

and Stockton plateaus. As the stream emerges from this it empties into the Rio Grande. Flow of the Pecos is regulated by two reservoirs. The Alamogordo at Fort Sumner, with a storage capacity of 122,100 ac.ft., was completed in 1938. The El Estero dam near Lakewood, N.M., stores 38,660 ac.ft. and was completed in 1906. About 150,000 ac. are irrigated from the Pecos. Pecos tributaries include the Hondo, Gallinas, Felix, and Black rivers, all in New Mexico. Santa Rosa, Fort Sumner, and Carlsbad, N.M., and Pecos, Tex., are important towns near the river.

PECS (Ger. FÜNFKIRCHEN), one of the oldest and most important towns of Hungary and capital of Baranya megye (county), lies on the southern edge of the Mecsek Mountains, 220 km. SSW of Budapest by rail. Pop. (1967 est.) 200. The earliest occupation of this site was by the Illyrians and by the Celtic tribes known as Pannonians. The Romans had a settlement there called Sopiana. In the early Middle Ages the town became known as Quinque Ecclesiae ("five churches"), and in 1009 Stephen I made it a bishopric. The town has a well-developed rectangular core of medieval origin surrounded by suburbs. The Romanesque cathedral dates from the 11th century although it was much restored in 1881-91. The Turks held Pécs from 1543 to 1686; traces of their rule remain; e.g., in the parish of "hospital" churches, once mosques. The 14th-century university, the earliest in Hungary, perished with the Turkish conquest, but was newly founded in 1922. In the 18th century German colonists entered the city and German miners came to work the coal seams. The rapid rise of population in the 20th century (10,000 in 1920) was mainly due, however, to a big intake of Hungarian peasants. The economic importance of Pécs comes from the proximity of the biggest and richest coal mines in Hungary. Local industries include the making of leather goods and majolica, and the surrounding vineyards are some of the best in Hungary. The town has good rail and road connections. (H. G. S.)

PECTIN, the commercially concentrated extract of a group of pectic substances found in the cell walls and intercellular spaces of certain plant tissues. Chief use of commercial pectin is in the preparation of jellies, jams, and marmalades but its property of forming thick solutions gives it numerous uses in the food, confectionery, pharmaceutical, and textile industries.

Pectic substances consist of an associated group of three polycarbohydrates: an arabinan, which on acid hydrolysis yields L-arabinose; a galactan, giving D-galactose on hydrolysis; and, most important for the physical properties of these substances, a pectic acid whose carboxyl groups are in part esterified with methanol and in part neutralized as salts of calcium and magnesium. Pectic acid is a polysaccharide in which units of D-galacturonic acid are linked in α -D-(1 \rightarrow 4) linkages (see CARBOHYDRATES). The calcium salt of pectic acid is water insoluble and in the maturation of tissues, as in the ripening of fruits, complex enzymic changes occur in which the calcium salts are converted, in part, to methyl ester groups. The pectic substances are extractable with warm aqueous solutions of dilute acids. The extract may then be concentrated and sold as a liquid or converted to a powder. The product is known as pectin. The chief sources of commercial pectin are citrus waste and apple pomace. Sugar beet cossette (chip) is employable and makes a usable product after suitable modification to remove an acetate ester group present.

Pectin forms a viscous aqueous solution and in the presence of acids, such as those of fruits, and added sugar, this solution will produce a jelly. Very small amounts (less than 1%) of pectin will suffice. It has been found that if the methyl ester (methoxyl) content is decreased, less sugar is required to give a gel which is formed by the addition of calcium ions.

See also FOOD PRESERVATION (IN THE HOME): *Jams and Jellies*.
BIBLIOGRAPHY.—E. L. Hirst and J. K. N. Jones, *Advances in Carbohydrate Chemistry*, 2: 235-251 (1946); K. H. Meyer, *Natural and Synthetic High Polymers* (1950); Z. I. Kertesz, *The Pectic Substances* (1951); R. L. Whistler and C. L. Smart, *Polysaccharide Chemistry* (1953); W. W. Pigman (ed.), *The Carbohydrates* (1957).

PEDERSEN, CHRISTIERN (c. 1480-1554), Danish humanist, one of the first to rediscover Denmark's national literary

and historical heritage and to encourage the development of a vernacular style. Born near Helsinki (Helsingfors), he studied at Greifswald and took orders in 1505. In 1508 he went to Paris and there produced the first edition (now lost) of Saxo Grammaticus' *Gesta Danorum*, under the title *Historia danica* (1514). He also edited Peder Laale's proverbs and published a Latin-Danish lexicon. Returning to Denmark, he supported the Reformation and became secretary to Christian II, following him into exile in 1525. In Holland he translated, from the Vulgate, part of the New Testament (1529) and the Psalms (1531) and also adapted some of Luther's tracts. In 1532 he set up as a printer at Malind, publishing Danish versions of French romances and the legends of Charlemagne. He had a share in the translation of the Bible published in 1550 as "Christian III's Bible," and based on Luther's translation, which marked an important stage in the development of Danish literature as well as in the progress of the Reformation. He died on Jan. 16, 1554, in Helsingø.

