Kysten, først den 20de Marts meldte Varborg isfrit Hav.

I den svære Is i Kattegats østlige Halvdel sad i Vinterens Løb henved 70 Dampere fast.

Den 31te Januar begyndte mindre Fartøjer at sidde fast i Isen udfor Grenaa. Den 3die Februar løb Dampere fast Øst for Skagen, og fra den 9de sad allerede flere fast i det østlige Kattegat og et Par Dampere drev i Femerbælt, iøvrigt var Bælterne fri

southward midway between Sweden and Læsø and further over Anholt to Kullen. The Great Belt was open from the north to Sprogø, and the western side of the Sound was open from Hveen to Møen.

On March 1st vessels passed through the Østerrende of the Kattegat. The Sound, the Great Belt and the Femer Belt were open, while in the bays and in the inner waters and in the whole of the Little Belt the ice was still lying unbroken. From March 4th the main fairways, the Smaalandsfarvand and a few of the fiords were free of ice, while there still was some ice between Assens and the south point of Ærø.

At Bornholm the drift ice did not appear until February 10th; but already a few days later there was heavy drift ice between Bornholm and Skaane, and on the 12th the whole area between Bornholm, Rygen and Møen was fillid with ice, while the sea east of Bornholm still was free of ice. These conditions continued till February 26th when the ice scattered, but still on March 1st a mass of heavy ice was met with extending from about 10 miles west of Rønne to 30 miles east of Stevns. From March 4th the western part of the Baltic and the waters round Bornholm were free of ice.

In the North Sea open drift ice was observed from the Vyl light ship for about 10 days during the beginning of February, and at the Horn Reef light ship brash was formed from the 4th to the 6th of February. As well at the Horn Reef as at Vyl the temperature of the water was about $\div 2^0$ or $0^0.3$ below the freezing point of the water, the water thus being subcooled from the surface to the bottom.

It must also be noted that the heavy packed ice along the Swedish coast in the Kattegat remained lying close inshore for a rather long time, and it was not until the 20th of March that open sea was reported from Varberg.

In the course of the winter about 70 steamers stuck fast in the ice in the eastern part of the Kattegat.

On January 31st small vessels commenced to stick fast in the ice off Grenaa. On February 3rd steamers stuck fast east of the Scaw, and from the 9th several steamers were beset in the eastern part of the Kattegat, and in the Femer Belt a few steamers were adrift

for fastsiddende Dampere, og i Sundet assisterede Isbryderne Skibene.

Fra den 12te sad mange Dampere i Kattegat, særlig Nord for Kullen, udfor Morup Tange (hvor sydlig Strøm ofte sætter haardt mod Kysten), og paa Strækningen fra Nidingen til Vinga. Tit skruede Isen stærkt, og Situationen var til Tider kritisk for Skibene.

Den 15de sattes Isen haardt ind i Laholm Bugten, og ved Hallands Väderø laa Skibe i 1 Meter Skrueis.

Den 21de ophørte den haardeste Isdrift i det østlige Kattegat, men først den 28de kom de sidste Dampere fri.

For Lille Bælts vedkommende er det værd at notere, at man fra 5te—16de gik og kørte med Motorcycle over Bæltet mellem Middelfart og Jylland, samt kørte til Fænø med Automobil.

Grunden hertil maa søges i, at der i nævnte Tid var meget svag Strøm i Bæltet; med stærkere Strøm havde Bæltet antageligt ikke været tillagt. Dette er et Bevis paa, at selv med moderat Kulde kan man gaa og køre over Lille Bælt. Et tillagt Lille Bælt er ikke i og for sig Bevis paa en særlig stræng Vinter.

De indre Farvande. I Limfjorden var der lidt Is under den første Frostperiode i Slutningen af November og Begyndelsen af December; senere laa Isen fra c. 23de Januar til c. 10de Marts. Bugter og Bredninger havde Is fra 5—9 Uger, de mere aabne Løb fra 4—8 Uger. Skibsfarten var flere Steder helt lukket eller kun mulig med Isbryderhjælp i 5 à 6 Uger, i Skive Fjord endog i henved 2 Maaneder.

I Isefjorden og dens Forgreninger var der lidt Is i Slutningen af November og de første Dage af December; senere var her islagt fra c. 6te Januar til den første Uge af Marts med. I Indløbet var der Is i c. 6 Uger, i Bugter og indre Fjorde i c. 8 à 10 Uger. Skibsfarten var helt lukket i 4—6 Uger.

with the ice; otherwise no steamers stuck fast in the Belts, and in the Sound the vessels were assisted by icebreakers.

From the 12th many steamers were beset in the Kattegat especially north of Kullen, off Morup Tange (where the south current often sets hard against the coast), and on the track from Niddingerne to Vinga. It often happened that the ice was screwing violently, and now and again the vessels were in rather critical situations.

On the 15th the ice was pressed violently into the Laholm Bugt, and at Hallands Væderø some vessels were beset in screw ice about 1 m thick.

On the 21st the worst drift of the ice ceased in the eastern part of the Kattegat, but it was not until the 28th that the last steamer got free.

Concerning the Little Belt it is worth noting that between the 5th and the 16th one might walk and even ride on motor cycles over the Belt between Middelfart and Jutland, and also drive to Fænø in motor cars.

The reason why this was the case must be sought in the fact that during the time in question the current was very slight; if the current had been stronger it is not probable that the Belt would have been frozen. This proves that the Little Belt may be crossed on the ice even with a moderate cold. A frozen Little Belt is not in itself a proof of a specially severe winter.

The inner waters. In Limfjorden there was a little ice during the first frosty period about the end of November and the beginning of December. Later on the ice was lying from January 23rd to March 10th. The bays and the Bredninger had ice for 5 to 9 weeks, the more open channels for 4—8 weeks. At several places the navigation was quite closed, or only possible with the assistance of icebreaker for 5 to 6 weeks, in the Skive Fjord even for about 2 months.

In Isefjorden and its branches there was a little ice during the end of November and the first days of December, while later on there was ice from January 6th to the end of the of the first week of March. In the entrance there was ice for 6 weeks, in the bays and inner fjords for about 8 to 10 weeks. The navigation was completely closed for 4 to 6 weeks.

I Smaalandsfarvandet var der Is fra medio Januar til Begyndelsen af Marts. Havne og Fjorde havde Is i 7 à 10 Uger. Helt lukket var der enkelte Steder i 4 Uger.

I Farvandet mellem Øerne Syd for Fyen laa Isen fra c. 22de Januar til 10de Marts. Havnene havde Is i 4—7 Uger, og helt lukket var Skibsfarten gennemgaaende i 4 Uger.

Der var i Vinteren 1921—22 ingen Stationer isfri. 93 Stationer havde Is i mere end 1 Maaned og 14 Stationer i mere end 2 Maaneder.

Det højeste Antal Dage med Is — 82 Dage — havde Ringkøbing Fjord. Den første Is viste sig den 9de November (Mariager-, Randers- og Vejle Fjorde), den sidste Is saas den 22de Marts (Ringkøbing Fjord).

Isens Tykkelse blev maalt fra 86 Stationer. Største Tykkelse af ren Is, 70 cm, blev maalt i Store Bælts nordlige Del; i de 3 tidligere Isvintre, Foraaret 1909, 1912 og 1917 var Tykkelsen 50 cm. Den højeste Tykkelse var for Limfjordens vedkommende gennemsnitlig 44 cm (i 1917 var den 32 cm); Kattegat 40 cm (i 1917, 18 cm); Havne og Fjorde 30 cm (28 cm); Sundet 32 cm (23 cm); Store Bælt 50 cm (10 cm), Fjorde og Bugter 32 cm (30 cm); Lille Bælt 30 cm (10 cm); Nysted Bredning og omkring Gedser 65 cm.; Isefjorden 32 cm (31 cm); Smaalandsfarvandet 45 cm; Havne og Fjorde 30 cm; Farvandet Syd for Fyen i Fjorde og Havne 35 cm.

Tykkelsen af Isen var saaledes nogenlunde ens for de forskellige Farvande, men gennemsnitlig 12 cm større end i Vinteren 1916—17.

I det østlige Kattegat maaltes den 3die Februar 10 cm ren Is; Tykkelsen tiltog stadig og var den 17de Februar — da Frostperioden ophørte — 50 cm; den 23de maaltes 32 cm. I Skruningerne var Isen 4 à 5 Meter tyk.

Ved Christiansø var Drivisen c. 125 cm tyk og i de indre Farvande var Pakisen c. 1 Meter tyk. I Femer Bælt var Skrueisen 4 à 5 Meter tyk.

Table 6 viser hvorlænge Fyrskibene gennemsnitlig har været inde for Is siden 1879. Det fremgaar

In Smaalandsfarvandet there was ice from the middle of January till the beginning of March. The harbours and fjords had ice for 7 to 10 weeks. Some few places were quite closed for about 4 weeks.

In the waters between the islands south of the Funen the ice was lying from about January 22nd to March 10th. The harbours had ice for 4 to 7 weeks, and all navigation was closed for about 4 weeks.

None of the stations were free of ice during the winter 1921—22. 93 stations had ice for more than 1 month and 14 stations for more than 2 months.

The highest number of days with ice was 82 days which was reported from Ringkøbing Fjord. The first ice appeared on November 9th (Mariager—Randers and Vejle Fjord) the last ice was observed on March 22nd (Ringkøbing Fjord).

