

Administrative Report
Shellfish Committee
1962

By P. KORRINGA

MOLLUSCA

Belgium

(E. Leloup)

Oysters. Continuation of the study on the growth rate of the oysters cultivated in the sluice-dock (Bassin de Chasse) at the port of Ostend.

Collaboration towards the establishment of a method of sanitary control of molluscs was continued.

Mytilus edulis. Again, observations were made in October to establish the rate of infection of the mussels along the Belgian coast with the parasitic copepode Mytilicola intestinalis.

Finland

(S.G. Segerstråle)

Macoma baltica. The investigations on the periodical failures of recruitment at greater depth of Macoma baltica were continued.

The studies on reproduction of Macoma baltica, Mytilus edulis, and Cardium edule in the Finnish coastal waters have been continued.

France

(L. Marteil)

Huîtres. Les basses températures relevées pendant les premiers mois de l'année ont été la cause du retard constaté dans l'évolution sexuelle d'Ostrea edulis et Crassostrea angulata. Les fixations d'huîtres plates ont été peu abondantes en Morbihan, celles des huîtres portugaises meilleures dans le bassin d'Arcachon que dans la région de Marennes.

Les études en cours sur la composition des sols des parcs d'élevage, sur la fertilité des eaux et la croissance des huîtres ont été poursuivies en eaux libres, en claires et en marais.

La présence du flagellé Hexamita a été recherchée et constatée dans les huîtres plates et portugaises; la biologie du parasite a été étudiée.

Mytilus edulis. Les observations ont porté sur la date et l'intensité des fixations ainsi que sur la croissance en fonction du mode et du lieu d'élevage.

Mytilicola intestinalis parasite un grand nombre de moules cultivées sur les côtes nord et sud de la Bretagne ainsi que dans la baie de l'Aiguillon. Il est encore rare ou absent dans les autres secteurs.

Venus mercenaria. Les essais d'élevage en claires de Venus mercenaria d'origine américaine se poursuivent favorablement.

Germany

(P.F. Meyer-Waarden)

Mytilus edulis. Routine investigations on growth and quality of wild and cultivated mussels have been continued by the Institut für Küsten- und Binnenfischerei.

Further observations on the rate of infection of these mussels with the parasite Mytilicola intestinalis have been made.

Ireland

(F.A. Gibson)

Ostrea edulis. Oyster beds were kept under review.

Mytilus edulis. The effect of transplanting intertidal mussels to sub-littoral beds was studied.

Netherlands

(P. Korringa)

Ostrea edulis. The prediction of the intensity of the spatfall of the oyster was continued in 1962. Unusually low water temperatures in spring and early summer led for the first time since the observations started in 1935 to a considerable delay in spawning. It was late in July before oyster larvae made their appearance in the plankton of the Oosterschelde in numbers worth mentioning. Only during the last few days of July and in the first days of August water temperature rose above the critical level of $17\frac{1}{2}^{\circ}$ C, which enables the pelagic oyster larvae to grow. Only then a spatfall of modest dimensions could be anticipated. Spatfall control revealed in due course that no spat at all has settled in the months of June and July, and that a light to moderate settling took place early in August, to die down again at the onset of a new spell of adverse weather.

Experimental laboratory rearing of shellfish larvae was continued in the field laboratory at Wemeldinge. The antibiotic syntho-mycetine appeared to be an excellent tool to repress unwanted bacterial growth.

Further, adequate control of the pH appeared to exert its influence on the results of the rearing experiments. Again, the rearing of the larvae of Ostrea edulis appeared to be considerably more difficult than the rearing of larvae of Crassostrea angulata, Venus mercenaria, and Mytilus edulis.

Crassostrea angulata. Portuguese oysters grown on deeper beds in the Oosterschelde in 1961, kept their gonads filled in winter which led to an oily flavour. Transplantation to a shallow bed in 1962 led to development of glycogen-filled connective tissues and hence to an excellent flavour.

Mytilus edulis. No cases of mussel poisoning brought about by excessive plankton blooms have been recorded in the year 1962.

