succeed in his attempt on *π*; but in 1882 Lindemann, following exactly in Hermite’s steps, accomplished the desired result.@@1 Mathematicians are agreed that the full demonstration leaves something to be desired in the matter of simplicity, and attempts at simplification have already been made by Markoff and Rouché.@@2

Besides the various writings mentioned, see for the early history of the subject, Montucla, *Hist. des Math.,* 6 vols., Paris, 1758, 2d ed. 1799-1802 ; Murhard, *Bibliotheca Mathematica,* ii. pp. 106- 123, Leipsic, 1798 ; Reuss, *Repertorium Comment.,* vii. pp. 42-44, Gottingen, 1808. For a few approximate geometrical solutions, see Leybourn’s *Math. Repository,* vi. pp. 151-154; *Grunert's Archiv,* xii. p. 98, xlix. p. 3; *Nieuw Archief v. Wisk.,* iv. pp. 200-204. For experimental determinations of π, dependent on the theory of prob­ability, see *Mess. of Math.,* ii. pp. 113, 119 ; *Casopis pro pǐstování math. a fys.,* X. pp. 272-275 ; *Analyst,* ix. p. 176. (T. MU.)

SQUASH *(Cucurbita Melοpepo).* See Gourd.

SQUILL, the name under which the bulbous root of *Urginea maritima,* Baker, is used in medicine. The plant was formerly placed in the genus *Scilla,* from which it has been separated because the seeds are flat and discoid in­stead of triquetrous, as in the latter genus. The name of “ squill ” is also applied by gardeners to the various species of *Scilla.* The medicinal squill is a native of the countries bordering the Mediterranean, and grows from the sea-level up to an elevation of 3000 feet. The bulbs are globular and of large size, often weighing more than 4 lb. Two varieties are met with, the one having white and the other pink scales. They are collected in August, when they are leafless, the membranous outer scales being removed and the fleshy portion cut transversely into slices and dried in the sun. These are then packed in casks for exportation. They are chiefly imported into the United Kingdom from Malta. When reduced to powder and exposed to the air the drug rapidly absorbs moisture and cakes together into a hard mass. Squill has been used in medicine from a very early period. The ancient Greek physicians pre­scribed it with vinegar and honey almost in the same manner as it is used at present. Its medicinal properties are expectorant and diuretic. It is chiefly prescribed in bronchitis when the phlegm is tenacious and expectorated with difficulty, and in cardiac dropsy. When given in large doses it acts as an irritant poison, and its use is therefore contra-indicated in active inflammatory conditions of the mucous membrane or of the kidneys. The fresh bulb rubbed on the skin causes redness and irritation, due in part to the presence of minute crystals of oxalate of calcium.

The activity of the drug appears to be due to the active principles, scillipicrin, scillitoxin, and scillin, which were first obtained by Merck in 1878. The first has a bitter and burning taste, powerfully irritating the mucous membrane of the nose. It is soluble in alcohol and ether and partly in alkalis, but insoluble in water ; if mixed with sugar it dissolves readily and can then be absorbed if injected subcutaneously. Scillitoxin is hygroscopic, very soluble in water, and has a bitter taste. These two principles have an action on the heart resembling that of *Digitalis* ; in large doses the former stops its action in systole and the latter in diastole. Scillin is crystalline, tasteless, and soluble in alcohol, though only with difficulty in water. It is present only in very small quantity in squill, and appears to be the cause of the subsidiary effects of that

drug, such as vomiting, &c.

An allied species, *Urginea indica,* Baker, is used in India in the same manner as the European species. The true squills are repre­sented in Great Britain by two species, *Scilla autumnalis* and »S'. *verna.* The former has a racemose inflorescence ; the latter has the flowers arranged in a corymbose manner, and is confined to the sea­coast. Several species are cultivated in gardens, »S'. *bifolia* and *S. sibirica* being remarkable for their beautiful blue flowers, which are produced in early spring. The name of Chinese squill is applied by gardeners to *Barnardia scilloides* and that of Roman squill to species of *Bellevalia.*

SQUINT. See Ophthalmology, vol. xvii. p. 785.

SQUIRREL. In the article Marmot (vol. xv. p. 559) an account was given of the three genera forming the

@@@1 See “ Ueber die Zahl *π*,” in *Math. Annalen,* xx. p. 213.

@@@2 *Nouv. Annales,* 3d ser., ii. p. 5.

*Arctomyina,* or Marmot sub-family of the large family *Sciuridæ,* and in the present article the members of the other and more typical sub-family, the *Sciurina,* are noticed. The systematic position of the *Sciuridæ* as a whole and their relations to other rodents are shown in the article Mammalia (vol. xv. p. 418); so it is merely with the component genera of the group that we now have to deal.

Of the *Sciurina* six genera are commonly recognized, the first being the typical one, *Sciurus,* in which the common English squirrel is included. The characters of the genus are—form slender and agile ; tail long and bushy; ears generally well developed, pointed, often tufted ; feet adapted for climbing, the anterior pair with four toes and a rudimentary thumb, and the posterior pair with five toes, all the toes having long, curved, and sharp-pointed claws; mammæ from four to six in number ; skull (see fig. 1) lightly built, very similar in

shape throughout the genus ; post-orbital processes long and curved ; incisors narrow and compressed ; premolars either one or two above and one below; when two are present above, the anterior one is quite minute and very different from the corresponding tooth in the marmots ; molars three on each side above and below.

True squirrels are found throughout the greater part of the tropical and temperate regions of both hemispheres, although they are absent both from Madagascar and the Australian region. The species are both largest and most numerous in the tropics, and reach their greatest develop­ment in the Malay parts of the Oriental region.

Squirrels vary in size from animals no larger than a mouse, such as *Sciurus soricinus* of Borneo, or *S.* *minu­tus* of West Africa, to others as large as a cat, such as the black and yellow *S. bicolor* of Malaysia (see fig. 1). The very large squirrels, as might be expected from their heavier build, are somewhat less strictly arboreal in their habits than the smaller ones, of which the common English species may be looked upon as typical. The Common Squirrel, »S'. *vulgaris,* whose general habits are too well known to need special description, ranges over the whole of the Palæarctic region, from Ireland to Japan, from Lapland to North Italy ; but specimens from different parts of this wide range differ so much in colour as to have been often looked upon as different species. Thus, while the common squirrels of north and west Europe are of the bright red colour we are accustomed to see in England, those of the mountainous regions of southern Europe are nearly always of a deep blackish grey ; those from Siberia again are a clear pale grey colour, with scarcely a tinge of rufous. These last supply the squirrel fur used for lining cloaks. The pairing time of the squirrel is from February to April, and after a period of gestation of about thirty days it brings forth from three to nine young. In addition to all sorts of vegetables and fruits the squirrel is exceedingly fond of animal food, greedily devouring mice, small birds, and eggs.

Although the English squirrel is a most beautiful little