The thickness of the ice was measured at 86 stations. The greatest thickness of clean ice, 70 cm, was measured in the northern part of the Great Belt; during the 3 previous ice winters, 1909, 1912 and 1917 the greatest thickness was 50 cm. In Limfjorden the greatest thickness averaged 44 cm (1917 it was 32 cm); in the Kattegat 40 cm (in 1917 18 cm); harbours and fjords 30 cm (28 cm) the Sound 32 cm (23 cm), the Great Belt 50 cm (10 cm), fjords and bays 32 cm (30 cm); the Little Belt 30 cm (10 cm); Nysted Bredning and round Gedser 65 cm; Isefjorden 32 cm (31 cm), Smaalandsfarvandet 45 cm, its harbours and fjords 30 cm, the harbours and fjords in the waters south of the Funen 35 cm.

Thus the thickness of the ice was pretty near the same in the various waters, but it was on an average 12 cm thicker than during the winter 1916—17.

On February 3rd the clean ice was 10 cm thick in the eastern part of the Kattegat, and the thickness continued to increase until February 17th when the frosty period ceased, on this day the thickness was 50 cm, and on the 23rd it was still 32 cm. The screw ice attained a thickness of 4 to 5 m.

At Christiansø the thickness of the drift ice was 125 cm, and in the inner waters the pack was about 1 m thick. In Femer Belt the screw ice attained a thickness of 4 to 5 m.

Table 6 gives the mean duration of the withdrawal of the light ships on account of ice since 1879.

af Tabellen, at Fyrskibene indenfor Skagen som Regel inddrages i 1 af 3 Vintre. Naar Fyrskibene inddrages er de gennemsnitlig inde i 5 à 6 Uger.

Ismeldingstjenesten, som træder i Virksomhed, naar Is begynder at optræde i Hovedfarvandene var etableret fra 24de Januar til 11te Marts, ialt i 47 Dage. Af 29 Vintre har Istjenesten været etableret i 10, hvilket svarer til Is i Hovedfarvandene i 1 af 3 Vintre. I ingen af Vintrene er Istjenesten begyndt før 24de Januar, og gennemsnitlig varer Istjenesten 37 Dage.

Til Sammenligning mellem Vinteren 1921—22 og de 15 foregaaende Vintre tjener Tabel 7, hvor Tallene angiver det gennemsnitlige Antal Dage med Is for de forskellige Slags Farvande og Havne. Det ses, at Vinteren 1921—22 havde megen Is, idet Gennemsnittet af Antal Isdage for »Alle Stationer« var 39,4, medens Gennemsnittet for 16 Aar er 16.9 Dage med Is.

De sidste 16 Vintre grupperer sig med Hensyn til Isdagenes Antal i 2 skarpt adskilte Grupper. For de 5 isrige Vintre, med Is i Hovedfarvandene, er Gennemsnittet 37.0 Dage med Is med Grænserne 30.3 og 44.9. Af disse 5 Vintre varede Vinteren 1916—17 længere end de andre, medens den sidste Vinter ikke var meget mere langvarig end Gennemsnittet, men derimod var Isforholdene langt haardere end almindelig. Gennemsnittet for de 11 isfattige Vintre er 7.7 Dage med Is og med Grænserne 0.9 og 15.3. Af disse 11 Vintre var Vinteren 1920—21 en særlig isfattig Vinter.

I *Tabel 7* er tillige anført Middeltallene af Kuldesummen for Stationerne i Tabel 2, heraf ses, at Gennemsnittet af Middeltallet for 5 haarde Vintre er 147.2 og for 11 milde Vintre 51.2.

Det ses af Tabel 7, at gennemsnitlig er 1 af 3 Vintre en Isvinter.

Meteorologisk Institut bringer sin Tak til alle de Observatorer, hvis Iagttagelser har gjort det muligt at fremkomme med de foreliggende Oplysninger om Isforholdene i de danske Farvande i Vinteren 1921—1922.

Maj 1922.

It appears from the table that the light ships inside the Scaw as a rule are withdrawn during 1 winter out of 3. When the light ships are withdrawn the withdrawal usually lasts 5 to 6 wecks.

The ice signal service, which is carried into effect when the ice begins to appear in the main waters, was established from January 24th to March 11th or altogether for 47 days. The ice signal service has been established during 10 winters out of 29, which corresponds with the appearance of ice in the main fairways during 1 winter out of 3. The ice signal service has never been established before the 24 of January and on an average the service lasts 37 days.

To compare the winter 1921—22 with the 15 preceding winters Table 7 has been compiled, the ciphers of which give the average number of days with ice in the various waters and harbours. It will be seen that the winter 1921—22 had much ice, the average of the days with ice at all the stations being 39.4; while the mean for 16 years is 16.9 days with ice.

Relative to the number of days with ice the last 16 winters form 2 distinctly different groups. During the 5 cold winters with ice in the main fairways the mean is 37.0 days with ice, the limits being 30.3 and 44.9 Of these 5 winters the winter 1916—17 lasted longer than the others, while the last winter only lasted a few days longer than the mean, but the conditions of the ice were much more difficult than usual. The mean of the 11 mild winters is 7.7 days with ice, the limits being 0.9 and 15.3. Of these 11 winters the winter 1920—21 was specially mild.

In *Table 7* is also given the means of the amount of cold at the stations mentioned in Table 2, and it will appear that the mean for the 5 cold winters is 147.2 and for the 11 mild winters 51.2.

Table 7 shows that 1 winter out of 3 is an ice winter.

The Meteorological Institute herewith desires to express its thanks to the many observers who have rendered it possible to publish the present particulars concerning the state of the ice in the Danish waters during the winter 1921—1922.

May 1922.

Tab. 1.

Luftens Middeltemperatur samt Afvigelserne fra Normalen i Vinteren 1921—1922.

The mean-temperature of the air and the variations from the normal temperature during the winter 1921—1922.

		Fanø (Nordby)	Skagen (Fyret)	Randers (Strømmen)	Samsø (Tranebjerg)	Bogø (Navig. Skolen)	Kjøbenhavn (Met. Inst.)	Hammershus Sandvig
December	Middeltemp..	0.9	1.8	0.3	1.8	1.2	1.4	1.9
	Afvigelsen ..	+ 2.6	+ 1.7	+ 2.1	— 0.9	+ 1.1	+ 1.1	+ 0.5
Januar	Middeltemp..	— 0.1	0.7	— 0.5	0.4	— 0.3	0.1	0.3
	Afvigelsen ..	— 1.6	— 2.0	— 0.9	— 1.6	— 1.4	— 1.2	— 1.4
Februar	Middeltemp.	— 0.1	0.0	— 0.6	0.2	— 0.1	— 0.1	0.1
	Afvigelsen .	— 2.0	— 1.8	— 1.3	— 2.7	— 1.9	— 1.7	— 1.7
Marts	Middeltemp..	1.5	1.3	1.3	1.7	1.7	1.4	1.2
	Afvigelsen ..	+ 0.6	— 0.2	+ 0.4	+ 0.2	+ 0.5	+ 0.6	— 0.1

Tab. 2.

Frostperioderne og Frostdagene i Vinteren 1921—1922.

The frosty periods and frosty days during the winter 1921—1922.

		Frostdage *frosty days*	1ste Frostperiode *1st frosty period*	Frostdage *frosty days*	Frostdage *frosty days*	2den Frostperiode *2nd frosty period*	Frostdage *frosty days*				Samlet Kuldesum *Total amount of cold*
Fanø (Nordby)	a	$^{8}/_{11}$-$^{12}/_{11}$	$^{25}/_{11}$-$^{5}/_{12}$		$^{5}/_{1}$-$^{8}/_{1}$	$^{12}/_{1}$-$^{19}/_{2}$			$^{21}/_{3}$-$^{24}/_{3}$	$^{30}/_{3}$-$^{31}/_{3}$	
	b	3 m. Afb.	11		4	38 m. Afb.			3 m. Afb.	2	174.3
	c	— 3.9	— 20.3		— 6.2	— 139.8			— 2.7	— 1.4	
Skagen (Fyret)	a	$^{8}/_{11}$	$^{1}/_{12}$-$^{5}/_{12}$		$^{4}/_{1}$-$^{8}/_{1}$	$^{12}/_{1}$-$^{19}/_{2}$	$^{9}/_{3}$-$^{10}/_{3}$	$^{20}/_{3}$-$^{21}/_{3}$	$^{24}/_{3}$-$^{25}/_{3}$	$^{30}/_{3}$-$^{31}/_{3}$	
	b	1	4		5	37 m. Afb.	2	2	2	2	150.6
	c	— 1.0	— 2.0		— 6.2	— 130 0	— 5.7	— 1.6	— 2.1	— 2.0	
Randers (Strømmen)	a	$^{8}/_{11}$-$^{13}/_{11}$	$^{22}/_{11}$-$^{5}/_{12}$		$^{5}/_{1}$-$^{8}/_{1}$	$^{12}/_{1}$-$^{17}/_{2}$	$^{9}/_{3}$		$^{20}/_{3}$-$^{25}/_{3}$	$^{29}/_{3}$-$^{31}/_{3}$	
	b	3 m. Afb.	12 m. Afb.		4	34 m. Afb.	1		6	3	192.9
	c	— 5.7	— 31.2		— 9.3	— 134.9	— 0.1		— 8.4	— 3.3	
Samsø (Tranebjerg)	a	$^{8}/_{11}$-$^{13}/_{11}$	$^{27}/_{11}$-$^{5}/_{12}$	$^{12}/_{12}$-$^{13}/_{12}$	$^{5}/_{1}$-$^{8}/_{1}$	$^{12}/_{1}$-$^{17}/_{2}$			$^{21}/_{3}$-$^{24}/_{3}$	$^{29}/_{3}$-$^{31}/_{3}$	
	b	2 m. Afb.	9 m. Afb.	2	4	36 m. Afb.			3 m. Afb.	3	162.9
	c	— 1.2	— 10.7	— 2.3	— 7.5	— 133.3			— 6.0	— 1.9	
Bogø (Navig. Skolen)	a	$^{8}/_{11}$-$^{13}/_{11}$	$^{27}/_{11}$-$^{5}/_{12}$	$^{11}/_{12}$-$^{14}/_{12}$	$^{5}/_{1}$-$^{8}/_{1}$	$^{12}/_{1}$-$^{17}/_{2}$			$^{21}/_{3}$-$^{24}/_{3}$	$^{31}/_{3}$	
	b	3 m. Afb.	8 m. Afb.	4	4	35			4	1	182.3
	c	— 3.3	— 10.0	— 7.2	— 10.3	— 145.2			— 5.9	— 0.4	
Kjøbenhavn (Met. Inst.)	a	$^{7}/_{11}$-$^{13}/_{11}$	$^{26}/_{11}$-$^{5}/_{12}$	$^{12}/_{12}$-$^{13}/_{12}$	$^{4}/_{1}$-$^{8}/_{1}$	$^{12}/_{1}$-$^{17}/_{2}$			$^{21}/_{3}$-$^{25}/_{3}$	$^{30}/_{3}$	
	b	3 m. Afb.	7 m. Afb.	2	5	35 m. Afb.			5	1	153.7
	c	— 3.3	— 5.6	— 3.5	— 9.6	— 124.5			— 6.3	— 0.9	
Hammershus (Sandvig)	a		$^{2}/_{12}$-$^{5}/_{12}$	$^{11}/_{12}$-$^{15}/_{12}$	$^{5}/_{1}$-$^{9}/_{1}$	$^{13}/_{1}$-$^{17}/_{2}$			$^{21}/_{3}$-$^{25}/_{3}$	$^{29}/_{3}$-$^{30}/_{3}$	
	b		2 m. Afb.	5	5	34 m. Afb.			5	2	140.8
	c		— 3.3	— 7.2	— 7.4	— 112.4			— 8.6	— 1.9	

