TOOTHFISH, *DISSOSTICHUS ELEGINOIDES*, AT SOUTH GEORGIA

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Abstract

The *Dissostichus eleginoides* fishery at South Georgia has expanded greatly in recent years. It has been claimed that the exploited fish are senescent and not contributing to the breeding population (CCAMLR-VIII, paragraph 106). Histological examination of the gonads of a small sample of fish taken from a commercial longliner in January 1990 indicates that the fish are sexually mature and, at the time of sampling, are approaching spawning condition.

Résumé

La pêcherie de *Dissostichus eleginoides* en Géorgie du Sud s'est considérablement développée ces dernières années. Certains ont déclaré que les poissons exploités sont sénescents et ne contribuent pas à la population reproductrice (CCAMLR-VIII, paragraphe 106). Un examen histologique des gonades d'un échantillon modeste de poissons prélevé d'un palangrier commercial en janvier 1990 indique que les poissons ont atteint la maturité sexuelle et, qu'au moment de l'échantillonnage, ils approchent des conditions de reproduction.

Резюме

За последние годы промысел *Dissostichus eleginoides* в районе Южной Георгии существенно увеличился. Была высказана точка зрения о том, что при этом промысле вылавливается стареющая рыба, не входящая в состав размножающейся части популяции (CCAMLR-VIII, пункт 106). Гистологический анализ гонад на материале небольшой пробы рыбы, взятой из улова, полученного коммерческим судном в ходе ярусного промысла в январе 1990 г., показывает, что рыба, входящая в состав улова, была половозрелой и в момент взятия пробы находилась на стадии, близкой к нерестовой.

Resumen

La pesquería de *Dissostichus eleginoides* en Georgia del Sur ha aumentado considerablemente en los últimos años. Se ha sostenido que los peces capturados son senescentes, y por lo tanto no forman parte de la población reproductora (CCAMLR-VIII, párrafo 106); pero, al examinar histológicamente las gónadas de una pequeña muestra de peces capturados por un palangrero comercial, en enero de 1990, se pudo constatar que los peces estaban en estado de madurez sexual y próximos a desovar.

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1. INTRODUCTION

During the Eighth Meeting of CCAMLR it was noted that the Scientific Committee had recommended that a TAC of 1 200 tonnes be set for *Dissostichus eleginoides* in Subarea 48.3. That estimate was based on very limited data, but since this represented the best scientific advice available, most Members were content to use it as the basis for setting a TAC. The USSR opposed this view and stated that the longline fishery takes senescent fish. Consequently they did not agree that setting any TAC for the longline fishery was justified (CCAMLR-VIII, paragraph 106).

We know of no fishery anywhere in the World which takes a significant proportion of the estimated production and which is removing senescent fish and have therefore sought to investigate this claim.

2. MATERIAL AND METHODS

A small sample of five fish was obtained from the USSR longlining vessel *Olyokminsk* when it visited the UK station at King Edward Point, South Georgia on 28 January 1990. The fish were fresh and had been caught recently in the vicinity of Shag Rocks. The fish were measured, weighed and sex and maturity stage determined according to the scale in SC-CAMLR-VIII, page 243. In order to unequivocally determine the maturity stage of gonads, samples were frozen for histological examination in the UK. Otoliths and scale samples were removed for age determination. Details of the fish are given in Table 1.

Gonad samples were thawed into formol saline and stained. Sections of gonads (3 microns) were prepared and examined under a microscope. Photomicrographs of the sections are shown in Figures 1 and 2.

3. DISCUSSION

All of the five fish in the sample were of a size similar to those that were caught in a bottom trawl survey earlier in the month (Parkes *et al.*, 1990).

Histological sections of the ovaries show ova approximately 2 mm in diameter. The ova are in the developing phase consistent with the subjective observation that they were at stage 2 when caught. Testes are clearly developing and consistent with the observation that they were at stage 2. The gonads from all fish in this sample are therefore consistent with the fish developing towards spawning. There is no evidence that they are senescent.

4. CONCLUSIONS

It is impossible to judge the maturity status of fish caught in the 1988/89 season from this sample; however, it is clear that this sample from the 1989/90 seasons is composed totally of fish developing towards spawning condition. We see no reason to believe that the situation was any different during the 1988/89 season.

