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细鳞鱼属 *Brachymystax* 的研究和河北北部的细鳞鱼 *B. lenok*

RESEARCH OF BRACHYMYSTAX AND B.LENOK
(PALLAS) FROM NORTHERN AREA OF HEBEI

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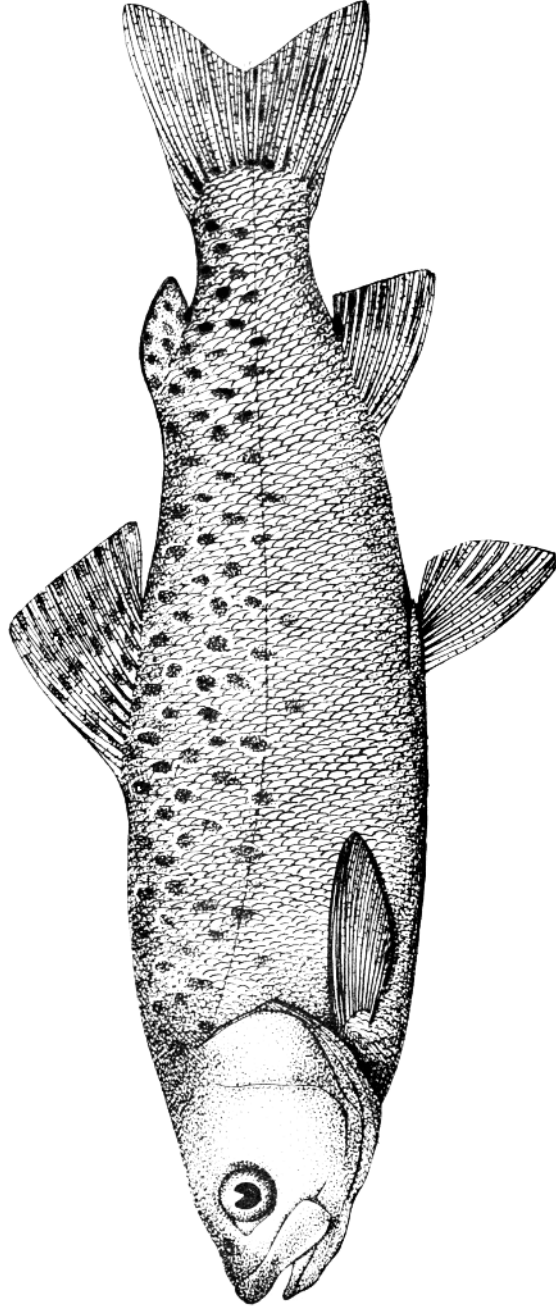


图5 细鳞鱼外部形态图 $\times 1/2$
Brachymystax lenok (Pallas)

细鳞鱼属 *Brachymystax* 的研究和 河北北部的细鳞鱼 *B. lenok**

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关键词: 细鳞鱼属·河北北部·细鳞鱼

内容提要

分布在黑龙江、新疆、图门江、秦岭、河北北部的细鳞鱼，它们的主要性状如：侧线鳞数、鳃耙数、幽门盲囊数、鳍条数及斑点的大小等，差异不明显，均为 *Brachymystax Lenok* (Pallas) 种。

Nichols 和 Pope 曾报道和纪录过河北北部及热河地区可能有细鳞鱼的分布。1975 年笔者从汤河上游采到了标本，并对塞罕坝的细鳞鱼进行了生态研究。

一 细鳞鱼属的研究

细鳞鱼属 *Brachymystax* 鱼类，分布在苏联、中国、朝鲜、蒙古部分地区的河流中，如西伯利亚地区的鄂尔齐斯河、鄂毕河、叶尼塞河、勒拿河至科雷马河；黑龙江水系；图门江；鸭绿江；辽河上游；河北的滦河及白河上游；秦岭地区渭河和汉水的支流等。

细鳞鱼属 *Brachymystax* 是 1866 年 Günther 根据 Pallas 1773 年在叶尼塞河 (Yenesei) 发现的 *Salmo lenok* 后归属 *Brachymystax*。本属一般认为只有 *B. lenok* 一种。Mori (1930 年) 认为产在图门江的种类，由于吻部较尖、幽门盲囊数少等特征差异，把图门江地区的种类定为 *Brachymystax tumensis* Mori. Berg (1949、1932 年) 及 Mori (1952 年) 本人均认为 *Brachymystax tumensis* Mori 是 *Brachymystax lenok* (Pallas) 的异名。李思忠 (1966 年) 在陕西秦岭发现了细鳞鱼，由于幽门盲囊数、侧线鳞数、鳃耙数及体侧斑点大小等差异，定为秦岭亚种 *Brachymystax lenok tsinlingensis* Li. 《中国淡水鱼类的分布区划》(1981 年) 及《秦岭鱼类志》(未出版) 等把分布在河北北部白河和滦河