Anm. 1: **a** er Frostperiodens Varighed *(the duration of the frosty period)*.
b er Antal af Dage, hvis Middeltemperatur var under 0° *(number of days with a mean-temperature below 0°)*.
c er Kuldesummen (Produktet af Frostperiodens Middeltemperatur og Dageantallet) *(the amount of cold (the product of the mean-temperature of t frosty period and the number of days of the period))*.
m. Afb. betyder med Afbrydelse *(with interruption)*.

Tab. 3.

Middeltal af Vandets Overfladetemperatur og Saltholdighed Kl. 8 Fm. i Vinteren 1921—1922

The mean temperature and salinity of the surface water at 8 a. m. during the winter 1921—1922.

(Det øverste Tal i hver Rubrik angiver Temperaturen, det underste Saltholdigheden i $^0/_{00}$.)

(The upper number in each rubric indicates the temperature, the lower the salinity).

1921—1922	Skagens-Rev	Læsø-Rende	Anholt-Knob	Lappe-Grund	Gjedser-Rev	Odde-Sund	Aalborg	Middelfart	Svendborg-Sund	Sprogø	Kjels-Nor	Hundested	Middelgrundsfortet	Masnedø	Christianssø
1/12—10/12	5.0 28.8	4.5 **22.5**	2.6 **15.9**	2.5 13.3	4.2 11.2	0.6 31.0	0.9 23.8	3 6 **15.5**	1.7 **17.7**	3.5 12.7	3.6 12.6	2.1 **15.2**	3.2 10.1	4.1 11.4	5.4 7.6
11/12—20/12	6.3 33.4	5.5 27.9	3.7 20 3	3.1 18.9	3.3 14.9	2.4 32.2	1.8 25.4	4.2 19.0	1.7 19.6	3.7 19.5	3.6 17.4	1.8 16.9	3.9 17.3	3.0 12.8	5.1 7.7
21/12—31/12	5.9 33.6	5.6 33.3	5.0 28.8	3.7 20.7	3.9 19 1	3.4 32.6	2.2 28.4	5.2 24.1	3.2 20.9	4.4 23.3	4.1 21.5	2.9 18.1	3.7 18.7	3.7 16.5	5.1 7.9
1/1—10/1	4.2 33.7	3.8 33.3	3 8 30.2	2.8 21.0	2.8 17.0	2.0 31.9	0.3 29.8	3.6 23.4	2.1 19.8	3.3 24.7	2.8 22.6	1.7 20.3	3.4 18.8	3.0 17.5	3.7 7.5
11/1—20/1	2.3 33.3	0.8 32.3	1.7 25.8	1.3 12.1	1.7 11.6	−0.5 30.9	−1.4 29.4	1.9 21.3	0.8 20.5	1.4 17.7	1.1 16.8	0.4 21.9	1.6 9.8	2.1 10.5	2.8 7.4
21/1—31/1	**0.0** **25.1**	**−0.4** 22.9	**−0.2** 18.0	**0.6** **8.3**	0.9 9.4	**−1.8** 30.8	**−1.9** 29.6	−0.3 17.5	−1.6 20.8	−0.6 11.1	−0.6 13.0	− 0.4 21.7	0.3 8.6	0.6 9.8	1.8 7.5
1/2—10/2	— —	— —	— —	— —	— —	— —	−1.6 25.5	**−1.3** 17.0	**1.9** 18.6	**−0 8** 12.4	**−1.1** 12.4	**−1.0** 19.5	**−0.4** **8.4**	**0.0** 10.5	o 6 7.5
11/2—20/2	— —	— —	— —	— —	— —	−1.6 32.1	−1.1 21.7	0.9 16.0	— —	−0.5 14.3	−0.7 12.3	−0.9 18.8	−0.2 9.9	**0.0** 11.3	**0.0** **7.2**
21/2—28/2	— —	— —	— —	— —	— —	−0.9 32.4	−0.6 22.3	−0.1 18.2	−0.2 18.9	−0.2 **10.8**	−0.3 12.8	−0.2 18.5	0.0 12.3	**0.0** 11.9	**0.0** 7.4
1/3—10/3	1.6 30.6	2.9 27.2	1.3 21.5	1.3 18.9	1.1 15.2	0.6 31.6	1.3 **20.6**	2.1 24.2	0.7 18.9	1.4 19.6	0.8 20.1	0.5 18.2	0.3 18.9	1.6 13.3	0.6 7.3
11/3—20/3	2.0 32.1	2.6 27.5	1.7 22.1	1.7 11.7	1.0 9.3	2.6 30.7	2.0 22.8	2.1 21.3	1.1 18.7	2.2 19.2	1.7 16.1	2.9 18.8	1.6 10.3	1.7 8.7	0.8 7.5
21/3—31/3	1.3 25.2	1.9 25.9	1.2 21.6	0.9 8.6	**0.8** **8.5**	1.9 **29.9**	1.5 25.1	1 4 18.2	1.1 18.4	0.9 11.7	0.7 **11.6**	2.1 18.4	1.4 8.6	1.2 **7.4**	0.6 7.5

Tab. 4.

Liste over alle Isobservationssteder.

List of all iceobservation stations.

Jyllands Vestkyst.

Esbjerg
Graadyb
Farv. v. Vyl Fyrskib
Ringkj. Fjord nordl. Del

Limfjorden.

Thyborøn Kanal
Lemvig Havn og Lem Vig
Nissum Bredning
Oddesund
Thisted Bredning
Sallingsund
Skive Havn og Fjord
Løgstør Bredning
Limfjorden udfor Løgstør
Aggersund
Limfjorden udfor Aalborg
Limfjorden Aalborg-Hals

Kattegat.

Nord for Skagen
Syd for Skagen
Skagen Havn
Ved Hirtsholmene
Frederikshavn
Læsø Rende
Frhvn.-Gøteb. vestl. Del
Frhvn.-Gøteb. østl. Del
Kattegat Øst for Læsø
Kattegat Øst for Anholt
Anholt Havn
Udenfor Hals Barre
Mariager Fjord
Indl. til Mariager Fjord
Katteg. v. Rand. og Mariag. Fjd.
Randers Fjord
Indløb til Randers Fjord
Grenaa Havn
Kattegat ved Grenaa
Kattegat ved Hjelm
Ebeltoft Vig
Aarhus Bugt
Aarhus Havn
Horsens Havn og Fjord
Farv. Vest for Samsø
Farv. Syd for Samsø
Odense Havn og Kanal
Odense Fjord
Odense Gab
Mellem Revsnæs og Samsø
Farvandet udfor Sejrø
Farv. ved Schultz's Grund
Kattegat ved Hesselø

Sundet.

Farv. udfor Nakkehoved
Farvandet ved Helsingør
Helsingør Havn
Sundet ved Kjøbenhavn
Kjøbenhavns Havn
Drogden
Flinterenden
Farv. Syd for Drogden
Kjøge Bugt inderste Del
Farvandet ved Stevns

Store Bælt

Kallbg. Havn & indenf. Gisseløre
Kallundborg Fjord
St. Bælt udfor Romsø
Kjerteminde Bugt
Nyborg Havn
Nyborg Fjord
Vesterrenden
Østerrenden
Korsør Havn
St. Bælt ved Omø
St. Bælt ved Albuen
Nakskov Fjord
Indløb til Nakskov Fjord
St. Bælt ved Kjelsnor

Lille Bælt.