We therefore suggest that the assertion that the fish were senescent is almost certainly in error and that, had the point been discussed during either the Working Group on Fish Stock Assessment or Scientific Committee meetings some clarification would have been provided.

REFERENCES

CCAMLR-VIII. 1989. *Report of the Eighth Meeting of the Commission (CCAMLR-VIII).* Hobart, Australia: CCAMLR. pp. 27-28.

PARKES, G.B., I. EVERSON, J. ANDERSON, Z. CIELNIASZEK, J. SZLAKOWSKI and R. TRACZYK. 1990. *Report of the UK/Polish Fish Stock Assessment Survey Around South Georgia and Shag Rocks in January 1990.* SC-CAMLR-IX, document WG-FSA-90/11.

SC-CAMLR. 1989. *Report of the Eighth Meeting of the Scientific Committee (SC-CAMLR-VIII).* Hobart, Australia: CCAMLR. pp. 243.

Table 1: *Dissostichus eleginoides* from South Georgia, 28 January 1990.

Specimen Reference	Length (cm)	Weight (g)	Sex	Maturity Stage	Gonad Photomicrograph
1	81	4690	F	2	Figure 1 top
2	78	4300	M	2	Figure 2 top
3	85	5850	F	2	Figure 1 centre
4	86	5830	M	2	Figure 2 lower
5	84	5340	F	2	Figure 1 lower