* 本课题是在我的老师郑葆珊教授指导下完成的。他在病危时还关注研究题目的计划和进度，本文的完成是对老师的怀念。

农牧渔业部水产局资助科研基金，参加围场地区野外调查和室内解剖工作的有：围场县水利局张子珍同志和本馆董安立同志；黑龙江水产研究所张觉民先生提供了标本和资料；中国科学院动物研究所杜继武同志代拍 X 光照片；自然博物馆林琦及照像室同志协助绘图和拍照；野外工作得到围场县水利局、塞罕坝千层板机械林场的领导大力支持和协助，在此一并致以衷心的感谢！

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上游的细鳞鱼也归属为秦岭亚种。1975年和1983—1985年笔者分别在白河上游（怀柔县和丰宁县）、滦河上游（围场县塞罕坝）采集到多尾细鳞鱼标本，经过和黑龙江地区、秦岭地区、图门江、新疆的标本或有关资料对比后，认为分布在各地区的细鳞鱼性状差异不明显，因此，我们认为细鳞鱼不存在亚种区分，均为 *Brachymystax lenok* (Pallas)。各地区细鳞鱼外部形态及X光照片见图1、2。各地区细鳞鱼主要性状对比参见表 I

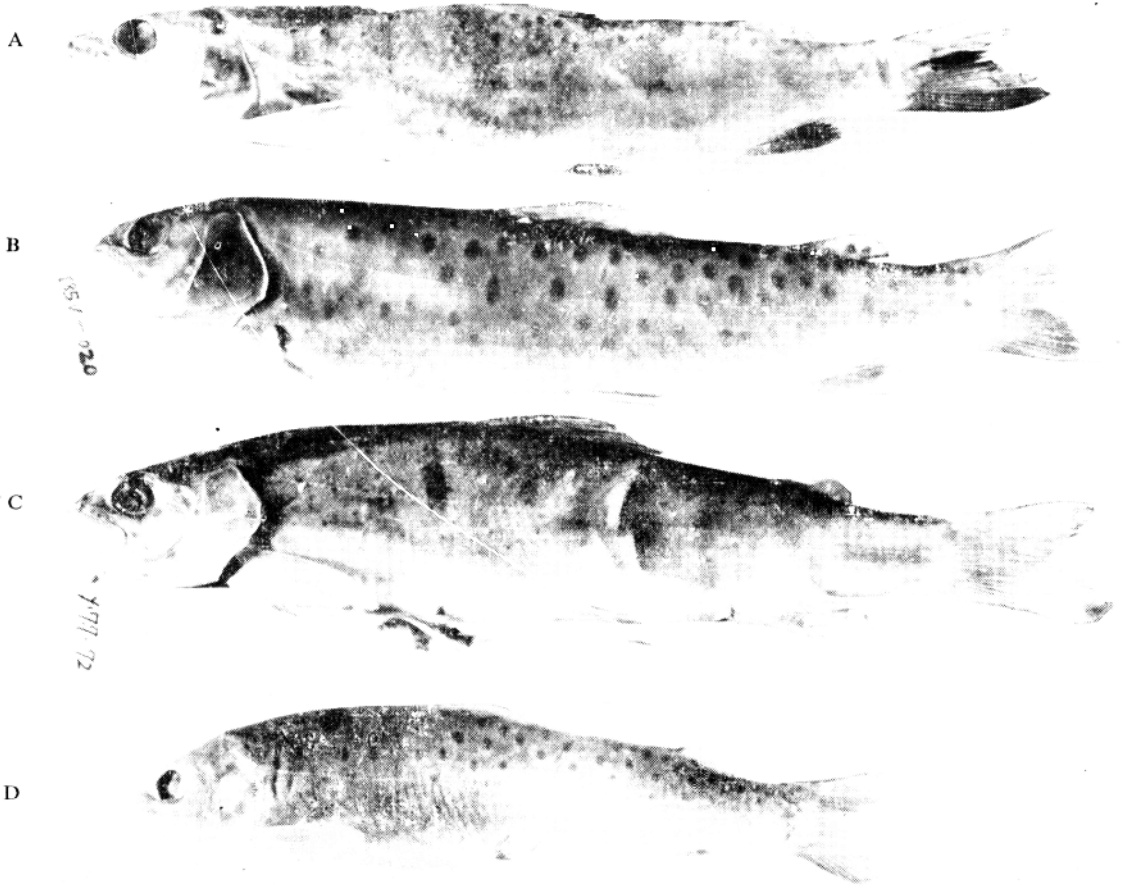


图1 各地区细鳞鱼外部形态比较

A. 黑龙江标本 B. 河北塞罕坝（滦河上游）标本 C. 河北汤河上游标本 D. 秦岭地区标本

Fig. 1 Features of the *B. lenok* as contrasted in various areas of its habitat

- A. The specimens from Heilongjiang area.
- B. The specimens from the Saihanba of Hebei province.
- C. The specimens from the upper reaches of Tanghe river.
- D. The specimens from the Qinling area.



图2 各地区细鳞鱼X光照片 A. 黑龙江标本 B. 河北塞罕坝标本 C. 河北汤河上游标本 D. 秦岭地区标本

Fig. 2 The X-ray pictures of *B. lenok* from different areas.
 A. The specimens from Heilongjiang area.
 B. The specimens from the Saihanba of Hebei province.
 C. The specimens from the upper reaches of Tanghe river.