In the Waddensea the mussel parasite Mytilicola intestinalis did not extend its range in westerly direction.

Portugal

(H. Vilcila)

Crassostrea angulata. Routine observations were made on reproduction in Crassostrea angulata and in clams of the genus Tapes.

Sanitary conditions of marketable shellfish were kept under observation.

Mytilus edulis. Observations were made on the rate of infection of Mytilus edulis with the parasitic copepode Mytilicola intestinalis.

Spain

(J. Cuesta)

Crassostrea angulata. Dans la laboratoire de Santander on a continué les travaux sur la biologie de Crassostrea angulata.

Pecten maximus. Des observations sur la maturité sexuelle et sur la croissance de Pecten maximus ont été effectués à la côte galicienne.

Mytilus edulis. Des observations périodiques et systématiques au sujet de l'infection des moules avec le parasite Mytilicola intestinalis ont été poursuivies dans le littoral cantabrique et dans les "rias" de la côte galicienne par l'Institut Océanographique Espagnole et par l'Institut de Recherches concernant la Pêche.

Les deux instituts ont en outre continué leurs études biologiques sur les moules, Mytilus edulis, à Santander et à Vigo.

United Kingdom

L. England and Wales

(H.A. Cole)

Ostrea edulis. Experiments to improve the survival of larvae under artificial culture have been continued and survival of 40-60% to the eyed stage has frequently been achieved. Tiles made of P.V.C. and of wood veneer coated with shell grit are being tested for growing on the artificially settled larvae.

Experiments in Cornwall to test the value of laying mussel shells and old oyster shells to increase spatfall have given positive results compared with untouched and harrowed plots.

When young oysters from Holland, Brittany, Cornwall and Conway were laid in all the main English oyster growing areas the Conway oysters gave consistently the best yields while the Dutch oysters wherever they were relaid gave a net loss.

When subjected to a range of concentrations of chlorine in seawater oyster larvae were found to be able to survive 10 % for 10 minutes at 30° C without any apparent harm. Even higher concentrations were tolerated at lower temperatures.

Crassostrea angulata. A start has been made with the study of the growth of Portuguese oysters relaid at different levels.

Ostrea chilensis. The suitability of the Chilean oyster Ostrea chilensis for introduction into British waters is being studied. The adult is very similar to Ostrea edulis but the pelagic phase is much shorter. Very good spat settlement has been obtained in tanks.

Mytilus edulis. The spatfall and survival of young mussels are being studied in the Conway estuary. The rate of feeding of Carcinus maenas on young mussels is being examined.

Trial lays of mussels in the Wash have been continued to determine the most suitable areas for their large scale cultivation. Attempts are being made to use mussel brood from deep water for stocking lays. The feeding rates of Asterias on mussels and of the starfish Solaster on Asterias are being investigated.

Cardium edule. The investigation into the population dynamics of cockles in Burry Inlet (South Wales) has continued and the heavy mortalities due to oyster-catchers have been confirmed.

II. Scotland

(R.H. Millar, H.J. Thomas)

Ostrea edulis. Observations have continued on the oyster beds in Loch Ryan. Larvae were present from 2. July until 28. August, and larval growth was best from 27. July until 10. August, during which time eyed larvae were present, and a light spatfall resulted. A survey of the bottom soil and bottom fauna has been completed, and experiments in progress are showing a relationship between the nature of the bottom soil and the growth of oysters relaid in different places.

Ostrea lutaria. The New Zealand mud oyster Ostrea lutaria Hutton has been imported and laboratory breeding experiments have started. Larvae are very large when released from the female, and have eyespots and foot; settlement can occur within the first day after release.

Pecten maximus. The Aberdeen Marine Laboratory has been associated with an exploratory investigation of the scallop beds in the Scotland area.

Cardium edule. Further samplings have been made of the cockle beds of Barra.

Mytilus edulis. A watch has been maintained on the spread of Mytilicola around Scotland.

Cephalopoda. A research programme on the species of squids now being exploited around Scotland has been initiated.