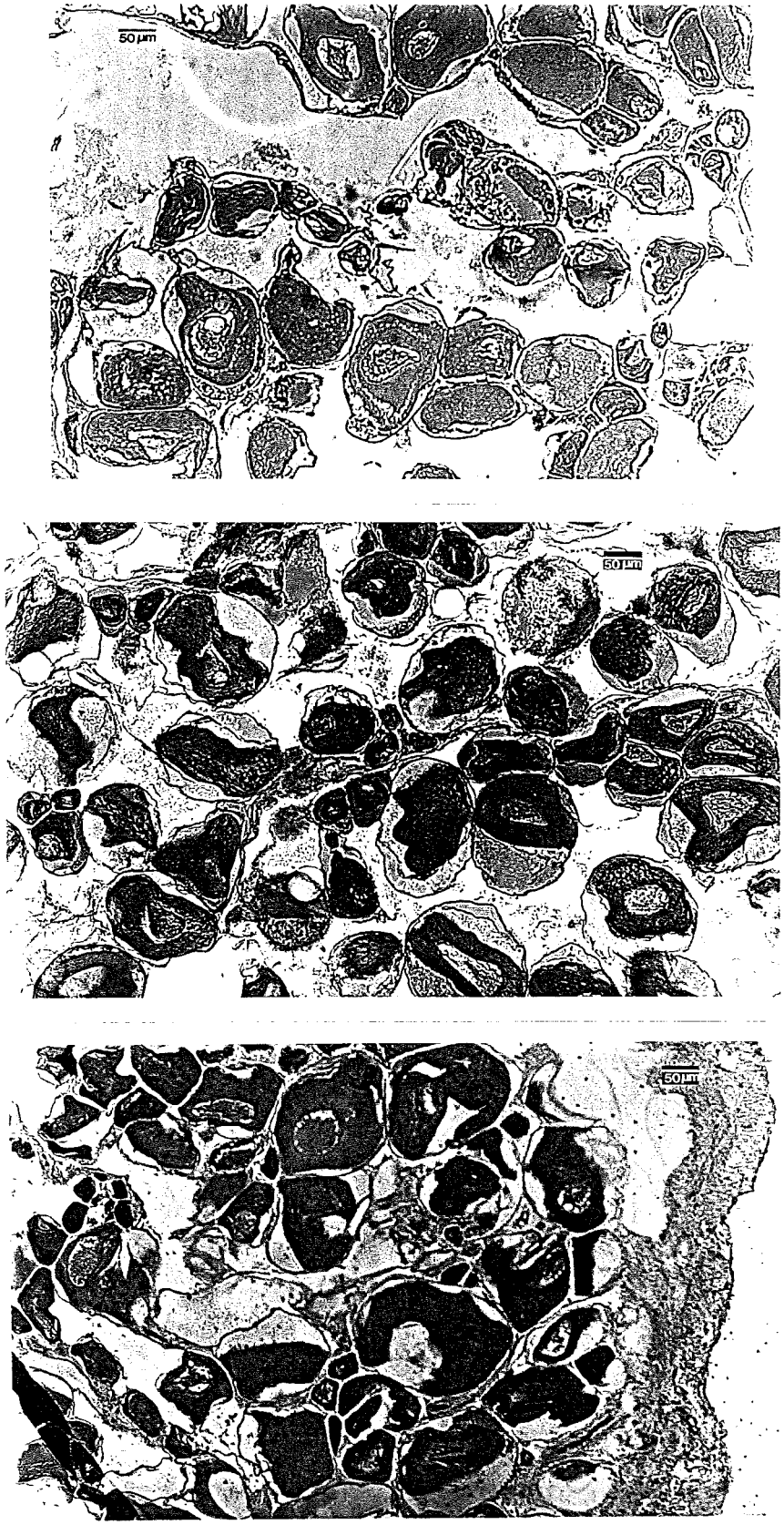

Figure 1: Histological sections of *Dissostichus eleginoides* ovaries. Top from specimen reference number 1, centre from specimen reference number 3 and lower from specimen reference number 5.

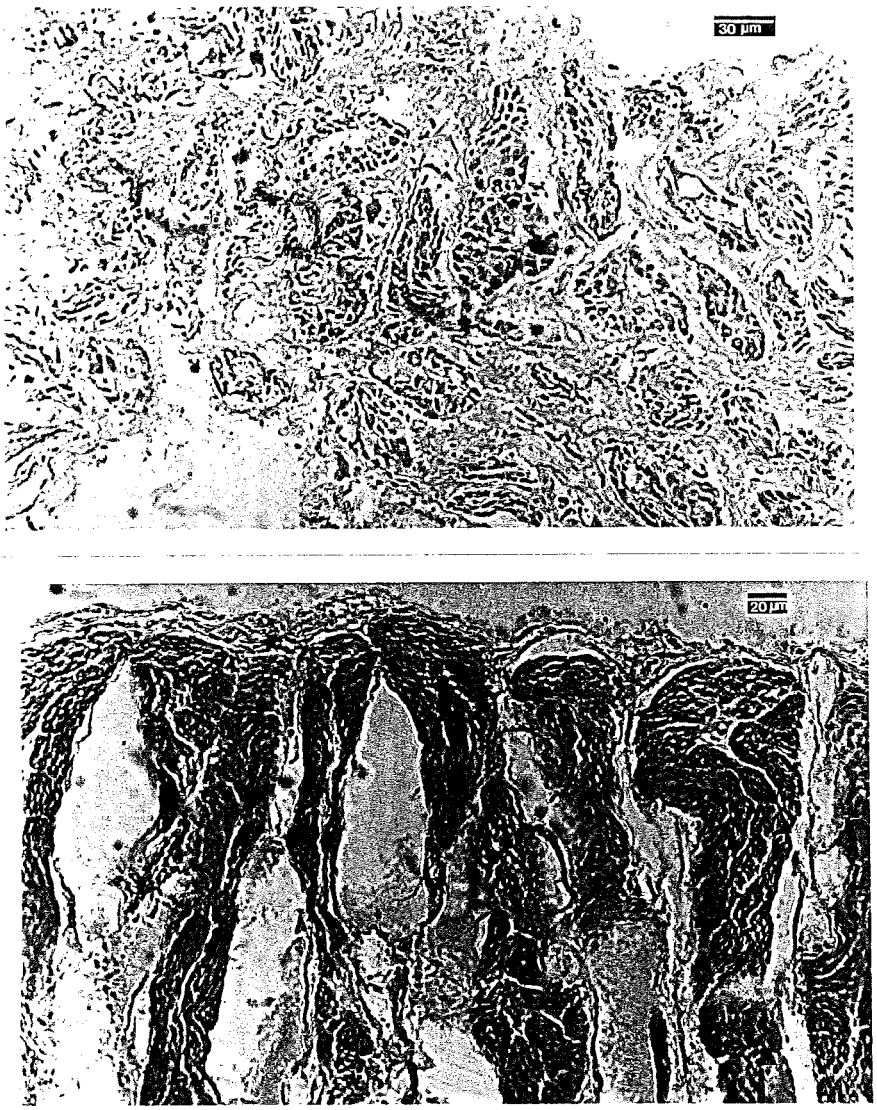

Figure 2: Histological sections of *Dissostichus eleginoides* testes. Top from specimen reference number 2, lower from specimen reference number 4.

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