**Small Mammals and Fish Bones**

This chapter describes the fish and small mammal bones recovered from Area M in terms of taxon, skeletal element, and information relevant for age determination and taphonomy, when applicable.

**Small Mammals**

Lior Weissbrod

During the 2009 season several samples were recovered from an 8th century BCE context (L.09-315, see Chapter X). This locus was divided into small 0.5 X 0.5 meter squares . Samples were carefully retrieved from each square. These amount to over 2,500 identifiable bones, recovered from a sediment volume of roughly three quarters of a cubic meter, all wet-sieved through a 1 mm mesh screen. An estimation of the density of these finds (the number of specimens per liter of sediment) shows that it is about 10 specimens per litter (see Table 1). Remains of small mammals (86 specimens) constitute about 4% of this assemblage (Table 2).

Six different taxa of small mammals were identified in this material based on analysis of the molar teeth (Table 2). These belong to two mammalian orders: Rodentia (rodents, NISP=27, 43%) and Eulipotyphla (insectivores), including the common house mouse (*Mus musculus domesticus*, NISP=40, 46.5%), jird (*Meriones tristrami*, NISP=1, 1.2%), field vole (*Microtus guentheri*, NISP=5, 5.8%), and shrew (Soricidiae, NISP=3, 3.5%). The dominant species is the house mouse (85% of molars). No signs of chemical corrosion or burning marks were found on any of the bones.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | **Taxonomic information** |
| **Basket** | **Square/Sector** | **Volume** | **Small mammals** | **Other small vertebrates** | **N/A** |
| 74051 | SE | 9 | 2 | 44 |   |
| 74052 | NE | 9 | 0 | 57 |   |
| 74054 | NW | - | 0 | 8 |   |
| 74055 | SW | - | 0 | 66 |   |
| 74099 | SW | - | 2 | 37 |   |
| 74100 | Middle | - | 1 | 31 |   |
| 74101 | NW | - | 1 | 119 |   |
| 74102 | Installation: 1st level | - | 2 | 21 |   |
| 74104 | Installation: 2nd level | - | 0 | 10 |   |
| 74105 | Installation: 5th level | - | 1 | 31 |   |
| 74106 | Installation | - | 3 | 9 |   |
| 74107 | 3a | - | 1 | 27 |   |
| 74108 | 7a | 7 | 0 | 50 |   |
| 74108 | 7b | - | 0 | 42 |   |
| 74143 | 7c | - | 0 | 43 |   |
| 74195 | 3b | 4 | 0 | 11 |   |
| 74198 | 3c | 8 | 0 | 153 |   |
| 74240 | 4a | 9 | 12 | 53 |   |
| 74241 | 4c | 8 | 4 | 36 |   |
| 74242 | 8c | 9 | 0 | 1 |   |
| 74243 | 8a | 9 | 7 | 87 |   |
| 74245 | 10d | 9.5 | 0 | 39 |   |
| 74301 | 9c | 6 | 1 | 93 |   |
| 74302 | 9d | 5 | 1 | 23 |   |
| 74310 | 9a | 9 | 3 | 69 |   |
| 74364 | 14b | - | 0 | 25 |   |
| 74369 | 11b | 10 | 2 | 301 |   |
| 74373 | 14a | 9 | 2 | 138 |   |
| 74374 | 11d | 9 | 1 | 99 |   |
| 74403 | 15b | 4 | 0 | 21 |   |
| 74437 | 5a | 8 | 3 | 105 |   |
| 74444 | 5b | 6 | 0 | 16 |   |
| 74444 |   | 8 | 5 | 142 |   |
| 74447 | 17b | 4 | 4 | 57 |   |
| 74474 | 5d | 8 | 2 | 28 |   |
| 74478 | 3a | 4 | 0 | 14 |   |
| 74480 | 3d | 4 | 1 | 27 |   |
| 74487 | 4a | 10 | 1 | 21 |   |
| 74488 | 4c | 9 | 1 | 26 |   |
| 74524 | 8a | 10 | 2 | 82 |   |
| 74525 | 8c | 8 | 4 | 29 |   |
| 74577 | 18a | 2 | 1 | 1 |   |
| 74580 | 18d | 3.5 | 2 | 6 |   |
| 74585 | 4c | 9.5 | 0 | 43 |   |
| 74586 | 8a | - | 7 | 36 |   |
| 74637 | 5d | 8 | 1 | 27 |   |
| 74641 | 5d | - | 6 | 32 |   |
| **Sum** |  | **235.5** | **86** | **2436** |  |

Table 1: General information of small mammals assemblage

**Fish Bones**

Omri Lernau

The fish bone assemblage from Hazor is smaller and includes samples from several seasons and contexts (Table 3). These amount to 1,107 bones which can be divided by periods: 406 specimens from LBA contexts, 12 from Iron I and 689 specimens from Iron II contexts.