See Pedersen's *Danske Skrifter*, ed. by C. J. Brandt and B. T. Fenger, 5 vol. (1850-56).

PEDERSEN, HOLGER (1867-1953), Danish linguist of exceptional competence in a number of fields, especially Celtic, was born at Gjelballe, near Lunderskov, on April 7, 1867. After receiving his doctorate in 1897 with a masterly dissertation (*Aspirationen i Irsk*) he proceeded, while professor at Copenhagen, to enrich linguistic scholarship with an incredible number of articles and books, all highly original. Nurtured in the exacting methodology of the 19th century neogrammarian (*q.v.*) movement, he went far beyond its limits and was either participant in, or critic of, most succeeding schools of linguistic thought; he even anticipated some new trends, but conscientiously avoided frills and fads.

The results of Pedersen's Celtic researches are contained in numerous articles and in his monumental *Vergleichende Grammatik der keltischen Sprachen*, (2 vol., 1909-13), also his *Concise Comparative Celtic Grammar* (with Henry Lewis, 1937). About 30 books in four languages (Danish, English, French, German) treat authoritatively Albanian, Armenian, Russian, Indo-European dialects, Lithuanian, Hittite, Tocharian, Czech, Turkish phonology, the relations between Indo-European and Semitic, between Indo-European and Finno-Ugric, the origin of runes, and the history of linguistic science. Holder of honorary degrees in nine countries and recipient of countless other scholarly honours, Pedersen closed a long and fruitful career in Copenhagen, where he died on Oct. 25, 1953. (R. A. Fs.)

PEDERSEN, JOHANNES PEDER EJLER (1883-), Danish Old Testament scholar and Semitic philologist, important for his conception of Israelite culture and modes of thought based on religio-historical and sociological studies, was born on Nov. 7, 1883, at Illebolle on the island of Langeland. He matriculated at the University of Copenhagen in 1902 as a student of divinity. The Old Testament in particular aroused his interest, and he studied Semitic languages under Frants Buhl. A graduate in divinity (1908), he went abroad for three years, studying under Heinrich Zimmern, August Fischer, Christian Snouck Hurgronje, and Ignaz Goldziher. He was appointed docent in Old Testament exegesis at Copenhagen (1916-22) and then professor of Semitic philology (1922-50) in succession to Buhl. His doctoral thesis (1912) showed him to be an eminent philologist with an exceptional ability to enter into the spirit of the ancient Oriental trains of thought.

These qualities are even more pronounced in his chief work, *Israel: Its Life and Culture*, in four volumes (1926-34; Eng. trans. 1926-40). These studies of ancient Israel marked a new departure in Scandinavian Old Testament research. Pedersen's conception of the importance of the cult led in many aspects to a break with Julius Wellhausen and his school, especially in his estimation of the narratives and the laws in the Pentateuch as sources for the history of Israel. (E. Hb.)

PEDIATRICS: see CHILDREN, DISEASES OF; INFANTS, CARE OF.

PEDIMENT, in architecture, is a triangular gable end treated in classical style and crowned with a raking cornice; or a similar

AKIKI, Necip. "el-Müsteşrikün"

II c., s. 526-529, 1980 (KAHIRE)

بدرسين ، ه . - Pedersen, H.

آثاره : دراسات عن اللغتين الأرمنية والتركية (١٩٠٦) ، واللغات السامية (١٩٠٧) ،
ورسم الكتابات الحبشية في مكتبة أوبسالة مع شرحها (مجلة الجمعية الشرقية الألمانية ،
مجلد ٥٣) ، وتعليق على الترجمة اليهودية الفارسية لحكم بنيامين بن بوجاقان من بخارى
(المرجع السابق ، مجلد ٥٤) ، ومجموعة الكتابات اليهودية والإيرانية في مكتبتى أوبسالة ،
ولوند (١٩٠٠) ، واستدراكات على المخطوطات العربية المتعلقة بتاريخ السلاطين الماليك من
٦٩٠ إلى ٧٤١ هـ ، وأمثلة على الكلمة العربية قعن أو قعر أو كعر ، وصيغة المذكر (مجلة
الشمال ، الباب الثالث) ، والمعجم القديم للألسنة النوبية (مجلة العالم الشرقى) ، وتقرير عن
المخطوطات التي خلفها تولبرغ في مكتبة أوبسالة (مجلة العالم الشرقى) ، والأدبيات الصوفية
(فرمانده) ومخطوطات عبرية في تاريخ الهجرة (مجلة العالم الشرقى) ، ومطالعات في مذهب
إسلامى بالإسبانية وأحرف عربية ولا تينية (الذكرى المثوية لامارى ، بالرمو ١٩١٠) ،