U.S.S.R.

(A.F. Karpevich)

Macoma baltica. The studies on the composition of the zoobenthos of the Gulf of Riga and on the environmental factors presumably associated with the distribution of some demersal species have been continued. Special attention has been paid to the influence of the manganese ion on the survival of Macoma baltica, and to determination of the age composition in molluscan stocks.

CRUSTACEA

Belgium

(E. Leloup)

Crangon crangon. The biological studies on the brown shrimp Crangon crangon have been continued. It aims at ascertaining the annual development of the shrimp stock on the Belgian coast.

Denmark

(Aa.J.C. Jensen, E. Smidt)

Nephrops norvegicus. Quantitative fishing has been carried out in Skagerak and Kattegat with the R.V. "Biologen" in June and October. Some 680 Nephrops have been tagged.

Pandalus borealis. Stock analyses of Pandalus were made in the Skagerak in the months of June and October.

In Greenland watersexperiments were made with prawn trawl in the Godthåb and Holsteinsborg districts. Material for further analysis has been collected on these occasions.

Germany

(P.F. Meyer-Waarden)

Crangon crangon. In continuation of previous investigations of the Institut für Küsten- und Binnenfischerei 401 samples (= 2,063 kg) of unsorted catch of the shrimp fishery were analysed as to their species and length composition, in order to assess both the share of undersized protected fish in the catch, and the fluctuations in the abundance of fish species found on the shrimp fishing grounds.

Tagging experiments were continued by the Institut für Küsten- und Binnenfischerei. Besides tagging shrimps by means of Gentiana violett B of Merck, Darmstadt, coloured plastic tags were used for the first time with which a total of 26,320 shrimps were tagged during November and December 1962 at three different stations, viz. Norddeich, Neuharlingersiel and Cuxhaven. The plastic tag is attached by means of a thin silver wire which is placed around the body of the shrimp between the carapace and the first abdominal segment. It is hoped that the shrimps can be kept tagged by this method over longer periods, extending at least over the winter months. Furthermore experiments have been continued to improve the dyeing method for tagging shrimps.

The distribution of shrimp larvae in relation to hydrographic factors has been studied in the estuary of the river Elbe. Similar investigations have been initiated, covering the entire distribution range of the brown shrimp along the coast of Niedersachsen. Regular plankton samples were collected aboard the Fisheries Inspection- and Research Vessel "Neptun", which conducted 5 cruises for this purpose.

Analyses of the stomach contents of fish species occurring on the shrimp fishing grounds have been continued in order to determine their importance as shrimp predators. This time the following species of fish were examined: whiting, cod, dab and plaice.

Nephrops. The present state of the German Nephrops fishery was surveyed by the Institut für Küsten- und Binnenfischerei.

Iceland

(A. Sigurðsson)

Pandalus borealis. The analysis of the Pandalus stock at the north-west coast was continued, including numerous observations on carapace length and sex ratio. Catch-effort data from the commercial catches were also worked up. Trawling experiments were conducted in various localities off the north-west and north coast, including observations on the by-catch.

Nephrops norvegicus. Samples, including carapace length and sex ratio, were taken from the commercial catches from the south-west coast. Catch-effort data were also collected from the entire fishing area.

Ireland

(F.A. Gibson)

Palaeomon serratus. Stocks of Palaeomon serratus were examined off the Irish south coast.

Nephrops norvegicus. The research programme into the stocks of Nephrops off all coasts of Ireland was continued.

Homarus vulgaris. The incidence and effect of Gaffkaemia amongst ponded lobsters continued to be examined.

Palinurus vulgaris. An investigation into the composition of Palinurus vulgaris stocks from the south and west coast of Ireland was also initiated in 1962.

Netherlands
(P. Korringa)

Crangon crangon. Conclusive evidence could be adducted that the old assumption that undersized specimens of the brown shrimp are predominantly males is incorrect. The majority of the small sized shrimps appeared to be of the female sex. Small males can change their sex into female and can grow up to a big-sized consumption shrimp in due course. Exceptionally, male shrimps grow up without changing their sex.

