DEGENERATIVE JOINT DISEASE IN PRAOMYS (MASTOMYS) NATALENSIS

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Osteoarthritis, having the morphological characteristics of degenerative joint disease in large animals, occurs spontaneously in Syrian hamsters (Silberberg, Saxton, Sperling, and McCay, 1952), rats (Sokoloff and Jay, 1956), guinea-pigs (Silverstein and Sokoloff, 1958), and mice. Hereditary factors are of major importance in its development in mice (Sokoloff, Crittenden, Yamamoto, and Jay, 1962), and variations in the frequency of the disorder among the several species also presumably depend on their genetic constitution. The present paper reports that an additional small rodent is prone to degenerative joint disease. Involvement of the intervertebral disks is particularly conspicuous, and sometimes causes incapacity and death in older animals.

Praomys (subgenus Mastomys natalensis) (Davis, 1965) is a wild African rodent, intermediate in size and several other respects between rats and mice. This species has been studied under laboratory conditions in recent years because cancer frequently arises in its glandular stomach (Oettelé, 1957; Snell and Stewart, in press). Mastomys is not inbred, but having been reared in captivity is undoubtedly more homogeneous genetically than in the wild. The life-span is roughly comparable to that of the laboratory rat; the greatest age recorded in the present study was 38 months.

Material and Methods

Experimental Animals.—The specimen material represents the skeletal portion of 154 animals, between 8 and 35 months of age, used in a systematic study of the spontaneous lesions of Mastomys. Details of the origin and maintenance of the animals are reported in a separate paper (Snell and Stewart, in press). The cages in which they were housed were sufficiently high (64 in.) to permit bipedal erect posture. The cages were plastic, had flat bottoms, and were bedded with wood shavings.

Evaluation of Joint Disease.—Satisfactory sagittal histological sections of segments of the thoraco-lumbar spine were available in 134 animals (Table I). In one of these, 23 months old, serial sections of the entire vertebral column were made and stained variously by haematoxylin and eosin, periodic acid-Schiff, Alcian blue (pH 2.5), aqueous toluidine blue (pH 4), Rinehart, Wilder reticulum, crystal violet, Congo red, and Masson trichrome procedures (Lillie, 1965). Frozen sections of several degenerated vertebral columns were made after decalcification and stained with oil red 0; and von Kossa stain was used on an undecalcified section. Casual sections of the knee and other peripheral joints were available in some animals.

Table I

FREQUENCY OF HISTOLOGICAL LESIONS IN SPINES

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Age (mths)</th>
<th>No. of Animals</th>
<th>Disk Protrusion</th>
<th>Aseptic Necrosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breeder</td>
<td>25.0</td>
<td>23</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Non-breeder</td>
<td>26.9</td>
<td>42</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breeder</td>
<td>27.1</td>
<td>18</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Non-breeder</td>
<td>23.3</td>
<td>51</td>
<td>27</td>
<td>27</td>
</tr>
</tbody>
</table>

To determine the distribution of the articular lesions, the skeletons of an additional ten female (average age, 29 months) and ten male (26 months) Mastomys were prepared by maceration with papain (Table II, and Table III, opposite).

Table II

DISTRIBUTION OF DEGENERATIVE JOINT DISEASE IN TWENTY PRAOMYS AGED 21-34 MTHS

<table>
<thead>
<tr>
<th>Joint</th>
<th>Severity of Joint Disease*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Temporo-mandibular</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Shoulder</td>
<td>39</td>
<td>1</td>
</tr>
<tr>
<td>Elbow</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Radio-carpal</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Sacro-iliac</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Hip</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Knee</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Ankle</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td>Paw joints</td>
<td>2</td>
<td>13</td>
</tr>
</tbody>
</table>

The figures are the numbers of joints having the specified degree of degenerative disease. Paired joints have been counted separately except in the paws where an "average" score on multiple joints is estimated for each animal.

*Severity scale 0 to 4, determined on dry bone preparations.
TABLE III
SEX DIFFERENCES IN DISK DISEASE
(PAPAIN-PREPARED SPECIMENS)

<table>
<thead>
<tr>
<th>Sex</th>
<th>No. of Animals</th>
<th>Mean Age (mths)</th>
<th>Per cent. Disks Affected*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>10</td>
<td>26-0</td>
<td>0</td>
</tr>
<tr>
<td>Females</td>
<td>10</td>
<td>29-2</td>
<td>3</td>
</tr>
</tbody>
</table>

*Excluding caudal vertebrae.