Eleven different families of fish were identified in the Iron Age and can be divided into three sub categories: Three families are local, originating in the Hula Lake, the Jordan River or the Sea of Galilee: Clariidae, Cyprinidae and Cichlidae, making up 90.4% of the assemblage; Seven families originate in the Mediterranean Sea: Carangidae, Engraulidae, Moronidae, Mugilidae, Sciaenidae, Serranidae, and Sparidae, making up 9.2% of the assemblage; Only one family was imported from the Nile: Centropomidae, making up 0.4% of the assemblage (comprising of a single bone).

In the LBA, the assemblage is much less varied. A total of four families were identified, divided into two sub-categories: Three families are local, originating in the Hula Lake, the Jordan River or the Sea of Galilee: Clariidae, Cyprinidae and Cichlidae, making up 98.2% of the assemblage; Only one family originates in the Mediterranean Sea: Sparidae, making up 1.8% of the assemblage.

The assemblage of fish bones from Hazor is heavily dominated by local fish, which is entirely different from other inland sites in the country.

It should not come as a surprise that burnt fish bones are more common in the LBA, as these were found in the destruction level of the Administrative Palace. These comprise 34.6% of the assemblage and only 4.5% in the Iron II assemblage.

The size of the fish could be estimated in 66 specimens of the LBA and 47 specimens of the Iron Age. In all cases, it seems that the fish brought to the site were small. Even large fish that could potentially reach a size of 1-1.5 meters in length (such as the *Clariidae gariepinus Clarias* and the *Moronidae labrax Dicentrarchus*) are represented in small specimens.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Locus** | **Family** | **Species** | **Genus** | **n** |
| L.09-315 | Carangidae | trachurus | Trachurus | 1 |
| L.09-315 | Centropomidae | niloticus | Lates | 1 |
| L.09-315 | Cichlidae | - | - | 49 |
| L.09-315 | Cichlidae | galilaea | Tilapia | 2 |
| L.09-315 | Cichlidae | zillii | Tilapia | 1 |
| L.09-315 | Clariidae | gariepinus | Clarias | 108 |
| L.09-315 | Cyprinidae | - | - | 47 |
| L.09-315 | Engraulidae | encrasicholus | Engraulis | 1 |
| L.09-315 | Moronidae | labrax | Dicentrarchus | 1 |
| L.09-315 | Mugilidae | - | - | 4 |
| L.09-315 | Mugilidae | ramada | Liza | 1 |
| L.09-315 | No diagnosis | - | - | 303 |
| L.09-315 | Sciaenidae | regius | Argyrosomus | 1 |
| L.09-315 | Serranidae | - | - | 1 |
| L.09-315 | Sparidae | - | - | 7 |
| L.09-315 | Sparidae | aurata | Sparus | 2 |
| L.15-302 | Cichlidae | - | - | 2 |
| L.15-302 | Cyprinidae | - | - | 1 |
| L.15-302 | Cyprinidae | damascina | Capoeta | 1 |
| L.15-302 | No diagnosis | - | - | 7 |
| L.15-302 | Sparidae | aurata | Sparus | 1 |
| L.15-303 | Cichlidae | - | - | 2 |
| L.15-303 | No diagnosis | - | - | 4 |
| L.15-311 | Cichlidae | - | - | 2 |
| L.15-311 | Clariidae | gariepinus | Clarias | 1 |
| L.15-311 | Cyprinidae | - | - | 2 |
| L.15-311 | No diagnosis | - | - | 11 |
| L.15-325 | Clariidae | gariepinus | Clarias | 3 |
| L.15-325 | No diagnosis | - | - | 10 |
| L.15-329 | Clariidae | gariepinus | Clarias | 9 |
| L.15-329 | Cyprinidae | - | - | 1 |
| L.15-329 | No diagnosis | - | - | 25 |
| L.15-335 | Cichlidae | - | - | 1 |
| L.15-335 | Cyprinidae | - | - | 1 |
| L.15-335 | No diagnosis | - | - | 3 |
| L.15-344 | Clariidae | gariepinus | Clarias | 3 |
| L.15-344 | Cyprinidae | - | - | 1 |
| L.15-344 | No diagnosis | - | - | 6 |
| L.15-347 | Cichlidae | - | - | 2 |
| L.15-347 | Clariidae | gariepinus | Clarias | 11 |