Farv. udfor Æbelø
Vejle Havn og Fjord
Bogense Havn
Fredericia Havn
Lille Bælt ved Middelfart
Kolding Havn og Fjord
Lille Bælt ved Assens
Haderslev Fjord
Aarøsund
Aabenraa Havn og Fjord
Alssund
Farvandet Syd for Alssund
Farvandet udfor Skjoldnæs

Østersøen.

Rødby Havn
Femerbælt udfor Rødby
Nysted Bredning
Farvandet udfor Gjedser
Farvandet udfor Møen
Fakse Bugt inderste Del
Præstø Havn og Fjord

Bornholm.

Rønne Havn
Østersøen ved Rønne
Østersøen ved Hammeren
Østersøen ved Christianssø
Nexø Havn
Østersøen ved Dueodde

Isefjorden.

Indløbet til Rørvig
Nykjøbing Havn og Fjord
Holbæk Havn og Fjord
Roskilde Havn
Roskilde Fjord

Smaalandsfarvandet.

Skjelskør Havn og Fjord
Omø Sund
Karrebæksminde Havn
Farvandet Nord for Vejrø
Staaldybet
Bandholm Havn
Farvandet udfor Bandholm
Guldborg Sund udf. Nykjøbing
Guldborg Sund nordlige Del
Guldborg
Storstrømmen
Vordingborg Havn
Kallehave-Stege
Bøgestrømmen

Farvandet Syd f. Fyen.

Faaborg Havn og Fjord
Svendborg Havn
Svendborg Sund østre Del
Rudkjøbing Havn
Rudkjøbing Løb nordlige Del
Marstal Havn
Farvandet ved Marstal
Farvandet Nord for Skjoldnæs

Tab. 5.

	Isforholdene *State of ice*									Besejlingsforholdene *Navigation*								Antal Dage med Is *Number of days with ice*	Første Ismelding *First ice report*	Sidste Ismelding *Last ice report*	Isens største Tykkelse i cm *Greatest thickness of ice in cm*	Bemærkninger *Remarks*
	Løs Sjap- og Kvadderis	Sammenpakket Sj.- og Kvadderis	Spredt Drivis	Drivis	Sværr Drivis	Pakis	Skrueis	Tynd Fastis	Sværr Fastis	Med Is; Skibsf. uhindret	Skibsf. vanskelig for Sejlskibe	Skibsf. vanskelig f. Sejls. k. m. m. B.	Skibsf. lukket for Sejlskibe	Skibsf. kun mulig for kraft. Dampsk.	Skibsf. kun mulig ved Isbryderhj.	Skibsf. helt lukket	Rende holdes aaben m. Isbryder					
	b	e	c	k	f	i	h	d	g	n	o	p	q	r	s	t	u					
	Antal Dage									Antal Dage												
Jyllands Vestkyst.																						
Esbjerg	22	17	19	2	2	..	..	..	..	23	13	6	14	6	..	..	..	62	27/11	3/3	—	
Graadyb	16	7	10	16	4	4	..	..	..	19	10	7	12	9	..	.	..	57	20/11	3/3	—	
Farv. v. »Vyl« Fyrskib	..	..	10	..	.	..	.	..	.	10	.	..	..	..	..		..	10	31/1	12/2	—	
Ringkjøbing Fjord nordl. Del	6	4	11	5	1	3	7	10	35	1	12	12	..	6	1	50	..	82	26/11	22/3	47	
Limfjorden.																						
Thyborøn Kanal	6	5	2	1	2	2	..	..	.	..	1	8	3	5	1	..	..	18	23/1	27/2	—	
Lemvig Havn og Lem Vig	..	..	..	..	1	..	.	5	33	..	1	5	3	10	20	..	39	39	20/1	27/2	22	
Nissum Bredning	2	3	4	3	3	3	1	..	16	2	2	4	2	12	7	6	..	35	23/1	20/2	18	
Oddesund	3	2	8	4	..	6	3	3	12	7	1	3	..	9	21	..	..	41	28/1	6/3	55	
Thisted Bredning	..	9	4	..	..	..	..	.	33	..	4	..	..	9	..	33	..	46	24/1	10/3	—	
Sallingsund	4	3	7	..	.	..	..	.	30	7	4	3	..	6	24	..	..	44	21/1	7/3	32	
Skive Havn og Fjord	2	2	..	1	2	..	..	13	45	..	3	1	10	6	5	40	11	65	26/11	4/3	60	
Løgstør Bredning	2	3	..	..	10	..	.	2	23	2	2	1	2	4	..	29	..	40	24/1	3/3	—	
Limfjorden udfor Løgstør	..	.	3	5	..	20	..	..	.	.	3		..	10	.	15	..	28	23/1	7/3	—	
Aggersund	2	8	5	..	8	9	.	..	23	8	1	4	..	3	3	36	18	55	10/1	11/3	40	
Limfjorden udfor Aalborg	2	..	..	..	..	4	..	..	31	..	2	..	4	21	10	..	37	37	24/1	1/3	40	
Limfjorden Aalborg-Hals	2	..	6	3	..	..	..	4	27	..	4	7	4	17	10	..	37	42	24/1	6/3	40	
Kattegat.																						
Nord for Skagen	..	..	6	..	4	..	..	..	..	2	2	..	2	2	2	..	..	10	3/2	14/2	—	
Syd for Skagen	1	1	2	..	2	4	.	.	5	..	..	1	.	9	5	..	..	15	1/2	18/2	—	
Skagen Havn	2	..	..	.	.	4	..	5	9	5	.	4	4	2	1	4	3	20	29/1	19/2	50	
Ved Hirtsholmene	..	1	7	3	..	4	5	..	..	3	2	4	..	7	2	2	..	20	1/2	23/2	28	
Frederikshavn	2	1	2	4	..	..	..	1	10	1	1	7	..	11	..	..	4	20	1/2	20/2	26	
Læsø-Rende	..	..	5	4	7	3	..	..	7	..	8	4	1	5	..	8	..	26	29/1	23/2	60	
Frhavn-Gøteborg vestl. Del	1	..	8	1	4	..	..	.	12	1	6	..	4	11	4	..	..	26	27/1	22/2	—	
Frhavn-Gøteborg østl. Del	3	..	10	3	..	9	.	2	24	2	12	4	9	3	11	10	..	51	27/1	18/3	—	
Kattegat Øst for Læsø	1	1	1	..	5	..	1	..	17	1	1	..	1	4	5	14	..	26	29/1	24/2	—	
Kattegat Øst for Anholt	..	1	26	4	5	2	7	..	5	22	3	1	..	13	11	..	..	50	29/1	19/3	29	4—5 m Skrueis.
Anholt Havn	5	..	..	.	..	..	..	13	19	4	6	6	2	3	7	9	..	37	24/1	4/3	22	
Udenfor Hals Barre	1	..	2	..	13	..	1	1	3	..	3	..	1	2	14	1	..	21	3/2	23/2	60	
Mariager Fjord	4	..	.	..	4	..	..	16	46	6	5	3	10	2	17	27	..	70	9/11	5/3	—	
Indløb til Mariager Fjord	..	4	3	..	..	..	..	.	37	..	3	20	..	..	6	15	16	44	21/1	5/3	—	
Katteg. v. Rand. og Mariag. Fj.	..	4	2	..		3	16	.	..	..	.	1	..	..	7	17	.	25	1/2	25/2	47	
Randers Fjord	17	8	1	..	1	..	..	8	37	12	8	39	..	2	11	..	30	72	9/11	2/3	30	
Indløb til Randers Fjord	..	1	18	..	..	..	..	9	36	3	6	28	..	..	27	..	19	64	3/17	5/3	34	
Grenaa Havn	1	5	..	..	..	..	.	3	21	1	2	3	..	24	..	..	..	30	28	26/2	24	
Kattegat v. Grenaa	.	3	15	6	..	4	..	..	..	2	6	10	..	7	3	..	..	28	29/1	27/2	—	
Kattegat v. Hjelm	2	..	13	8	9	..	..	..	..	8	13	..	2	9	..	.	..	32	28/1	28/2	—	
Æbeltoft Vig	..	4	2	..	..	2	.	1	26	..	2	1	4	6	10	12	..	35	31/1	6/3	35	
Aarhus Bugt	..	..	..	.	..	29	..	..	..	.	..	..	..	12	13	4	2	29	30/1	27/2	39	
Aarhus Havn	1	6	2	..	1	15	11	..	..	3	5	2	..	10	11	5	..	36	23/1	27/2	18	
Horsens Havn og Fjord	4	6	2	1	.	..	..	11	28	..	6	13	3	8	1	21	8	52	27/1	2/3	25	
Farv. Vest f. Samsø	4	..	..	6	10	.	..	..	15	..	4	6	..	..	10	15	..	35	27/11	2/3	32	
Farv. Syd f. Samsø	..	..	9	8	5	5	.	..	6	2	4	7	3	9	8	..	..	33	28/1	2/3	45	
Odense Havn og Kanal	2	13	..	..	3	.	..	2	32	..	4	17	..	2	29	..	34	52	4/1	28/2	32	
Odense Fjord	..	5	..	1	..	9	..	4	28	.	1	27	..	19	.	..	22	47	7/12	28/2	25	
Odense Gab	..	2	10	3	..	..	.	..	21	1	4	14	..	..	2	15	..	36	7/1	2/3	25	
Mell. Revsnæs og Samsø	3	1	4	4	19	..	5	..	2	3	6	2	3	6	13	5	..	38	26/1	2/3	70	
Farv. udfor Sejrø	2	1	3	8	11	..	.	..	4	1	3	1	6	7	5	6	..	29	24/1	25/2	28	
Farv. ved Schultz' Grund	..	..	7	5	11	..	..	..	8	..	4	3	7	8	9	..	..	31	28/1	27/2	—	
Kattegat v. Hesselø	5	3	4	3	2	9	..	1	..	4	8	2	..	4	9	..	..	27	27/1	23/2	22	
Sundet.																						
Farv. udfor Nakkehoved	2		7	3	7	2	..	..	5	4	4	.	8	10	..	..	..	26	29/1	28/2	—	
Farv. ved Helsingør	..	2	10	..	5	..	..	..	15	4	6	2	..	7	13	..	.	32	28/1	28/2	32	
Helsingør Havn	..	18	..	..	1	1	..	4	..	..	4	2	5	13	..	..	..	24	30/1	24/2	—	
Sundet v. Kjøbenhavn	4	1	2	..	2	1	..	1	16	5	..	5	..	1	16	..	..	27	27/1	2/3	—	
Kjøbenhavns Havn	10	12	3	..	..	8	1	..	7	7	5	8	4	5	12	..	..	41	9/1	24/2	—	
Drogden	3	4	5	..	7	1	..	1	1	3	4	6	1	5	3	..	..	22	2/2	28/2	—	
Flinterenden	..	..	17	10	4	..	2	..	..	.	..	5	..	22	6	..	..	33	30/1	3/3	—	
Farv. Syd f. Drogden	..	..	2	6	9	..	..	1	4	1	1	1	..	6	13	..	..	22	8/2	3/3	—	
Kjøge Bugt ind. Del	..	9	..	..	..	5	..	..	23	..	.	..	..	9	28	..	..	37	23/1	28/2	30	
Farv. v. Stevns	1	2	8	3	7	..	..	..	2	1	4	..	4	13	1	..	..	23	1/2	25/2	—	
Store Bælt.																						
Kallbg. Havn & indenf. Gisseløre	13	..	..	..	..	..	..	6	26	4	..	13	9	19	..	..	..	45	23/1	8/3	34	
Kallundborg Fjord	6	..	..	..	..	..	..	2	33	..	..	13	9	19	..	..	2	41	27/1	8/3	24	
St. Bælt udfor Romsø	..	..	9	4	8	..	..	..	9	1	5	3	5	8	8	..	..	30	28/1	26/3	40	
Kjerteminde Bugt	1	1	..	.	..	2	..	..	32	1	1	..	1	11	22	..	..	36	24/1	28/2	—	