 D. The specimens from the Qinling area.

表(I)

各地区细鳞鱼主要性状对比

地区 性状	黑龙江	图门江	新疆	秦岭	白河上游	滦河上游
背 鳍	iii-iv-12-10	iii-iv-11-12	ii-iv-9-11	iii-iv-10-11 iv-vi-11-12	iii-11	iv-10-12
臀 鳍	iii-8-11	iii-iv-9-10	ii-iv-9-11	iii-vi-9-11	iii-9	iii-9-10
胸 鳍	i-15	i-16	i-14-17	i-14-16	i-15	i-14-16
腹 鳍	i-8	i-9	i-9-11	i-8-9	i-8	i-9-10
侧 线 鳞	126—158	132—166	113—129	115—156	131	135—155
鳃 耙 数	24—26	20—24	21—27	17—23	19—20	19—20
幽门垂数	85—111	60—77	80—102	63—95	63—68	68—91
体长	4.32	4.1—5.3	4.33—4.88	3.9—4.9	4.5	4.1—5.4
体高						
体长	4.13	4.1—4.6	3.8—4.8	3.7—4.7	4.0	3.7—4.6
头长						
头长	3.6	3.0—4.1	3.6—4.6	3.1—4.8	4.2	3.4—4.1
吻长						
头长	5.3	3.9—4.9	4.0—5.3	3.7—4.9	3.6	3.1—4.5
眼径						
头长	3.6	2.8—3.5	2.9—3.8	3.2—4.2	3.6	3.0—4.4
眼间距						
尾柄长	1.67	—	1.3—1.7	1.1—1.5	1.4	1.1—1.7
尾柄高						
消化道长	0.9—1.0	—	1.6—1.7	0.7	0.8	1.0
体长						
上颌骨长度	后端不达眼 中部下方	后端达眼中部 下方或稍前	伸达眼中 部下方	伸达眼中 部下方	伸达眼中 部下方	伸达眼中 部下方
脊椎骨数	61	54—57	—	58—61 55*1	58	58—61
性成熟年龄	4—5龄	5—6龄 少数4龄	—	—	4—5龄	4—5龄
卵量(绝对)	4500—7500	4500—7400	—	740—800 2600—4500*1	—	1700—2000
卵粒大小 (mm)	3.5×4.1	3.7×4.2	—	1×1.5*2	—	4.1×4.1
食性	蜉蝣目, 蜻蜓 目, 蜻蜓稚虫, 鱼, 两栖, 植物 种子, 枝, 叶, 水草, 砂砾	蜉蝣目, 摇 蚊类, 毛翅 类, 鱼	—	萤火虫, 瓢虫, 虻, 蜉蝣, 飞 蚁, 马蜂, 鱼	全部鞘翅目 (龙虱科)	虻, 蜉蝣, 螺, 鱼卵, 砂砾, 植物枝叶, 鱼