The degree of degenerative disease was scored in the various joints on a 0 to 4 severity scale, according to the extent of eburnation and erosion of the articular surfaces as in previous studies (Sokoloff and others, 1962). This is a sensitive index of osteo-arthritis in the diarthroses, but detects only advanced disease of the intervertebral disks. The reason for this is that the epiphyses of the vertebral bodies remain ununited throughout life; variable separation occurs during the maceration procedure.

Skeletal Proportions.—Because generalized degenerative spinal and peripheral joint disease occurs at times in association with several patterns of abnormal skeletal conformation in man and several other species, body proportions were determined in a group of retired breeder male and female Mastomys 7 months old. The skeletons were defleshed by dermestid beetles (Hall and Russell, 1933) rather than papain, as above, because this method preserved the attachments of the pelvic and other bones required for some of the measurements. The lengths of several long bones and distances between certain fixed points (Fig. 1; see also Table IV, overleaf) were measured to the nearest 0.1 mm, with a Vernier caliper and related to body length.

Comparable measurements were made on retired breeder DBA/2JN mice, 9 months old, and Osborne-Mendel rats, 11 to 12 months old. These ages were chosen so that growth had approached a plateau value but degenerative disease had not yet set in.

Results

Vertebral Lesions.—Degeneration of intervertebral disks was present in the great majority of Mastomys 9 months old or older. In many animals, all disks examined were affected to some degree. In others, normal synchondroses existed next to severely degenerated ones. Well-developed lesions presented grossly as narrowing of the spaces between the vertebral bodies, accompanied by protrusion of pale, soft material dorsally into the spinal canal (Fig. 2).

Fig. 2.—Compression of spinal cord by protruding disk tissue.

Sometimes the spinal cord was greatly narrowed in the immediate area. Ventral protrusion of the degenerated disk tissue was less pronounced. The subchondral portions of the vertebral bodies were deformed in advanced lesions; erosion and eburnation extended into and even deep to the epiphyses. Marginal osteophyte formation was relatively mild considering the extent of the disk disease, but did occur both on the ventral and dorsal edges (Fig. 3).

Fig. 3.—Degenerative joint disease, cephalad end of lumbosacral vertebra. Eburnation appears as the glistening highlights on the subchondral plate of the vertebral body and of the articular surface of the zygaphophysis at the right. Irregular osteophytes are present at the margins of these structures and a large exostosis protrudes into the spinal canal.
### Table IV

