

mental images of, that portion of the body ; and attention, in its turn, means in most cases movement of the part of the body attended to. If one thinks hard of one's knee, or foot, *e. g.*, one will obtain a surprisingly intensive and insistent mass of cutaneous and organic sensations of which one was previously unconscious, or at best but very dimly conscious ; while, at the same time, there is an actual twitching or bracing of the knee or foot, which sets up new sensations. Any part of the body will thus yield up its quantum of unpleasant sensation, if only for some reason the attention can be continuously held upon it, to the exclusion of other topics. The 'feeling of Must' in the present case is no more mysterious than is the 'feeling of Must' that prompts us to shift our position in a chair, when the distribution of pressures has become uncomfortable, or to turn our better ear to the sound that we wish particularly to observe.

(5) In conclusion, I may state that I have tested this interpretation of the 'feeling of being stared at,' at various times, in series of laboratory experiments conducted with persons who declared themselves either peculiarly susceptible to the stare or peculiarly capable of 'making people turn round.' As regards such capacity and susceptibility, the experiments have invariably given a negative result ; in other words, the interpretation offered has been confirmed. If the scientific reader object that this result might have been foreseen, and that the experiments were, therefore, a waste of time, I can only reply that they seem to me to have their justification in the breaking-down of a superstition which has deep and widespread roots in the popular consciousness. No scientifically-minded psychologist believes in telepathy. At the same time, the disproof of it in a given case may start a student upon the straight scientific path, and the time spent may thus be repaid to

science a hundredfold. The brilliant work of Lehmann and Hansen upon the telepathic 'problem' (*Philos. Studien*, 1895, XI., 471) has probably done more for scientific psychology than could have been accomplished by any aloofness, however authoritative.

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#### WHAT IS *SCIURUS VARIEGATUS ERXLEBEN*?

WHILE working out the synonymy of the Mexican squirrels I have had occasion to consult the much quoted *Historiæ Animalium Novæ Hispaniæ* of Fernandez, edition of 1651. The descriptions of birds and mammals in this work have served as the basis for many species named by succeeding authors whose vagueness of description and lack of definite information concerning the geography and animal life of Mexico have resulted in great confusion. At the time when Fernandez made his observations the main area of Spanish occupation in Mexico was the southern end of the Mexican tableland, about the valley of Mexico, and thence eastward across the plains of Puebla, through the Cordillera (crowned by the peaks of Orizaba and Cofre of Perote) to the hot lowlands of Vera Cruz. For several seasons zoological explorations have been conducted in this area by the writer, who, as a result, has become familiar with the topography and resident species of birds and mammals. In the light of this knowledge it is possible to identify, with certainty, many of Fernandez's species, for example his *Quauhtecallotlquapachtli* or *Cozticocotequallin*.\*

In 1777 Erxleben, in his *Systema Regni Animalis*, Mammalia, p. 421, named this animal *Sciurus variegatus*. Since Erxleben derived his information from Fernandez it becomes necessary to learn what the latter says. Following is the translation of Fer-

\* *Hist. Animalium*, p. 8.

nandez's description: "The second is called *Quauhitecallotlquapachtli* or *Cozticotequallin* from the yellow color of the belly; it grows nearly twice the size;\* in color is white, black and brown mixed, except the belly, which is pale or fulvous; it has a very long and hairy tail, with which it sometimes covers itself. It lives in holes in the ground and in enclosed hollows, in which it also rears its young. It feeds on Indian corn, which, taken from the fields, it stores up for winter. It is agile like the others, never becomes tame or lays aside its natural wildness."

The vague ideas prevailing among writers regarding the animal described by Fernandez and Erxleben is evident when it is known that at least twelve well-marked species and sub-species of American squirrels have been referred to it. These squirrels represent species having distinct ranges, lying between the Carolinas in the United States and Honduras in Central America. Since the species was named by Erxleben it has been uniformly treated by authors as a true *Sciurus*. Now let us see what foundation there is for treating this species as a true squirrel. Erxleben places it under his *Sciurus*, but, as he covers in this genus several genera now considered distinct, this furnishes no guarantee of its actual generic position. It is true that he quotes as a synonym the *Coquallin* of Buffon, but this merely shows that, in naming the animal of Fernandez, Erxleben had no very definite idea of it. Erxleben's description, evidently quoted from Fernandez, is as follows: "Magnitudine dupla *S. vulgaris*. Auriculæ imberbes. Corpus supra nigro, albo et fusco variegatum, ventre flavescens. Cauda supra corpus reflexa." This description might easily refer to a *Sciurus*, but when the author adds the fol-

lowing notes, viz., "Habitat in Mexico. Subterraneus parit, cibumque colligit pro hieme. Edit Zeam. Non mansuescit." it is evident that he is describing a *Spermophilus*.

I think it may be positively stated that no Mexican *Sciurus* has the habits of the animal described by Fernandez. The *Spermophilus macrourus* of Bennett and later authors is an abundant resident throughout the part of the tableland familiar to Fernandez. It is conspicuous about farms, and agrees in habits and colors with the animal described by Fernandez and quoted by Erxleben, and again described by Lichtenstein as *Sciurus buccatus* (Abh. k. Akad. Wiss., Berlin, pp. 115, 117 (1827), 1830). This being the case, it is difficult to see how there can be any reasonable doubt that the *Quauhitecallotlquapachtli* of Fernandez, the *Sciurus variegatus* of Erxleben, *Sciurus buccatus* of Lichtenstein and *Spermophilus macrourus* of Bennett are one and the same animal. Consequently the large, bushy-tailed *Spermophilus* of the Mexican tableland becomes *Spermophilus variegatus* (Erxleben) and stands as the type of the group to which belong *S. couchi* and *S. grammurus*, which are probably races of this species. It was probably about the border of the Valley of Mexico, near the City of Mexico, that Fernandez became familiar with this animal, and we may, therefore, consider this as the type locality.

NOTE: *Spermophilus mexicanus* (Lichtenstein) is the only other common and widely spread species of *Spermophilus* on the southern end of the Mexican tableland and it is readily recognizable as the *Techallotl* of Fernandez.

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#### NOTES ON PHYSICS.

##### TRANSFORMER DESIGN.

A PAPER by F. W. Carter read before the November meeting of the American Institute of Electrical Engineers gives, for the

\* The context shows that this must refer to the author's *Techallotl*, which is *Spermophilus mexicanus* (Licht.).