*1 秦岭鱼类志

*2 估计是未成熟卵

根据表 I 得出以下结果:

1. 同一地区标本侧线鳞数变化幅度很大, 一般相差20—40片左右; 各地区标本的侧线鳞数相比也互相交叉。
2. 同一地区标本的幽门盲囊数变化幅度很大, 相差20—30个左右, 例如, 1983年9月在滦河上游同时、同地采到2尾标本(标本号83.9.053和83.9.055), 体长106和127毫米, 均为雄性, 胃内食物均为同一种蜂, 但二者的幽门盲囊数相差21个(见第6页图3); 黑龙江地区标本的幽门盲囊数80个以上的比例较大, 河北地区的80个以下的比例较大; 各地区标本相比, 幽门盲囊数也互相交叉。
3. 同一地区标本的体侧斑点均可见到大斑的和小点的(见第7页图4)。

二、河北北部细鳞鱼的研究

Nichols (1943) 和 Pope 曾纪录和报导过河北北部及热河地区有细鳞鱼的分布, 虽然未采到标本, 但他怀疑 Andrews 1919年摄自河北兴隆山的鱒鱼(Trout)照片有可能是细鳞鱼。1975年笔者在进行北京地区鱼类调查时, 在汤河上游也发现了细鳞鱼, 当地称为“花鱼”或“粹鱼”。1983—1985年北京自然博物馆与围场县水利局合作在塞罕坝处, 即滦河上游又采到细鳞鱼标本, 并对其生态进行了调查。

(一) 形态特征: (见封二图5)

标本33尾。体长93—320毫米。采自汤河上游(怀柔县和丰宁县)、滦河上游(塞罕坝)。

背鳍 iii—iv—10—12; 臀鳍 iii—9—10; 胸鳍 i—14—16; 腹鳍 i—9—10。侧线鳞约 135—155。鳃耙 19—(20)。脊椎骨数 58—62个。

体长为体高的4.0—5.5倍, 为头长的3.8—4.6倍, 为尾柄长的8.0—10.0倍。头长为吻长的3.4—4.1倍, 为眼径的3.4—5.5倍, 为眼间距的3.0—4.4倍。尾柄长为尾柄高的1.1—1.7倍。

体形长而侧扁。头稍尖, 吻钝。口亚下位, 横裂。上颌骨宽而长, 后端达眼中央下方。眼较大。眼间隔宽坦, 中央微凸。上颌、下颌、犁骨与腭骨各有一行尖齿, 犁骨齿与腭骨齿相连呈弧带状。舌厚, 具2纵行细齿。鳃孔大, 侧位。有假鳃。鳃耙外行呈长扁形。鳃一室, 长而大。胃很发达, 呈“U”字型, 胃壁很厚, 内壁有明显的褶皱。幽门盲囊63—91个, 以70—80个占多数, 60个以下和90个以上占少数(表 I)。消化管短, 其长度短于体长或等于体长。

体被椭圆形细鳞, 头部无鳞。侧线中位。背鳍起点距吻端较距尾鳍基为近。脂鳍与臀鳍相对。胸鳍位置低, 不达腹鳍基部。腹鳍始于背鳍基中部的下方, 后端不达肛门, 鳍基有一长形腋鳞。尾鳍叉形。

体背部及两侧散布很多椭圆形黑斑或小点, 背鳍和脂鳍上也有黑色斑点。

表(II)

河北细鳞鱼幽门盲囊数和鳃耙数

时 间	地 点	体 长 (mm)	幽门盲囊数 (个)	鳃耙数 (个)
1975.9	汤河上游	101	63	19
1983.9	吐力根河	127	70	19
1985.5	吐力根河	129	71	19
1985.5	吐力根河	130	72	19
1985.5	吐力根河	320	73	19
1985.5	吐力根河	145	75	19
1985.5	吐力根河	220	76	19
1985.5	吐力根河	171	77	19
1985.5	吐力根河	154	80	19
1985.5	吐力根河	106	91	20

