The femur was the strong, heavy and massive bone of the appendicular skeleton. It was studied and was compared with that of African elephants but differed in several aspects from that of domestic animals. The intertrochanteric crest which connects the greater and lesser trochanter in domestic ruminants was absent. This finding is similar to that of Malle and Bezuidenhout (1994) who reported that intertrochanteric crest was absent in the femur of African elephants. The distal extremity comprised a trochlea cranially and two condyles caudally. Unlike in ruminants the medial supracondyloid tuberosity, supracondyloid fossa and extensor groove were indistinct. The present study indicated that most of the gross anatomical features of the femur of Asian elephants were similar to that of African elephants but differed in several aspects from that of domestic animals.

Keywords: Asian elephant, femur, gross anatomy

1. Introduction
Elephants are the largest land animals. Asian elephant is the only living species of the genus Elephas. Femur bones form the massive skeleton of the thigh. It not only acts as the supportive lever but also helps for the forward propulsion of the body. Literatures pertaining to the femur of Asian elephant are scanty. Hence the study was undertaken.

2. Materials and Methods
The gross anatomical study was conducted on three femurs of Asian elephants preserved for academic purpose in the museum of Department of Veterinary Anatomy and Histology, College of Veterinary and Animal Sciences, Mannuthy, Thrissur. Morphology of the femur was studied and was compared with that of African elephant and domestic animals.

3. Results and Discussion
The femur was the longest bone of the appendicular skeleton. It was strong, heavy and comprised of a cylindrical shaft with proximal and distal extremities (Figs. 1 & 2). It articulated with acetabulum to form hip joint and with tibia, fibula and patella below to form stifle joint.

3.1 Shaft
The shaft was flattened cranio-caudally and presented two surfaces viz. cranial and caudal and two borders viz. medial and lateral. This finding is similar to that of Asian elephant calves (Mariappa, 1986) [4]. The cranial surface was flattened at the proximal one third and convex at distal two thirds (Fig. 1). Unlike in large ruminants the caudal surface was flat, smooth and narrow at middle (Fig. 2). The medial border was rounded and its proximal end presented a rough area representing the lesser trochanter (Fig. 4). Lateral border was smooth and straight. The intertrochanteric crest which connects the greater and lesser trochanter in domestic animals was absent. This finding is similar to that of Malle and Bezuidenhout (1994) [5] who reported that intertrochanteric crest was absent in the femur of African elephant.

3.2 Proximal Extremity
The proximal extremity comprised of head and greater trochanter (Figs. 3, 4). Medially located head was smooth and hemispherical (Figs. 1, 2).
The fovea capitis seen in the head of femur in African elephants and domestic animals could not be noticed. The trochanter major formed lateral part of the proximal extremity of the femur (Fig. 3). It was placed laterally and below the level of the head similar to that of African elephants (Malle and Bezuidenhout, 1994) [3] and that in cats and man (Dyce et al., 2010) [1]. In case of horse and ox it was placed above the level of head, but in dog and pig greater trochanter and head were in the same level (Nickel et al., 1986). Caudomedial aspect of the greater trochanter furnished the trochanteric fossa (Fig. 4). The greater trochanter continued on the cranialateral aspect of shaft as ridge like trochanter tertius as in African elephant (Malle and Bezuidenhout, 1994) [3] while in the case of horse it was seen as a process (Koing and Liebich, 2014) [2].

3.3 Distal Extremity

The distal extremity comprised a trochlea cranially and two condyles caudally (Fig. 6). The trochlea was vertical and its lips were of equal height (Fig. 5). As in large ruminants the oval shaped medial condyle was larger than the elliptical lateral condyle (Dyce et al., 2010) [1]. The condyles were separated by the deep intercondylar fossa. Medial supracondylar tuberosity, supracondylar fossa and extensor groove were indistinct.

### References