Tab. 5.

	Isforholdene *State of ice*									Besejlingsforholdene *Navigation*								Antal Dage med Is *Number of days with ice*	Første Ismelding *First ice report*	Sidste Ismelding *Last ice report*	Isens største Tykkelse i cm *Greatest thickness of ice in cm*	Bemærkninger *Remarks*
	Løs Sjap- og Kvadderis	Sammenpakket Sj.- og Kvadderis	Spredt Drivis	Drivis	Sværr Drivis	Pakis	Skrueis	Tynd Fastis	Sværr Fastis	Med Is; Skibsf. uhindret	Skisf. vanskelig for Sejlskibe	Skibsf. vanskelig; f. Sejls. k. m. m. B.	Skibsf. lukket for Sejlskibe	Skibsf. kun mulig for kraft. Dampsk.	Skibsf. kun mulig ved Isbrydertj.	Skibsf. helt lukket	Rende holdes aaben m. Isbryder					
	b	e	c	k	f	i	h	d	g	n	o	p	q	r	s	t	u					
	Antal Dage									Antal Dage												
Store Bælt.																						
Nyborg Havn	1	3	..	2	..	1	..	..	32	1	..	4	34	..	..	..	38	39	22/1	1/3	—	
Nyborg Fjord	3	..	2	..	1	..	..	..	28	..	3	2	1	7	21	..	..	34	26/1	28/2	25	
Vesterrenden	2	4	10	8	3	8	..	..	..	9	1	5	5	7	8	..	..	35	27/1	4/3	60	
Østerrenden	4	9	5	10	1	7	3	..	..	5	7	6	4	4	13	..	..	39	25/1	4/3	60	
Korsør Havn	7	16	5	..	4	..	..	..	11	..	6	15	11	..	..	11	..	43	25/1	10/3	20	
St. Bælt v. Omø	1	3	10	2	19	4	..	..	..	2	8	1	..	21	7	..	..	39	24/1	3/3	37	
St. Bælt v. Albuen	1	..	9	8	9	11	..	..	..	2	1	5	2	28	..	..	..	38	26/1	4/3	—	
Indløbet til Nakskov Fjord	12	9	5	..	..	18	..	..	..	..	7	18	1	7	11	..	3	44	18/1	4/3	—	
Nakskov Fjord	14	2	4	..	..	..	..	..	36	..	14	9	19	..	14	..	20	56	1/12	5/3	28	
St. Bælt v. Kjelsnor	..	2	4	1	12	3	7	..	2	..	..	4	5	11	11	..	..	31	29/1	3/3	25	
Lille Bælt.																						
Farv. udfor Æbelø	5	5	1	1	2	.	..	..	18	5	3	2	..	4	..	18	..	32	25/1	25/2	23	
Vejle Havn og Fjord	..	..	1	1	..	..	..	23	37	..	12	18	5	1	..	26	14	62	9/11	2/3	—	
Bogense Havn	.	..	..	..	..	..	..	17	21	12	..	2	..	2	..	22	..	38	26/11	22/3	32	
Fredericia Havn	7	3	..	..	..	..	..	4	13	2	3	2	7	6	2	5	..	27	3/2	1/3	21	
L. Bælt v. Middelfart	6	..	12	..	..	1	2	..	12	4	9	6	..	5	..	9	3	33	26/1	11/3	26	
Kolding Havn og Fjord	..	..	1	..	1	..	..	5	41	2	2	11	..	8	4	21	23	48	16/1	4/3	35	
L. Bælt v. Assens	..	..	3	13	3	3	..	8	7	..	3	..	23	11	..	..	..	37	1/2	1/3	—	
Hadersley Fjord	..	..	2	2	..	..	..	27	41	..	6	36	..	9	..	21	..	72	8/11	3/3	30	
Aarøsund	..	7	..	9	..	22	..	..	..	..	..	11	..	6	..	21	..	38	30/1	11/3	—	100 cm Pakis.
Aabenraa Havn og Fjord	..	11	..	..	1	22	..	..	..	..	..	..	11	1	22	..	..	34	25/1	27/2	25	
Alssund	2	6	..	..	..	..	..	6	22	4	3	..	5	7	2	15	1	36	27/11	27/2	30	
Farv. Syd f. Alssund	3	3	4	..	6	26	..	..	..	1	9	..	3	3	1	25	..	42	26/11	10/3	60	
Farv. udfor Skjoldnæs	7	..	6	1	5	7	..	2	10	6	4	2	4	2	20	..	..	38	25/1	4/3	16	
Østersøen.																						
Rødby Havn	11	11	..	..	..	..	..	4	19	3	8	15	..	3	16	..	..	45	23/1	9/3	58	
Femerbælt udfor Rødby	..	..	10	7	17	..	..	4	5	5	6	5	6	12	9	..	..	43	23/1	9/3	30	4 à 5 m Skrueis.
Nysted Bredning	..	.	3	..	..	..	6	10	34	4	2	7	..	40	..	..	..	53	19/1	12/3	52	
Farv. udfor Gjedser	4	..	3	..	8	.	3	..	23	3	2	2	..	9	25	..	..	41	25/1	6/3	65	
Farv. udfor Møen	1	1	11	4	1	..	..	5	2	2	..	10	1	10	2	..	..	25	4/2	28/2	—	
Fakse Bugt ind. Del	..	..	..	..	2	3	..	..	30	..	2	..	.	3	..	30	..	35	25/1	28/2	50	
Præstø Havn og Fjord	9	3	1	..	..	..	..	6	45	2	11	12	3	2	1	33	4	64	25/11	3/3	42	
Bornholm.																						
Rønne Havn	4	3	..	29	..	..	..	5	8	4	14	7	16	8	..	..	12	49	23/1	12/3	22	
Østersøen v. Rønne	..	..	13	2	3	3	..	..	..	..	2	2	10	7	..	..	..	21	10/1	5/3	—	
Østersøen v. Hammeren	..	..	8	1	15	..	..	..	..	..	5	2	2	15	..	..	..	24	10/2	5/3	—	
Østersøen v. Christiansø	..	..	7	10	1	..	..	..	..	8	6	..	4	..	..	..	..	18	12/2	6/3	—	125 cm Drivis.
Nexø Havn	8	9	..	..	..	..	..	10	..	27	..	..	..	..	..	..	..	27	24/1	21/2	—	
Østersøen v. Dueodde	4	..	5	5	..	3	..	..	..	4	5	1	5	2	..	..	..	17	8/2	7/3	—	
Isefjorden.																						
Indløbet til Rørvig	11	2	..	4	2	..	..	..	27	8	3	..	6	2	2	25	..	46	17/1	3/3	35	
Nykjøbing Havn og Fjord	..	..	..	..	..	3	..	13	39	..	..	13	3	2	..	37	..	55	3/12	2/3	—	
Holbæk Havn og Fjord	..	..	3	5	..	..	..	18	34	..	3	18	..	4	10	25	..	60	26/11	4/3	30	
Roskilde Havn	..	..	..	..	..	..	..	34	36	..	1	11	17	5	..	36	..	70	26/11	4/3	32	
Roskilde Fjord	1	4	..	4	..	..	..	16	40	..	8	..	13	9	..	35	..	65	26/11	9/3	36	
Smaalandsfarvandet.																						
Skjelskør Havn og Fjord	..	..	15	5	..	4	..	..	33	..	..	17	..	19	..	21	..	57	20/1	17/3	30	
Omø Sund	1	2	4	2	2	27	..	..	..	1	6	1	1	4	2	23	..	38	25/1	5/3	27	
Karrebæksminde Havn	4	2	3	..	..	..	..	4	.	..	7	6	..	..	..	..	..	13	29/1	12/2	20	
Farv. Nord f. Vejrø	..	1	1	10	2	3	16	1	..	..	1	5	1	10	17	..	..	34	26/1	28/2	40	
Staaldybet	..	3	..	..	..	..	..	..	33	..	..	2	..	3	31	..	..	36	24/1	28/2	50	
Bandholm Havn	..	..	..	..	..	..	..	21	31	..	..	21	3	4	10	14	1	52	8/1	28/2	30	
Farv. udfor Bandholm	7	..	..	..	..	..	..	..	30	..	7	..	..	6	10	14	..	37	22/1	28/2	24	
Guldborg Sund udf. Nykjøbing	7	3	..	..	..	..	..	9	30	..	9	7	..	3	30	..	1	49	1/12	3/3	30	
Guldborg Sund nordl. Del	7	3	..	..	..	..	..	7	30	..	7	7	..	3	30	..	1	47	5/12	3/3	30	
Guldborg	..	13	2	..	..	..	..	2	29	..	..	9	..	8	29	..	..	46	16/1	3/3	30	
Storstrømmen	6	..	..	10	..	..	..	..	21	..	6	..	..	12	..	19	..	37	16/1	2/3	30	
Vordingborg Havn	..	..	..	2	..	..	..	26	32	..	5	23	7	..	..	25	..	60	30/1	7/3	—	
Kallehave-Stege	8	..	5	..	..	..	1	15	42	11	10	10	2	3	7	28	18	71	9/1	9/3	30	
Bøgestrømmen	..	..	..	..	4	..	..	1	36	.	..	..	5	..	..	36	..	41	27/11	6/3	36	
Farvandet S. for Fyen.																			24/1	5/3	32	
Faaborg Havn og Fjord	4	1	2	2	..	..	..	..	37	4	2	10	2	2	..	26	11	46	24/1	10/3	49	
Svendborg Havn	..	3	..	..	..	7	..	..	23	..	..	3	..	13	17	..	6	33	25/1	26/2	30	
Svendborg Sund østre Del	..	..	11	7	..	10	..	..	9	1	11	6	..	..	19	..	..	37	25/1	10/3	30	
Rudkjøbing Havn	..	..	..	1	..	..	..	2	33	..	2	..	..	34	..	..	11	36	23/1	21/2	33	
Rudkjøbing Løb nordre Del	2	.	3	1	1	10	..	..	24	1	1	3	..	8	3	25	..	41	23/1	6/3	24	
Marstal Havn	6	..	..	..	..	..	..	6	33	6	1	..	38	..	..	..	30	45	22/1	7/3	30	
Farvandet ved Marstal	2	..	3	..	..	..	..	6	33	1	..	5	38	..	..	..	30	44	20/1	10/3	39	
Farvandet Nord for Skjoldnæs	4	2	4	5	..	1	..	..	24	4	2	1	8	1	4	20	..	40	24/1	5/3	35	