**Body Proportions in *Pramomys*, Rat, and Mouse**

<table>
<thead>
<tr>
<th>Measurement</th>
<th><em>Pramomys</em></th>
<th>Rat</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Age (mths)</td>
<td>7</td>
<td>7</td>
<td>11-12</td>
</tr>
<tr>
<td>Weight (g.)</td>
<td>81 ± 2.9</td>
<td>48 ± 1.7</td>
<td>611 ± 16.3</td>
</tr>
<tr>
<td>Snout-Tail Length (cm.)</td>
<td>24.3 ± 0.26</td>
<td>21.6 ± 0.33</td>
<td>50.6 ± 0.48</td>
</tr>
<tr>
<td>Snout-Anus Length (cm.)</td>
<td>14.8 ± 0.17</td>
<td>12.8 ± 0.16</td>
<td>29.3 ± 0.25</td>
</tr>
<tr>
<td>(1) Head Length (cm.)</td>
<td>3.24 ± 0.019</td>
<td>3.03 ± 0.036</td>
<td>5.43 ± 0.036</td>
</tr>
<tr>
<td>(2) Head Width (cm.)</td>
<td>1.15 ± 0.015</td>
<td>1.13 ± 0.007</td>
<td>1.72 ± 0.019</td>
</tr>
<tr>
<td>(3) Humerus Length (cm.)</td>
<td>1.77 ± 0.020</td>
<td>1.57 ± 0.022</td>
<td>3.43 ± 0.031</td>
</tr>
<tr>
<td>(4) Ulna Length (cm.)</td>
<td>2.08 ± 0.023</td>
<td>1.92 ± 0.018</td>
<td>3.72 ± 0.035</td>
</tr>
<tr>
<td>(5) Radius Length (cm.)</td>
<td>1.73 ± 0.012</td>
<td>1.59 ± 0.017</td>
<td>2.97 ± 0.028</td>
</tr>
<tr>
<td>(6) Crest Width</td>
<td>1.70 ± 0.039</td>
<td>1.37 ± 0.044</td>
<td>3.34 ± 0.079</td>
</tr>
<tr>
<td>(7) Length</td>
<td>2.66 ± 0.021</td>
<td>2.29 ± 0.038</td>
<td>5.50 ± 0.054</td>
</tr>
<tr>
<td>Pelvis (cm.)</td>
<td>1.08 ± 0.034</td>
<td>0.88 ± 0.041</td>
<td>2.29 ± 0.038</td>
</tr>
<tr>
<td>(8) Interschial</td>
<td>1.18 ± 0.011</td>
<td>1.03 ± 0.010</td>
<td>2.38 ± 0.051</td>
</tr>
<tr>
<td>(9) Intercetabular</td>
<td>1.40 ± 0.018</td>
<td>1.20 ± 0.011</td>
<td>2.58 ± 0.060</td>
</tr>
<tr>
<td>(10) Interspinous</td>
<td>0.92 ± 0.012</td>
<td>0.84 ± 0.021</td>
<td>1.70 ± 0.019</td>
</tr>
<tr>
<td>(11) Dorso-ventral</td>
<td></td>
<td></td>
<td>3.34 ± 0.079</td>
</tr>
<tr>
<td>(12) Femur Length (cm.)</td>
<td>2.39 ± 0.026</td>
<td>2.11 ± 0.030</td>
<td>4.36 ± 0.034</td>
</tr>
<tr>
<td>(13) Tibia Length (cm.)</td>
<td>2.45 ± 0.018</td>
<td>2.27 ± 0.020</td>
<td>4.60 ± 0.040</td>
</tr>
<tr>
<td>(14) Third Metatarsal (cm.)</td>
<td>0.90 ± 0.010</td>
<td>0.87 ± 0.006</td>
<td>1.75 ± 0.014</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ratio (%)</th>
<th>Tail</th>
<th>Snout-Tail</th>
<th>Femur</th>
<th>Trunk</th>
<th>Humerus</th>
<th>Trunk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>39.3 ± 0.62</td>
<td>40.7 ± 0.42</td>
<td>20.8 ± 0.19</td>
<td>21.6 ± 0.23</td>
<td>15.3 ± 0.13</td>
<td>16.1 ± 0.21</td>
</tr>
<tr>
<td></td>
<td>42.2 ± 0.22</td>
<td>44.4 ± 0.28</td>
<td>18.3 ± 0.17</td>
<td>19.0 ± 0.11</td>
<td>14.4 ± 0.10</td>
<td>14.5 ± 0.09</td>
</tr>
<tr>
<td></td>
<td>45.2 ± 0.32</td>
<td>45.7 ± 0.12</td>
<td>19.3 ± 0.16</td>
<td>20.2 ± 0.10</td>
<td>15.0 ± 0.14</td>
<td>15.2 ± 0.06</td>
</tr>
</tbody>
</table>

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*The values represent the mean ± standard error estimated by the method of Mantel, (1951). The figures in parentheses are the number of measurements made in each group. The mean ratios were computed from each animal individually rather than group values.*

The zygapophyseal joints in or adjacent to affected vertebral centra sometimes had osteo-arthritic changes. Disk protrusions were much more common in males than in females (Tables I and III).

The initial histological event in the degeneration of the disk has not been established. Focal necrobiosis of the physaliform cells of the nucleus pulposus was seen quite commonly as an isolated abnormality in some animals; in others, small areas of disintegration of the annulus fibrosus, and death of its cells, were present while the nucleus pulposus was apparently preserved. Fissures sometimes appeared early between the nucleus pulposus and the annulus fibrosus; occasionally extravasated erythrocytes lay within these spaces.