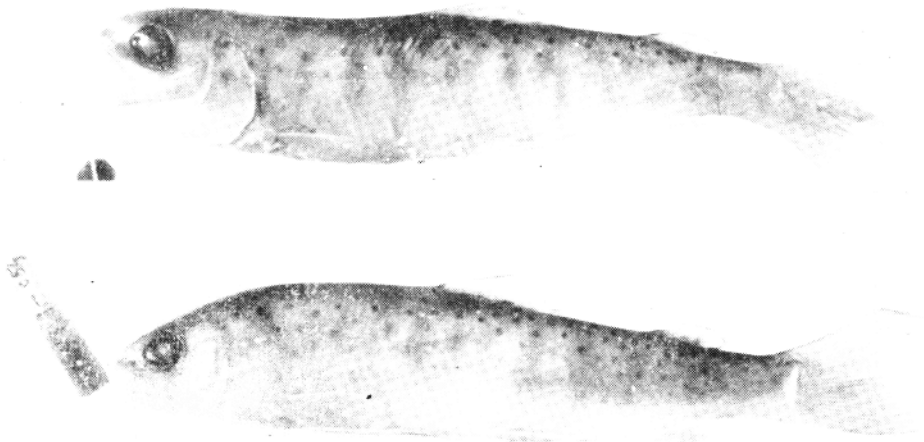


图3 同时同地采到二尾性别相同的标本，二者幽门盲囊数相差21个

Fig 3. Two specimens which were same sex and were collected in same place and same time. Their difference lie in the 21 pyloric caecus.

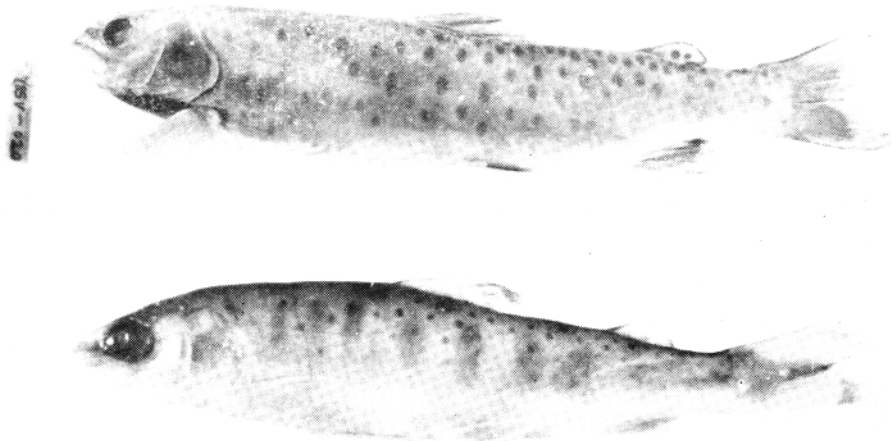


图4 同一地区(塞罕坝—滦河上游)细鳞鱼的斑点有大有小

Fig. 4 There are different size spots on *B. lenok* that were collected from the same place. (Saihanba of Weichang)

(二) 繁殖和生长

河北细鳞鱼的繁殖期是5月初(河流解冻后约一星期左右)。1985年5月4日和8日捕到3尾标本,性腺发育十分成熟,雌性卵巢已相当丰满,雄性精巢呈乳白色,十分松软,轻压腹部,精液或卵粒便流畅地排出。计算2尾体长320毫米的雌性个体,其怀卵量为1700粒(比其它地区怀卵量少)。卵直径4mm—4.1mm,桔黄色。胃内充塞度在70%—80%以上,证明产卵期中不停止摄食。有的文献报导细鳞鱼产卵后,大多数死亡,在本地区暂未见到这种现象(图6)。

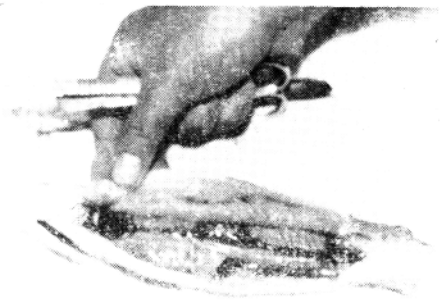


图6 成熟的雌鱼

Fig.6 Mature female fish.

捕到性成熟个体的生态环境是:水深1—1.2米。水面宽1.5米—2.0米。流速1米/秒—1.3米/秒。水温(中午)摄氏7—8度左右。pH值6。水底为砂砾,岸边有河柳及草甸(图7、8)。

3龄开始性成熟(体长接近200毫米),4龄达性成熟(个体长300毫米以上)。

性腺发育情况见第9页表Ⅲ



图7 细鳞鱼繁殖地点

左：吐力根河（围场塞罕坝地区。流速1米/秒）

右：吐力根河（内蒙、辽宁地区。流速1—1.5米/秒）

Fig.7 Reproduction place of *B. lenok*.