Tab. 6.

Oversigt over Inddragningen af danske Fyrskibe under Isforhold.

Oplysningerne begynder 1879*)

Withdrawal of Danish light-ships during ice.

The reports commence 1879).*

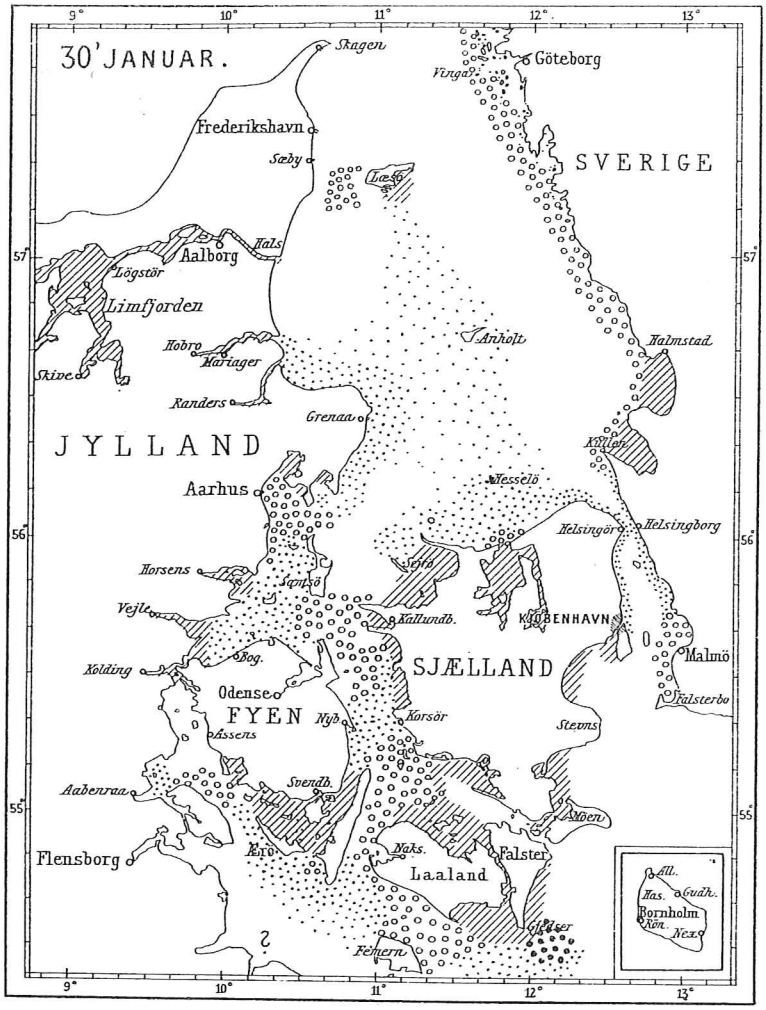
	Vinteren 1921—1922		Antal Dage fra Station paa Grund af Is *Number of days of the station on account of ice*	Har siden 1879 været inddraget *Withdrawn since 1879*			Bemærkninger *Remarks*
	Inddraget *withdrawn*	Udlagt *replaced*		i Antal Vintre *Number of winters*	ialt Dage *Total number of days*	Antal Dage pr. Vinter med Is *Number of days pr. winter with ice*	
Horns-Rev	—	—	—	1	3	3	
Vyl	—	—	—	1	12	12	
Graadyb	4/2	25/2	22	2	30	15	*) Udlagt i 1906. *Established in 1906.*
Skagens-Rev	21/1	1/3	30	12	424	35	
Læsø-Trindel	30/1	6/3	36	13	467	36	
Læsø-Rende	30/1	3/3	32	14	495	35	
Østre-Flak	29/1	8/3	39	4	128	32	*) Udlagt i Juli 1908. *Established in July 1908.*
Anholt-Knob	31/1	5/3	34	15	543	36	
Schultz-Grund	29/1	7/3	38	14	562	40	
Lappe-Grund	28/1	5/3	37	15	401	27	*) Oplysningerne begynder 1883. *The reports commence 1883.*
Drogden	29/1	6/3	37	15	598	40	
Gjedser-Rev	25/1	7/3	42	13	563	43	
Halskov-Rev	24/1	8/3	44	1	44	44	*) Udlagt i Juni 1921. *Established in June 1921.*

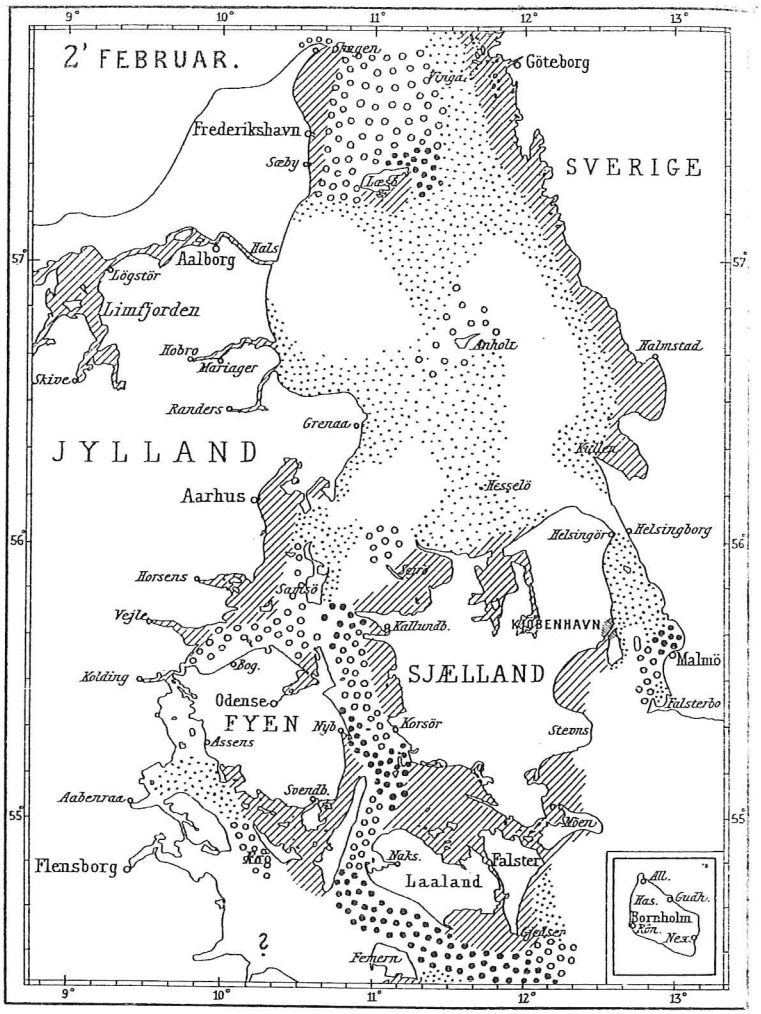
Tab. 7.