The interpretation of the early lesions was complicated by the fact that aseptic necrosis of the secondary centres of ossification of the vertebrae was a common finding (Table I, and Fig. 4, opposite). Although epiphysial necrosis frequently accompanied degeneration and protrusion of the intervertebral disks, there were numerous instances in which the disks proper were intact while both adjacent epiphyses were necrotic; and obversely, early disk changes sometimes occurred while the adjacent bone centres were preserved. It was uncommon to find both epiphysial centres in a single plane of a casual section; but even in the presence of advanced protrusion of degenerated disks, several instances with at least one viable epiphysis were clearly recognized.
Before destruction of the entire disk, the degenerated areas commonly appeared sequestrated within fibrillated, disrupted annulus fibrosus (Fig. 5, overleaf). The nucleus pulposus disappeared early. The degenerated tissue was acellular and appeared variously amorphous or hyaline ("fibrinoid"). In general, the amorphous debris occupied the more central regions of degeneration. It contained no stainable lipid; chunks of necrotic cartilage and calcific material lay within it and it occasionally was bordered by foreign-body giant cells. The amorphous material was not metachromatic and was poorly stained by the periodic acid-Schiff routine. It was pale grey-green in the Masson preparation.

The hyaline areas were largely stained like fibrin by phospho-tungstic acid-haematoxylin (blue) and Masson trichrome (red) procedures. They contained no amyloid or metachromatic acid-mucopolysaccharide. Argyrophilic material was found only at the edges of fibrillated annulus fibrosus or occasionally at the interface of amorphous and hyaline areas of degeneration.

The dorsally protruded disk usually elevated and occasionally disrupted the dura mater. Massive myelomalacia was occasionally observed in the spinal cord immediately distal to a protruded disk (Fig. 6 overleaf); more often, focal areas of demyelination, infiltration by Gitter cells, and clusters of cholesterol crystal clefs were present in the cauda equina (Fig. 7, overleaf).

Other Articular Lesions.—Severe osteo-arthritis changes were present in many diarthrodial joints, particularly the elbow and knees (Table II). In the knees, the medial rather than the lateral condyle was affected. The histological character of the lesions was like that noted in other small animals. Extensive erosion of articular cartilage and sclerosis of epiphyseal bone were present; proliferative synovitis and periarticular mucoid cystic change were prominent in some animals. Unlike the spinal findings, there were no conspicuous sex differences in the frequency or severity of the diarthrodial lesions.
Fig. 5.—Sagittal section, showing moderate degeneration of inter-vertebral disk. A large, irregular fissure occupies the former position of the nucleus pulposus and most of the annulus fibrosus on the dorsal aspect of the disk. The chondral plate and epiphysis of the vertebral bodies have disappeared. Amorphous debris protrudes dorsally into the spinal canal above. Masson trichrome. × 27.

Fig. 6.—Debris of degenerated intervertebral disk in spinal cord. A low-grade foreign-body reaction and demyelination are present in the cord about chunks of amorphous material. Haematoxylin and eosin. × 65.
DEGENERATIVE JOINT DISEASE

Fibrillation of the costal joints was frequent, both at the sternal and the vertebral ends of the ribs. The sternal synchondroses for the most part had mild focal degenerative changes. The distal sternebra was usually sharply angulated ventral to the rest of the sternum. The cartilage between the two was disrupted; round islands of necrotic chondrocytes lay within amorphous and hyaline material like that in the degenerated intervertebral disks. Striated muscle from the hind quarters had no myositic changes.

Body Proportions.—The general configuration of Mastomys was comparable to that of mice and rats, but the length of the appendicular, relative to the axial skeleton was greater in the former (Table IV). Slight but significant sex differences in body proportions were found in each of the species. The femurs were longer, relative to the “trunk” (i.e. snout-anus length minus head length) in females of each species.

Clinical Manifestations.—After 2 years of age, the animals increasingly displayed a disinclination to use the hind extremities although they were capable of doing so when lifted by their tails. It is difficult to interpret these findings necessarily as evidence of spinal or peripheral joint disease, because this behaviour is also observed in other old laboratory rodents not known to have such lesions. Overt paraplegia was, however, seen at times. The retrospective data are incomplete in this regard, but it probably occurred in fewer than 10 per cent. of the Mastomys.

Discussion

Osteo-arthritis is commonly regarded as a “wear and tear” disorder of senescence, in which mechanical factors cause abrasion of articular cartilage and remodelling of the contours of joints. The concept that biological properties of the animal contribute significantly to the development of the disorder rests in large part on the demonstration of genetic differences in their susceptibility to it. The present observations in Mastomys add further evidence of this sort.