Left. Tuligenhe river (near the Saihanba of Weichang, water speed is 1 meter presecond)

Right. Tuligenhe river (Inner Mongolia and Liaoning province, water speed is 1—1.5 meter presecond)



图8 细鳞鱼生活地点

左：吐力根河（围场塞罕坝地段）

右：吐力根河（辽宁克什克腾旗地段）

Fig.8 Habitat of *B. lenok*.

Left. Tuligenhe river (near Saihanba of Weichang)

Right. Tuligenhe river (near the Keshiketeng Qi of Liaoning province)

（三）食性

为肉食性鱼类。通常以水生昆虫及其幼虫为饵，在胃内未消化的食物中比较多见的

表(Ⅱ)

河北细鳞鱼的性腺发育情况

采集时间	体长	性别	性腺发育情况 (长×宽mm)
1975.9	101	♂	16 (未成熟)
1985.5	106	♂	19 (未成熟)
1985.5	127	♂	20 (未成熟)
1985.5	130	♂	19×8 (未成熟)
1985.5	141	♂	20 (未成熟)
1985.5	145	♀	60×29 (见到小卵粒)
1985.5	145	♀	性腺不明显,呈线状
1985.5	153	♂	性腺不明显
1985.5	153	♀	见到不成熟的卵粒
1985.5	141	♂	20 (未成熟)
1985.5	165	♀	性腺不明显,呈线状
1985.5	177 (重86g,3龄)	♂	精巢纵贯体腔
1985.5	180	♂	右47.5×3.1 左66×2
1985.5	220 (3龄)	♀	60×2.9
1985.5	247	♀	70卵粒明显,卵直径1.5左右
1985.5	251 (246g)	♀	卵粒明显,卵直径1.5—2
1985.5.4	320 (575g)(4—5龄)	♀	腹腔充满成熟卵,卵粒直径4—4.1
1985.5.4	320	♀	腹腔充满成熟卵,卵粒直径4—4.1左右
1985.5.8	320 (5龄)	♂	150×70 出水时精液外溢

有：蜉蝣类、摇蚊类、襁翅类、虻类、蝇类等，也食甲壳类、小鱼及其卵。在胃内也有一些砂砾、植物的枝叶等杂物，估计这不是它所需求的食物，是捕捉动物性食物（尤其是吞食鱼卵）时带入。细鳞鱼比较贪食，检查85008号标本，体长为180毫米，在胃内有45—60个未消化的虻类及一些其它杂物。河北细鳞鱼的食性见表IV。

(四) 几点意见：

1. 细鳞鱼在河北北部的分布，不但在动物地理学的研究上很有价值，并也具有一定的经济意义，它肉肥，含脂量高，卵亦为珍贵食品，是很有发展前途的经济鱼类。因此，不但要保护资源，而且要积极发展成为人工养殖品种。哈尔滨水产试验场（1954年）和吉林省水产科学研究所等单位对本种鱼的养殖已取得一定的成功经验。

2. 白河上游和滦河上游，水温较低，森林植被条件良好，所以水质清澈且湍急，附近草甸地区又有一些牧业，促使一些昆虫繁衍，如，虻类、蝇类、蜂等非常丰富，为细鳞鱼生活提供良好的生态环境。应该利用本地区优越的自然环境和水质条件，建立冷水性鱼类的繁殖基地。

3. 在六十年代初，塞罕坝处细鳞鱼数量还很多，由于水浅河面又窄，极易捕捉，据访，在河叉处不到一小时就能捕到一筐（约15公斤），最大个体可达6公斤。由于长期不

表(IV) 河北细鳞鱼的食性

时间	地点	体长 (mm)	食性	胃充塞度
1975.9	汤河上游	101	全部蜉蝣类	80%
1983.9(下旬)	坝上吐力根河	106	全部为一种蜂	90%
1983.9(下旬)	坝上吐力根河	127	全部为一种蜂	90%
1985.5(上旬)	坝上吐力根河	130	一条未消化的鱼	70%
1985.5	坝上吐力根河	130	鱼卵、砂粒、昆虫头及肢体、树枝、叶片	90%
1985.5	坝上吐力根河	145	2—3个小虾	接近空胃
1985.5	坝上吐力根河	145	砂粒、草叶、鱼卵、27只未消化的虻、(肠内有3—4条寄生虫)	100%
1985.5	坝上吐力根河	180	45—60个未消化的虻及一些消化过的杂物	100%
1985.5	坝上吐力根河	320	食物已消化	60%