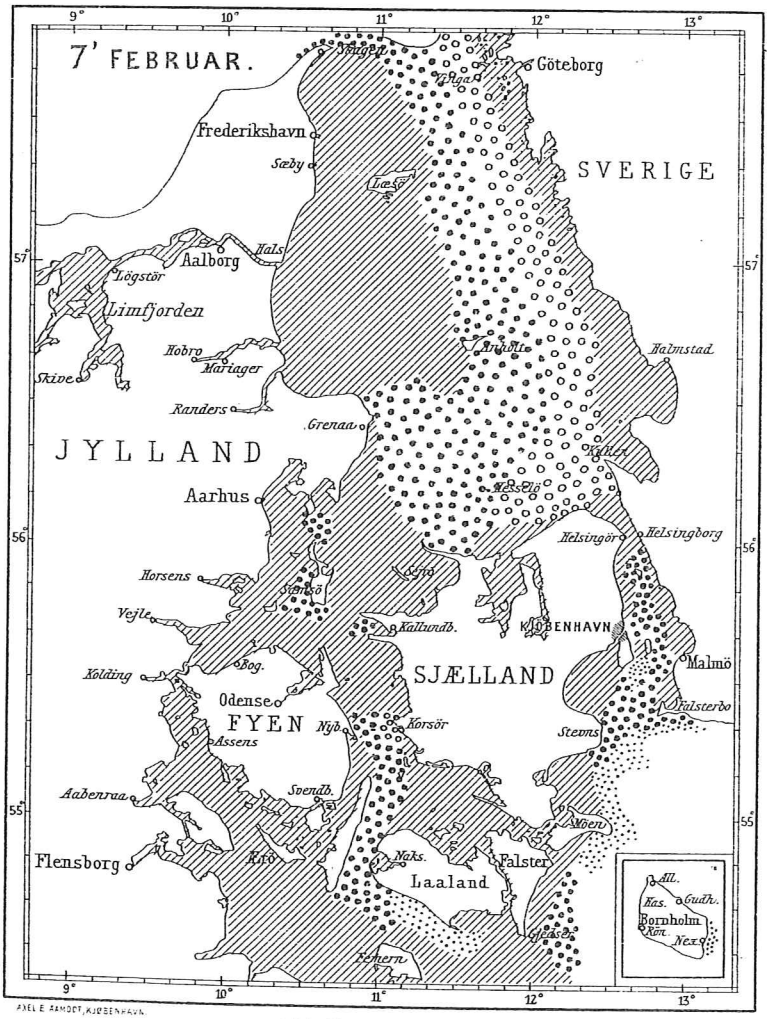
Sammenligning mellem de forskellige Vintre.

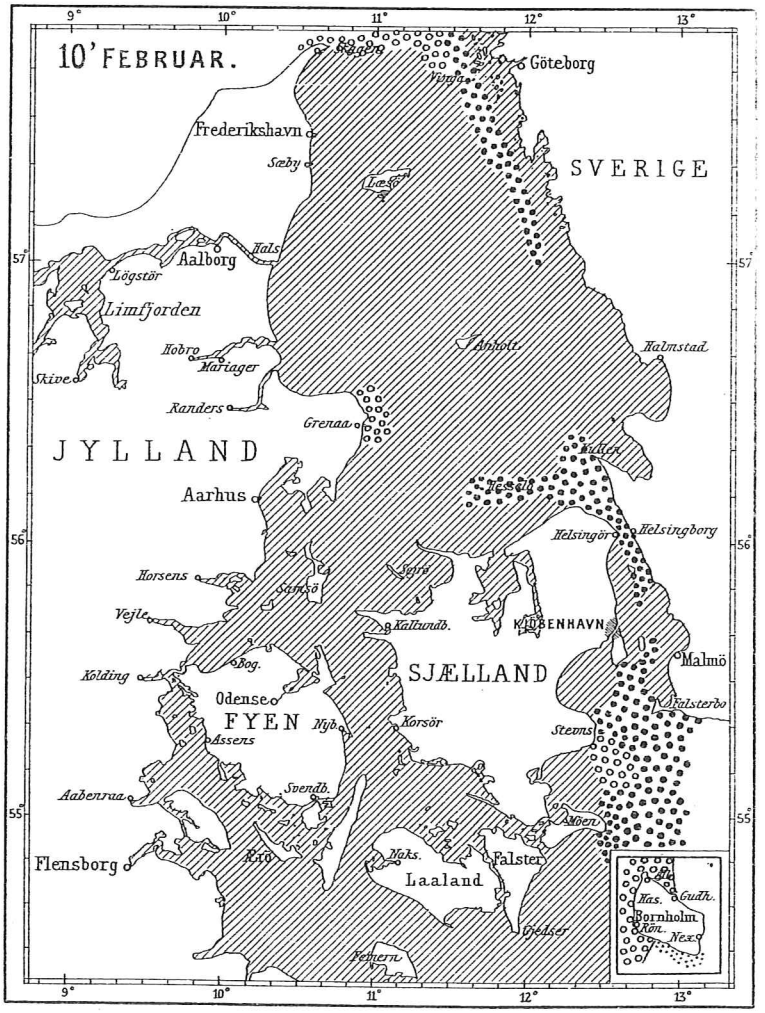
Comparison between the various winters.

Antal Dage med Is for: *Number of days with ice in:*	1906 —07	1907 —08	1908 —09	1909 —10	1910 —11	1911 —12	1912 —13	1913 —14	1914 —15	1915 —16	1916 —17	1917 —18	1918 —19	1919 —20	1920 —21	192 —2
Aabne Farvande *(The fairways)*	6.6	0.2	18.6	0.1	0.0	17.7	0.3	0.1	0.0	0.1	21.4	1.2	0.7	0.0	0.0	0.6
Havne ved aabent Farvand *(Harbours situated at the fairways)*	17.4	2.9	28.4	2.2	0.5	20 4	3.2	2.1	0.5	2.7	33.5	6.1	4.4	2.7	0.0	34.4
Tildels lukkede Farvande *(Partly closed waters)*	24.2	6.7	41.0	2.1	0.2	35.1	6.2	4.6	2.7	3.7	50.7	9.1	8.5	6.9	0.1	37.5
Havne ved indelukkede Farvande *(Harbours situated in closed waters)*	52.8	25.5	69.2	14.2	9.6	49.1	18.4	15.0	16.9	18.1	71.6	34.3	28.6	24.8	1.5	52.7
Indelukkede Farvande *(Closed waters)*	57.9	32.2	66.3	20.7	5.6	52.9	19.1	16.6	19.3	22.1	78.5	48.1	31.1	41.0	4.1	52.9
Alle Stationer *(All stations)*	**30.3**	10.1	**38.8**	5.7	2.4	**31.5**	7.4	6.0	6.1	7.3	**44.9**	15.3	11.6	11.9	0.9	**39.4**
Middeltal af Kuldemængde for Stat. i Tab. 2 *(Mean amount of cold f. the stations in Tab. 2.)*	121.1	65.8	151.6	37.9	23.9	128.6	31.9	49.2	66.3	68.2	169.5	79.4	65.2	64.3	11.3	165.4









AXEL E. ARNDT, KJØBENHAVN.

Nyis og Sjapis.
bay-ice and brash.