The widespread character of the lesions suggests that some presently unrecognized peculiarity of the articular tissues is the focus of this susceptibility. It is, therefore, of interest that degenerative changes, having considerable histological similarity to those in the disks, were also present in the distal sternebral synchondroses that appear subject only to restricted stresses. Further identification of the predisposition to degenerative disease is necessarily only a matter of animal at present.

Severe precocious and generalized degenerative joint disease has been recognized in man (Moldawer,
Hanelin, and Bauer, 1962) and other species having inherited peculiarities of epiphyseal and presumably articular (including intervertebral disk) cartilage. Chondrodystrophoid breeds of dogs, particularly dachshunds, are prone to develop degenerative intervertebral disk disease (Hansen, 1959). Much variation in the size and shape of the skeleton is known to exist among the 570 named forms of Rattus (Walker, Warnick, Lange, Uible, Hamlet, Davis, and Wright, 1964). “Dyschondrogenesis” has been regarded as the basis for the degenerative joint disease in STR/1N mice by some investigators (Silberberg and Silberberg, 1964), but not by others (Sokoloff, Varney and Scott, 1965). The body proportions of Mastomys do not indicate that the animal is chondrodystrophoid.

Regardless of systemic factors, localized peculiarities (presumably mechanical) also are important insofar as certain joints are spared while others are severely involved. The preservation of the hip joint is remarkable inasmuch as, in contrast to the knee, has not been involved in any of the species of laboratory rodent studied. Osteo-arthritis of the hip is exceedingly common in certain breeds of dogs, such as the German shepherd. Here it develops secondary to dysplasia of the hip (Riser, 1963) and typically does not have the generalized character of the lesion in rodents. Among rodents, Mastomys is the species, with the exception of STR/1N mouse, that is most susceptible to degenerative joint disease. The vertebral involvement exceeds that of the other rodents. In guinea-pigs, the shoulders are frequently involved (Silverstein and Sokoloff, 1958); in Mastomys they are not. Postural stress, induced by amputation of the forelimbs in new-born rats, has been reported to cause degeneration of intervertebral disks (Yamada, 1962).

Rats of various strains have had little degenerative disease of peripheral (Sokoloff and Jay, 1956) or spinal joints (Bokelman, 1964). Marginal osteophytes have been found with some frequency on the ventral aspects of the thoracolumbar vertebrae. The suggestion was previously offered that these arise as a consequence of aseptic necrosis of the adjacent vertebral epiphyses in animals having senile kyphosis (Sokoloff and Habermann, 1958). The kyphosis has at times been attributed to the housing of the rats in low cages. In Mastomys aseptic necrosis occurred frequently although they were not necessarily kyphotic; nor was it clear that the epiphyseal necrosis was causally related to the degeneration of the disk. The height of the cages employed here precludes Haltungskyphose as the basis for their spinal disease. A senescent muscular dystrophy has been described in the hindquarters of Sprague-Dawley rats (Berg, 1956). It was manifested clinically by weakness of the hindpaws, and histologically by nonspecific degenerative and atrophic changes. These rats also had kyphosis and neural lesions in the form of myelin degeneration of the spinal roots and peripheral nerves (Berg, Wolf, and Simms, 1962). Although the skeletal muscle in Mastomys did not usually have the histological changes reported in the rats, there are certain similarities in the syndromes and a further examination of the intervertebral disks in that strain may be warranted.

Genetically governed degeneration of the nucleus pulposus had been described in mice having the Pintail (Pr) trait (Berry, 1961). Aside from shortening and deformity of the tail, the more proximal spine had abnormally small nuclei pulposi. Accelerated “ageing” manifested by fibrosis of the nucleus pulposus and focal ossification of the annulus developed in these mice within 100 days of birth, but further degeneration and protrusion of the disks, comparable to that in Mastomys was not described.

Whether protrusion of degenerated intervertebral disks in man and other large species originates in degeneration of the nucleus pulposus or of the annulus fibrosus has been argued both ways. A decrease in the water content as well as alterations in the polysaccharide-protein composition of the nucleus pulposus occur with ageing in man (Püschel, 1930; Mitchell, Hendry, and Billewicz, 1961; Lyons, Jones, Quinn, and Sprunt, 1964), and collapse of the disk is often ascribed to these changes and a diminished elasticity they are postulated to entail. An age-correlated decline of the chondroitin 6-sulphate/keratosulphate ratio in the nucleus pulposus has also been documented in rabbits (Davidson and Small, 1963). On the other hand, herniation of degenerated disk tissue requires that annulus fibrosus be disrupted; and degenerative changes also take place with age in the annulus (van den Hooff, 1964; Butler and Smith, 1965). Both the nucleus pulposus and the annulus fibrosus are consumed in the degenerative process in Mastomys. The initial event has not been resolved by the present studies.