Samples of brown shrimps have been collected at fortnightly intervals on a fair number of fixed stations in various sectors of the Dutch coastline.

Norway
(K.R. Gundersen)

Cancer pagurus. Tagging experiments on Cancer pagurus were continued during 1962. Only the Norwegian tagging method was used.

During 1962, 941 crabs were tagged in the Hjeltefjord and 376 in the Byfjord area.

Homarus vulgaris. Tagging experiments were carried out on lobsters kept in aquaria.

Portugal
(H. Vilela)

Nephrops norvegicus. Histological studies have been made on the gonads of Nephrops norvegicus.

Samples of trawl-caught Nephrops have been collected for further analyses in the laboratory.

Spain
(J. Cuesta)

Homarus vulgaris. Des essais d'élevage de larves du homard ont été effectués. On a obtenu des exemplaires de 7 cm longueur totale.

Sweden
(H. Höglund)

Nephrops norvegicus. On two occasions, one in winter the other in autumn, comparative fishing experiments were undertaken, using trawls with different cod-end meshes.

Pandalus borealis. No particular investigations were undertaken, but a couple of fishermen cooperated by keeping regular and continuous records of their trawling results as to shrimps and by-catches.

United Kingdom
I. England and Wales
(H.A. Cole)

Homarus vulgaris. The study of the changes in the integument of lobsters before moulting has been completed and the findings are being used to determine the frequency of moulting among the lobster population off the north-east coast of England.

The incidence of Gaffkaemia, the blood disease of lobsters, among lobsters round Britain is being determined. Also the way in which the disease is transmitted from one lobster to another during storage in tanks is being investigated.

Nephrops norvegicus. The study of the biology of Nephrops and their escape from nets with different sizes of mesh is being continued.

Palinurus vulgaris. Measurements of crawfish have been started in Cornwall to establish the present size composition of the catches in this fishery which is expected to expand steadily during the next few years.

Cancer pagurus. The study of the biology and population dynamics of the crab population off the Yorkshire coast is continuing. Further tagging experiments using claw tags and suture tags will be made to study mortality rates, growth rates and movements. Data are being obtained on the seasonal changes in yield of meat from male and female crabs.

Maia squinado. Monthly observations are being made on the yield of meat from spider crabs.

Pandalus montagui. The feeding of this shrimp and the factors governing its distribution and concentration into commercially useful quantities are being studied.

II. Scotland

(H.J. Thomas)

Homarus vulgaris. Further investigations have been made into the stock composition of lobsters off the south-east Scottish coast. In addition catch/effort data from the commercial fishery in respect of both lobsters and crabs has been initiated at eleven stations, covering all the main fishing areas. A comparison of the relative efficiencies of the Scottish creel and a type of collapsible trap in the capture of lobsters and crabs has been undertaken.

Cancer pagurus. Routine sampling and records of crab landings around Scotland have been maintained and tagging experiments using both the suture tag and the Norwegian toggle tag, in addition to claw tagging, have been undertaken in a study of growth and mortality rates and of migrations. Further comparative fishing experiments have been undertaken using the Gourdon crab creel and the standard Scottish creel, with a variety of baits.

Nephrops norvegicus. Research ships sampled the Norway lobster stocks, in the five main fishing areas around Scotland and investigations have been made into the fecundity of the Norway lobster. Aquarium observations have been continued on growth rates. The feeding of the Norway lobster has been assessed by foregut content analysis. A survey has been made of the whitefish by-catch in the Norway lobster fishery, together with a study of those species which feed on Norway lobsters. Further comparative fishing experiments have been undertaken using the Nephrops trawl with various cod-end mesh sizes.

Pandalus montagui and Crangon crangon. Monthly samplings of the shrimp stocks in the Firth of Forth has been instituted and further observations made into the shrimp fishery of the Solway Firth.

U.S.S.R.

(A.F. Karpevich)

Paralithodes camtchatika. Work on the introduction in the Barents Sea of the Kamtchatka crab Paralithodes camtchatika has been continued.

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