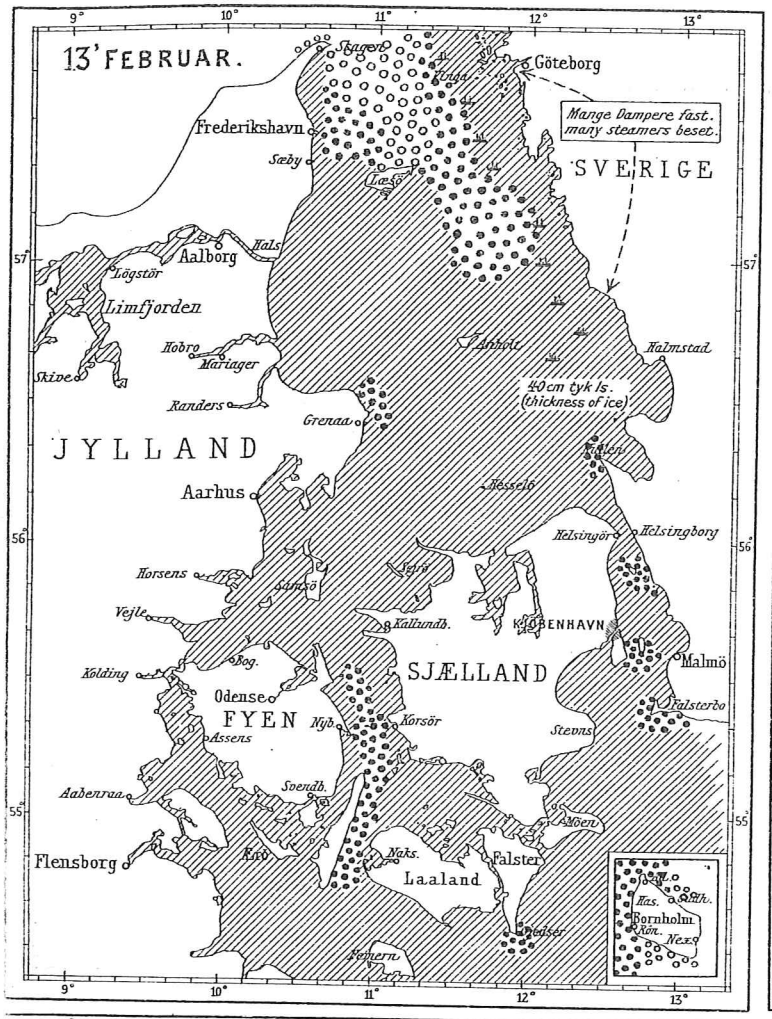
spredt Drivis.- open ice.

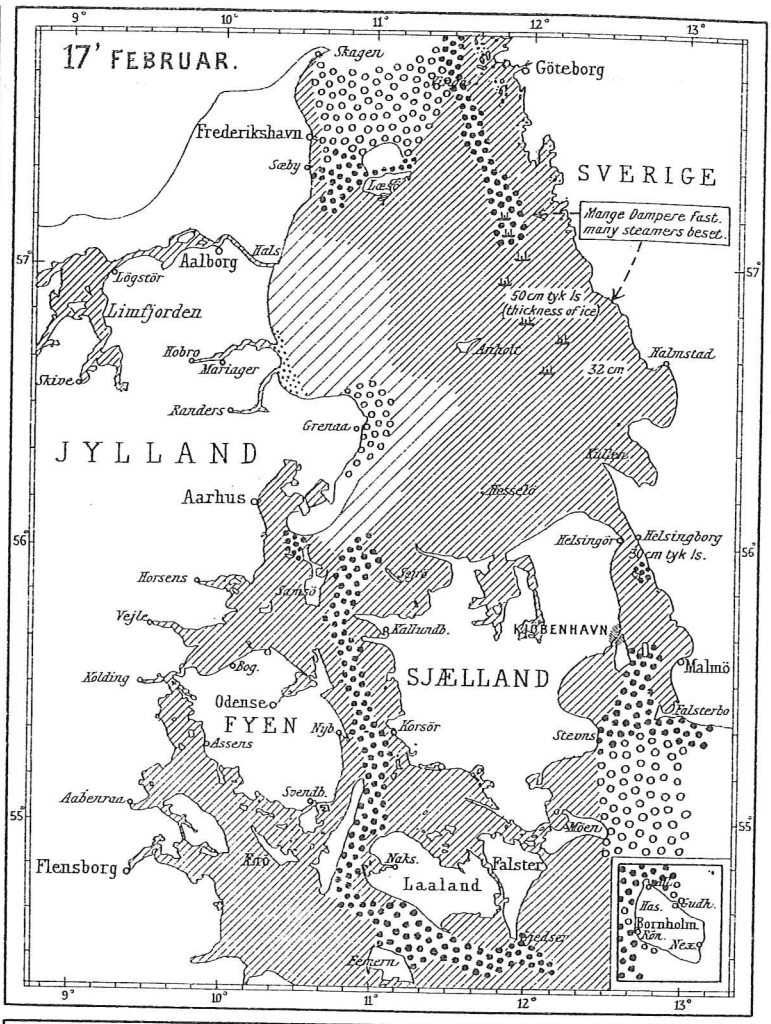
svær Drivis, Skrueis og Pakis.
heavy Drift-ice and pack.

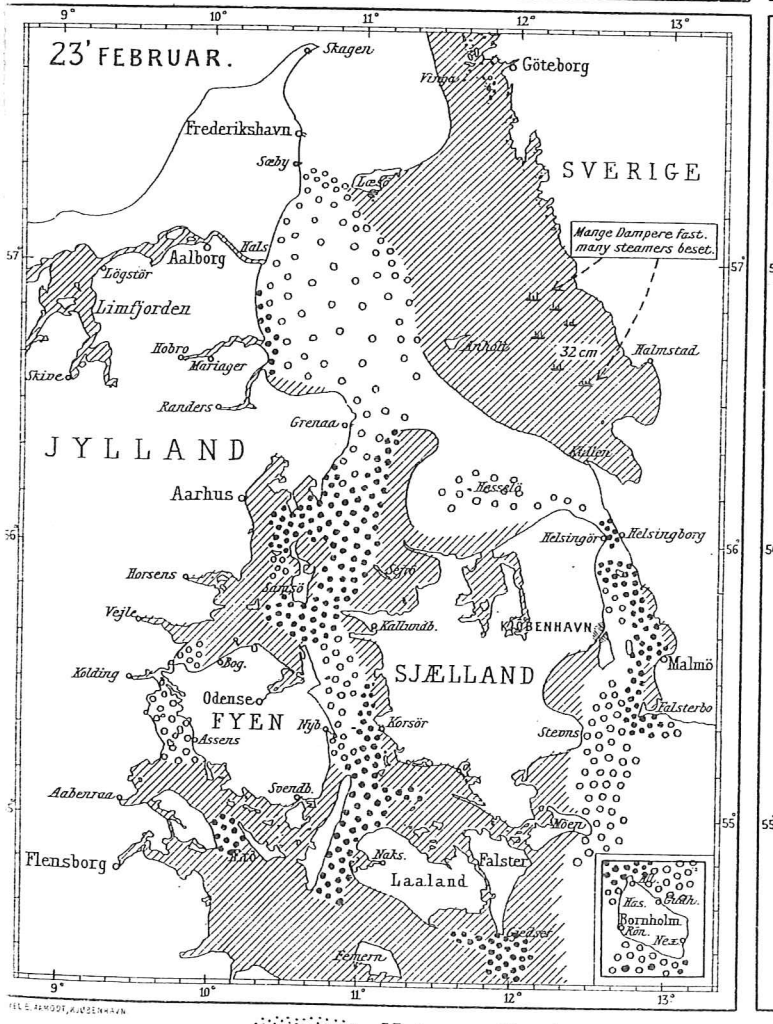
Fastis.- fast ice.

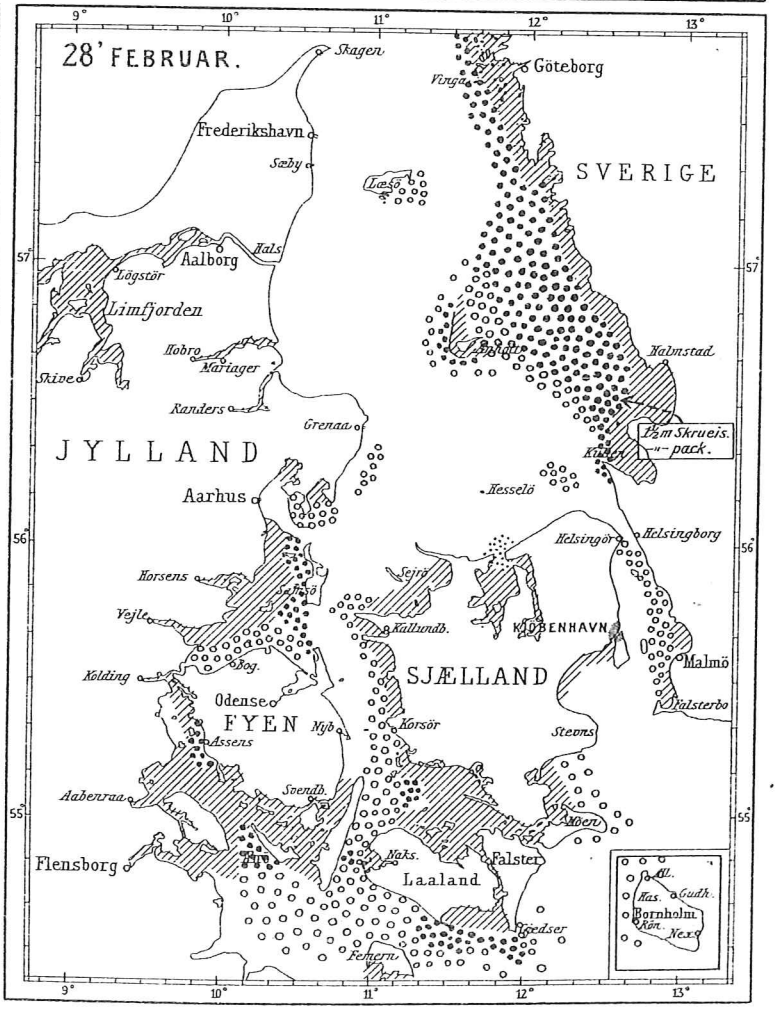
THE STATE OF THE ICE IN THE DANISH WATERS 1922.

PUBLISHED BY THE DANISH METEOROLOGICAL INSTITUTE.









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