适当的滥捕，更有甚者，炸鱼、毒鱼时时发生，如不加强繁殖保护，控制捕捉数量和季节，资源遭到严重破坏，尤其是汤河上游，近几年又遭到干旱的威胁，本地区细鳞鱼有绝迹的危险。因此，在细鳞鱼分布地区，如北京、河北的承德地区、内蒙的锡林郭勒盟、辽宁的克什克腾旗等地，要联合制定保护措施。

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RESEARCH OF BRACHYMYSTAX AND B.LENOK (PALLAS) FROM NORTHERN AREA OF HEBEI

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Key words: *Brachymystax lenok* • *Brachymystax* genus • *Brachymystax lenok*
from northern of Hebei

TEXT

I REAEARCH OF *BRACHYMYSTAX*

The fish of the *Brachymystax* genus are found in rivers in the Soviet Union, China, Korea, Mongolia and so on.

Günther classified the *Brachymystax* in 1866. His finding was based on Pallas's research of the *Salmo lenok* found in the Yenese river in 1773. It is generally considered that there is only one species, That of *B. lenok* in this genus. Because, the species from the Tumenjang river have some special difference from other species such as a longer head. Maxillary, a more pointed snout and fewer pyloric caecae. Mori (1930) classified the species from Tumenjang river as *Brachymystax tumensis* Mori. Berg (1932, 1949) and Mori both believed that *Brachymystax tumensis* Mori and *Brachymystax lenok* (Pallas) are one in the same thing, but with different names. Sizhong Li (1966) found *Brachymystax* on Qinling mountain in Shanxi, which was classified as *Brachymystax lenok tsinlinsis* Li subspecies on count of its number of pyloric caecae, number of scales in lateral line, number of gill raker and size of large and small spots on the side of the body and so on. Studies on Zoogeographical division for fresh water fish of China Li (1981) and fauna fish of Qinling also classified the *Brachymystax* found in the upper reaches of the Baihe river, the Luanhe river and northern area of Hebei as the *Brachymystax lenok tsinlinsis* Li subspecies. During period 1975 and 1983—1985, the writer collected many *Brachymystax* specimen near the upper reaches of the Baihe (Huairou county near Beijing and Fonging county) and the upper reaches of the Luanhe river (Saihanba, Weichang county). After I contrasted my specimen with the specimen and date from the Heilongjiang area, Qinling area, Tumenjiang area and Xinjiang area, I found that the apparent difference among those specimen form different are in fact not very striking. So I believed *Brachymystax* is thus *Brachymystax lenok* (Pallas), not a subspecies.

Contrast of main property of the *Brachymystax* from different areas see Figure 1.2 and Table I

Resulted in the following:

1. The number of scales in lateral line ranges from 20 to 40. I have found that the numbers of scales have arrange of intersection based upon the specimen from the various areas.

2. The range of the pyloric caecae number of specimen from same area is quite significant, from 20 to 30. For example, I collected two specimens in the same area and same time at the upper reaches of the Luanhe river in September 1983. Specimen numbers are 83.9.053. and 83.9.055. Their body lengths are 106 mm and 127 mm respectively, both are male. Food found in the stomachs is the same species of wasp. But the number of pyloric caecae of the two specimens by 21 (See Figure 3). The specimen from the Heilongjiang area with pyloric caecae over 80 was predominant, whereas those from the Hebei area with pyloric caecae under 80 had a fairly low rate. The pyloric caecae number of specimens from different areas included a range of intersection.

3. We can see the big or small spots on the sides of specimens from the same area (See Figure 4)

II. RESEARCH OF THE *BRACHYMYSTAX LENOK* IN NORTHERN HEBEI

Niconlis, J.T (1943) and Pope, C.H reported that there were some *Brachymystax* found in northern Hebei area and Rehe area. Although he didn't collect any specimens, he still suspected that the pictures of Trout, Andrews taken in 1919 were *B. lenok*. In 1975, the writer found the *B. lenok* at the upper reaches of Tanghe river while I made an investigation for Beijing area, which was called flower fish or "hua fish" by the native people. During 1983-1985, Beijing Natural History Museum and Irrigation Bureau in Weichang county worked together to collect *B. lenok* specimens at the upper reaches of the Luanhe river and investigate its ecology.

