TABLE II

Number of Dogfish Collected per Fishing Trip for each Week of the Summer Season

Week	1973	1974	1975	1976+	1977	1978	1979	1980	1981°	1982°°	Average 1973-82++
1*	8	13	13	13	23	16	8	26	16	1	14 ± 8
2	18	31	9	17	32	7	14	10	20	10	17 ± 9
3	42	41	86	24	21	25	28	48	28	12	37 ± 22
4	69	48	31	29	48	25	39	31	50	11	39 ± 17
5	84	52	62	39	52	41	31	43	21	7	44 ± 23
6	50	55	53	30	33	26	10	41	43	21	37 ± 16
7	98	87	72	27	61	53	46	39	10	21	54 ± 29
8	65	62	54	38	37	75	27	52	19	15	45 ± 21
9	61	50	61	24	36	32	43	85	27	17	46 ± 21
10	53	29	35	6	41	25	32	60	50	18	38 ± 14
11**	-	8	-	-	6	40	12	31	44	11	22 ± 16

*Week number 1 includes all the collecting trips during the month of June.

**Week number 11 includes all the collecting trips during the month of September.

+The number shown for the year 1976 depicts only those fish delivered to individual investigator live cars. The total number collected was not available.

++Does not include the 1976 numbers.

°Includes two deliveries by Gordon King on week 2 and 5 and three deliveries on week 7; one delivery by Bud Hodgkins on week 10.

°°Includes one delivery by Gordon King on weeks 1 and 4, and two deliveries on week 5; and three deliveries by Bud Hodgkins on week 3.

SUMMARY OF THE "GORDON KING"SPECIAL FISH COLLECTION AT MOUNT DESERT ISLAND BIOLOGICAL LABORATORY FROM 1979 THROUGH 1982

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Animal supply at the Mount Desert Island Biological Laboratory can be broadly classified into three major components: the Squalus operation, collection by investigators personally or contracted personally, and the Gordon King special fish collection. The Squalus operation focuses upon meeting the demand for dogfish; however, there is a small incidental capture of sea raven, lumpfish, skate and other species. The second major category of collection involves numerous invertebrates such as echinoderms, molluscs and crustaceans as well as many fish species notably Fundulus, eels, ocean pout, and cod. The contribution of this aspect of collection in terms of numbers of specimens and numbers of groups supported has yet to be quantitated but may be quite significant. Finally, the "Gordon King" operation refers to an individual whom the laboratory has contracted since 1970 to collect specimens not readily obtainable by either the Squalus or individual effort. This operation is based in Seal Harbor and involves capture of specimens with an otter trawl and subsequent trucking of animals in aerated tanks to the laboratory for an approximate duration of 30 min.

Table 1 presents the species and number of specimens utilized during the period 1979 - 1982. Animals that died following the stress of capture and transport are not included in the figures. The most significant feature of the data is the large number of animals involved. The "Gordon King" operation is now contributing between 1300 and 2000 specimens per season which is as great or in excess of the Squalus collection.

Table 1. Animals collected by Gordon King for use at MDIBL from 1979-82.

Year	Number of collecting trips	Date of first trip	Date of last trip	Skate	Flounder	Sea raven	Longhorn sculpin	Ocean pout	Goosefish	Dogfish	Fish total	Average fish/trip
1979	36	6/10	9/24	437	858	96	170	78	11	4	1654	46
1980	38	6/4	8/26	429	528	160	138	35	5	–	1297	46
1981	44	6/11	10/4	704	947	103	185	12	21	65	2037	46
1982	50	6/3	9/24	654	767	46	311	31	22	20	1851	37

Additional collections over the past four seasons included: wolfish (3), lumpfish (2), hake (2), shorthorn sculpin (7), crabs (14), and squid (15).

A number of other points are apparent from the fish collection records. Foremost, requests for skate, flounder, sea raven, and longhorn sculpin were usually filled within 2 - 3 days of placing the order. In effect, supply kept pace with the demand for these species. The demand for goosefish invariably fell short of the supply. A program dependent upon a large supply of goosefish would require an alternate supply mechanism. This statement also applies to the other species listed in the Footnote to Table 1. Finally, in both 1979 and 1981 there was a period of approximately 10 - 14 days in late July when there were large numbers of fish deaths following transport to the laboratory. The demand for fish and hence holding space was inordinately high during both periods in question.

Although the actual fish collection records are informative in many respects they do not disclose the fine aspects of animal supply. Information on the quality of individual animals with respect to size and condition was sought via a questionnaire during the 1982 season. The consensus of individuals responding was that animal condition was acceptable.

In summary the "Gordon King" operation provides a very high proportion of the specimens utilized at MDIBL and for many species supply is able to meet demand. There appears however to be a need for a mechanism of providing investigators with better quality animals and an increase in holding space. Finally, the collecting committee recommends that because of the current reliance on the "Gordon King" operation a formal and well tested back-up system be established to provide for these species if this service is interrupted.

BILE PIGMENT COMPOSITION AND HEPATIC UDP-GLUCURONYL TRANSFERASE ACTIVITY IN ADULT AND FETAL DOGFISH SHARK, SQUALUS ACANTHIAS

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In man and many other mammals, UDP-glucuronyl transferase activity develops in the perinatal period (Lucier, G.W. et al, J. Ster. Biochem., 8:667-673, 1977). Glucuronyl transferase activity towards one group of substrates, including p-nitrophenol (PNP-GT) develops in late fetal life in rats, while the enzyme activity towards several other substrates including bilirubin (B-GT) develops in the neonatal period. In man and Rhesus monkey bilirubin IX_{β} appears in early fetal bile and meconium; bilirubin IX_{α} becomes the almost exclusive pigment in late fetal life (Blumenthal, S.G. et al, Biochem. J. 186:693-700, 1980). Bilirubin IX_{α}-monoglucoside and monoxyloside are the earliest conjugated bile pigments to appear. These are replaced by bilirubin monoglucuronide which is the major bile pigment at birth. Bilirubin diglucuronide becomes the major bile pigment in later life (Fevery et al, J. Clin. Invest. 51:2482-2492, 1972).