The reasons for the conspicuous sex differences in the intervertebral disk lesions in Mastomys are not apparent. A comparable situation exists in bovines, and has been attributed to the copulatory stresses of the bull (Thomson, 1965). Osteo-arthritis of the knees is consistently greater in male than in female mice, and a number of hypotheses have been offered to account for this (Sokoloff and others, 1965). These include a sexual dimorphism of the pelvis and femur in mice. The greater length of the femur in female mice than in males has been reaffirmed in the
DEGENERATIVE JOINT DISEASE

present study. It was not so evident in *Mastomys* (Table IV); nor was there a sex difference in the lesions of the knee. Sex differences in bone length are not confined to the femur. A slightly greater tail length in female rats previously reported by others (Donaldson, 1924) was again observed here. It also was present in *Mastomys*. Stress, induced by fighting, has been reported to increase the relative size of the nucleus pulposus in the Orkney vole (Chitty, Chitty, Leslie, and Scott, 1956). *Mastomys* are ill-tempered animals; it is conceivable that an analogous mechanism is operating in the development of its spinal disease.

**Summary**

In *Praomys* (*Mastomys* natalensis), severe degenerative joint disease of diarthroses and intervertebral disks develops regularly during the second year of life.

Virtually all peripheral articulations, with the exception of the hips, shoulders, and sacro-iliacs are affected, but the elbows and the knees most so. Protrusion of degenerated disk tissue into the spinal canal occurs in multiple segments of the spinal column, particularly in males. In older animals, it sometimes results in degenerative changes in the cauda equina, and occasionally in paraplegia. Among laboratory rodents, *Mastomys* is the species, with the exception of a single strain of inbred mice (STR/IN), most susceptible to osteo-arthritis.

We are indebted to Mr. Edward J. Soban, Mrs. Priscilla Auvil, and Mr. Kenneth Cullen for capable technical assistance; and to Dr. I. Zipkin for use of the dermestid beetle facility of the National Institute of Dental Research. Mrs. Gertrude Turner made the skillful drawings.

**REFERENCES**


ANNALS OF THE RHEUMATIC DISEASES


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**L’arthropathie dégénérative chez le *Praomys natalensis***

RÉSUMÉ

Une arthropathie dégénérative sévère touchant les diarthroses et les disques intervertébraux se constitue régulièrement durant la seconde année de la vie chez les animaux de l’espèce *Praomys* (*Mastomys*) natalensis. Pratiquement toutes les articulations périphériques à l’exception des hanches, des épaules et des sacro-iliaques sont affectées mais avant tout les coudes et les genoux. La substance des disques frappés de dégénérescence fait saillie dans le canal rachidien en de nombreux points du rachis, particulièrement chez les mâles. Chez les animaux plus âgés il en résultent parfois des lésions dégénératives de la queue du cheval et même des paraplégies. Parmi les rongeurs utilisés comme animaux de laboratoire, l’espèce *Mastomys* est celle qui est la plus sujette à l’ostéarthrose, à l’exception d’une seule souche consanguine de souris (STR/IN).

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**Artropatía degenerativa en *Praomys natalensis***

SUMARIO

Una arthropatía degenerativa grave afectando las diartrosis y los discos intervertebrales se desarrolla regularmente durante el segundo año de vida en los animales de la especie *Praomys* (*Mastomys*) natalensis. Virtualmente todas las articulaciones periféricas, con la excepción de las caderas, hombros y sacroilíacas, son afectadas pero los codos y las rodillas lo son particularmente. El tejido de los discos degenerados protruye en el canal vertebral en numerosos segmentos, particularmente en machos. En animales más viejos se producen a veces cambios degenerativos en la cola de caballo y, a veces, paraplejas. Entre los roedores de laboratorio la especie de los *Mastomys* es la más susceptible a osteoartrosis, con la excepción de una sola cepa de ratones consanguíneos (STR/IN).
Degenerative joint disease in Praomys (Mastomys) natalensis.

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