

bishop was in those days classed well up among the dangerous trades. The Cathedral has fine carved choir stalls and a good statue of St. Francis by Giovanni Dupre but its Romanesque facade, with three rose windows and its solid campanile, are most worth attention. The baptismal font is the original one in which St. Francis, St. Clare and the Emperor Frederic II were baptised.

From St. Rufinus it is but a short walk down the hill to St. Chiara, dedicated to St. Francis' disciple, St. Clare, founder of the Poor Clares or female Franciscans, whose devotion to the Franciscan ideal of poverty caused acute embarrassment to the church authorities until time and commonsense moderated the ladies' apostolic ardour. St. Chiara was built in 1260, a few years after the death of St. Clare, on the same plan as the Upper Church of St. Francis. Its frescoes are somewhat faded, and the chief point of interest is the miraculous crucifix which is said to have spoken to St. Francis at the Church of

St. Damian, bidding him go and restore Christ's crumbling Church. This crucifix is not on show and one must ask the sacristan to unlock it.

This exhausts the main points of interest of the town but the energetic may walk up the hill to the old Suanbian castle, the Rocca Maggiore. The present castle dates only from 1367 but it is based on foundations of a much older one destroyed by the Assisians in 1298. The view from its tower is well worth the climb.

Those who have taken their time in making the tour here described have probably used up their day, but the pilgrim, as distinct from the sightseer, should not go without visiting St. Damian's, the little church ten minutes from the Porta Nuova, where St. Clare founded her first convent. It is now occupied by the Brown Friars and its simple and unpretentious stones reflect the simplicity of St. Francis and preserve his spirit far better than the over-magnificent Basilica formally dedicated to his name.

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## SCIENCE IN WORK AND PLAY

Chromium plating of machine tools by a newly discovered oil bath process increases their life from three to fifty times.

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Smokeless locomotives, which will mean cleaner railway stations, tunnels and sidings, may become universal as the result of new air jet installations that cause unburned gases in the fire-box to ignite rather than wastefully going up the chimney in smoke.

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By reversing variable pitch propellers on an aircraft their propulsive force may be directed backward making them serve as air brakes.

A new manufacturing method that will substitute sugar and water for the usual hard core of golf balls has been devised by an American company. The liquid cores are claimed to be superior to the normal type and will not solidify even at low temperatures.

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A mammoth 35-ton robot calculator installed in a Harvard University basement, will solve almost any problem in applied mathematics—with results to 23 decimal places. The nerve centre of this mathematical wizard contains over 500 miles of electrical wiring and there are two million connections. It took six years to build and cost over £50,000.