1. Diagnosis (Figure 5)

33 specimens body length without caudal fin 93—320 mm from the upper reaches of Luanhe river and Tanghe river (Huairou county, Fengning county and Saihanba). D. iii—iv-10—12; A. iii-9—10; P.i-14—16; V.i-9—10. Scales in lateral line 135—155; Gill raker 58—62; Vertebra 58—62.

Depth in length 4.0—5.5; Head 3.8—4.6; length of caudal peduncle 8.0—10.0. Eye in head 3.4—5.5; Snout 3.4—4.1; Interorbital space 3.0—4.4. Depth of caudal peduncle in length of caudal peduncle 1.1—1.7.

Body elongate and slightly compressed, Head much elongate. Snout elongate pointed. It has well developed gaster, which is in "U" shape. Pyloric, 70—80. The specimens with pyloric under 60 and over 90 only took small percentage. There were many spots on its body. See Table II

2. Reproduction and growth

The *B. lenok* in Hebei begins to breed in early May, a week or so after the iced river melted. I collected 3 specimens on the 4th May. Their sexual glands were very well developed. The female sexual gland was full mature. The male spermary was white and soft. When the stomach area was slightly pressed, sperms or ova flowed out very easily. Both of body length of the two female *B. lenok* were 320 mm. They contained 1700 ova each one. This number is not as large as that found in the fish from other areas. The yellow ovum diameter is about 4—4.1 mm. The stomach was 70%—80% full. This proves that the fish continues feeding even during the laying period. Previous articles have reported that most of *B. lenok* would die after the laying period. But, we haven't found this to be true.

The environment where we collected the mature specimens has a water depth of

1—1.2 m. water width of 1.5—2.0 m. water speed of 1—1.3 m/s, water temperature of 7—8°C or so, PH. =6, sand and gravel made up the river bottom. There are some weeping willows and grassy marshland found on the banks of the river (Fig.6.7.8.).

The sex gland begins to mature at 3 year old with body length about 200 mm. The fish are mature at 4 year old with body length over 300 mm.

Table III describes the development of the sex gland.

3. Feeding habits

This fish feeds on other fish, water insects and insects larva made up the daily diet. The undigested food found in the stomach are generally maylies, midges, house flies, crust, fly, and small fish and their ova. At the same time, there were also some sand and plant leaves found in the stomach. But, I don't think this is the food that makes up the important part of the fish diet. The sand and leaves found in the stomach of the *Brachymystax* are supposed to be in the stomach when the fish feeds insects or eggs. The *Brachymystax* eats greedily. The specimen No. 85008 has body length of 180 mm. 45—60 undigested house flies and some other things were found in the stomach.

Table IV describes the feeding habits of *Brachymystax Lenok*.

4. Several opinions

(1.) *Brachymystax* genus found on the northern Hebei are not only of great value to the research of Zoogeography, but also of economic importance to China. The meat is oily and high quality. Its ovum is a kind of delicacy. This fish has a brilliant future of development. So, not only we should protect this natural resource, but also we must put great efforts into domesticating this species of fish. Some units, such as Harbin aquatic testing station (1954) and Jilin province aquatic science research institute and so on, have achieved some successes in domesticating this kind of fish.

(2.) The water temperature in the upper reaches of the Baihe river and the Luanne river is fairly low. There, Forest conditions for vegetation is quite good. The water is very clean and flows very fast. There are also some animal raising farms in the area. These environmental conditions are quite good for the *Brachymystax*. We should make use of these excellent natural conditions and high quality water in this area to set up a breeding site for cold water fish.

(3.) There were still many *Brachymystax* at the beginning of 1960 s. Because of the shallow and narrow river, it was easy to catch fish. In that time, You could catch quite a few fish (about 15 kilogram) in one hour time. The biggest fish caught was almost 6 kilogram. Because, fishing was carried on all year round without any regulations, sometimes even poisons and explosions were used to fish, The resource has been ruined severely. Recently, this area has been suffered from drought so that the *Brachymystax* is in danger of extinction. So, cooperation is necessary between Beijing, the Chengde area of Hebei province, the Xilingele Meng of Inner Mongolia and Keshiketeng Qi of Liaoning province and so on in order to save the *Brachymystax* from extinction.