| L.15-347 | Cyprinidae | - | - | 1 |
| L.15-347 | Cyprinidae | longiceps | Barbus | 1 |
| L.15-347 | No diagnosis | - | - | 10 |
| L.15-347 | Sparidae | aurata | Sparus | 1 |
| L.15-348 | No diagnosis | - | - | 4 |
| L.15-355 | Cyprinidae | - | - | 1 |
| L.15-355 | No diagnosis | - | - | 1 |
| L.16-301 | Cichlidae | - | - | 1 |
| L.16-301 | Clariidae | gariepinus | Clarias | 5 |
| L.16-301 | Cyprinidae | - | - | 1 |
| L.16-301 | No diagnosis | - | - | 8 |
| L.16-302 | Cichlidae | - | - | 1 |
| L.16-302 | Clariidae | gariepinus | Clarias | 5 |
| L.16-302 | No diagnosis | - | - | 2 |
| L.16-302 | Sparidae | aurata | Sparus | 1 |
| L.16-311 | Cichlidae | - | - | 1 |
| L.16-311 | Cichlidae | sacra | Tristramella | 1 |
| L.16-311 | Clariidae | gariepinus | Clarias | 3 |
| L.16-311 | Cyprinidae | - | - | 4 |
| L.16-311 | Mugilidae | cephalus | Mugil | 1 |
| L.16-311 | No diagnosis | - | - | 29 |
| L.16-322 | Cichlidae | - | - | 2 |
| L.16-322 | Cyprinidae | - | - | 1 |
| L.16-322 | No diagnosis | - | - | 7 |
| L.16-326 | Cichlidae | - | - | 1 |
| L.16-326 | Cyprinidae | - | - | 1 |
| L.16-326 | No diagnosis | - | - | 1 |
| L.16-327 | Cichlidae | - | - | 2 |
| L.16-327 | Clariidae | gariepinus | Clarias | 5 |
| L.16-327 | Cyprinidae | - | - | 4 |
| L.16-327 | No diagnosis | - | - | 21 |
| L.16-330 | No diagnosis | - | - | 1 |
| L.16-333 | Clariidae | gariepinus | Clarias | 3 |
| L.16-335 | Clariidae | gariepinus | Clarias | 3 |
| L.16-335 | Cyprinidae | - | - | 1 |
| L.16-335 | No diagnosis | - | - | 3 |
| L.16-337 | Cichlidae | - | - | 1 |
| L.16-337 | Clariidae | gariepinus | Clarias | 2 |
| L.16-337 | No diagnosis | - | - | 3 |
| L.16-338 | Cichlidae | - | - | 1 |
| L.16-338 | Clariidae | gariepinus | Clarias | 2 |
| L.16-338 | No diagnosis | - | - | 2 |
| L.16-339 | Clariidae | gariepinus | Clarias | 3 |
| L.16-339 | No diagnosis | - | - | 7 |
| L.16-340 | Cichlidae | - | - | 3 |
| L.16-340 | Cichlidae | zillii | Tilapia | 1 |
| L.16-340 | Clariidae | gariepinus | Clarias | 40 |
| L.16-340 | Cyprinidae | - | - | 10 |
| L.16-340 | Cyprinidae | longiceps | Barbus | 1 |
| L.16-340 | No diagnosis | - | - | 89 |
| L.16-340 | Sparidae | - | - | 1 |
| L.17-301 | Cichlidae | - | - | 1 |
| L.17-301 | Clariidae | gariepinus | Clarias | 10 |
| L.17-301 | Cyprinidae | - | - | 3 |
| L.17-301 | No diagnosis | - | - | 10 |
| L.17-304 | Cichlidae | - | - | 1 |
| L.17-304 | Clariidae | gariepinus | Clarias | 12 |
| L.17-304 | Cyprinidae | - | - | 2 |
| L.17-304 | No diagnosis | - | - | 18 |
| L.17-304 | Sparidae | - | - | 1 |
| L.17-313 | Cichlidae | - | - | 4 |
| L.17-313 | Clariidae | gariepinus | Clarias | 14 |
| L.17-313 | Cyprinidae | - | - | 4 |
| L.17-313 | No diagnosis | - | - | 37 |
| L.17-318 | Cyprinidae | - | - | 1 |
| L.17-318 | No diagnosis | - | - | 5 |
| L.17-319 | Cichlidae | - | - | 1 |
| L.17-319 | Clariidae | gariepinus | Clarias | 2 |
| L.17-319 | Cyprinidae | - | - | 1 |
| L.17-319 | No diagnosis | - | - | 8 |
| L.17-321 | No diagnosis | - | - | 4 |
| L.17-321 | Sparidae | - | - | 1 |
| L.17-325 | Cichlidae | - | - | 2 |
| L.17-325 | Clariidae | gariepinus | Clarias | 2 |
| L.17-325 | Cyprinidae | - | - | 1 |
| L.17-325 | No diagnosis | - | - | 6 |
| L.17-326 | Cichlidae | - | - | 1 |
| L.17-326 | Clariidae | gariepinus | Clarias | 1 |
| L.17-326 | Cyprinidae | - | - | 1 |
| L.17-326 | No diagnosis | - | - | 1 |
| L.17-327 | Cichlidae | - | - | 1 |
| L.17-327 | Clariidae | gariepinus | Clarias | 2 |
| L.17-327 | No diagnosis | - | - | 5 |
| **Sum** |  |  |  | **1107** |

Table 3: Fish bones specimens by locus numbers