properties of the hop chiefly reside in the "soft resins," which are differentially soluble in petroleum ether. These valuable constituents are extremely susceptible to chemical change, and readily lose their antiseptic properties. Cold storage appears to be the best practical method of retarding this change and maintaining the preservative properties of hops in the store.

The space at our disposal does not permit a full discussion of these various points, and we put them forward merely as suggestive of the line of progress which is bound up in the future prosperity of the hop-grower.

STOCK BREEDING.

The inferior quality of stock one sees in passing through the country is plain evidence that the farmer does not consider the laws of breeding in his work and does not know their relation to the practice of agriculture. It has always been so in those countries where cereals grow luxuriantly. In such countries the opinion is frequently expressed that "live stock does not pay." That this is not true was pointed out to the farmers of Rome in the first century by Columula. Early English writers on agriculture also pointed out the same truth. Fitzherbert, in his "Boke of Husbandry (1532) says: "An husbande cannot well thryve by his corne without se have other cattall, nor by his cattall without corne, for els he shall be a byer, a borrower or a beggar." Stock raising must go hand in hand with grain growing to attain the highest success. Agricultural writers and stockmen are of one opinion on this point. Stock-keeping forms the true basis of successful farming. What is known to-day about stock breeding is based on the lines followed by successful stockmen who have found out their knowledge through patient study of experiments, aided by observation. The laws of breeding as thus formed are not theoretical but the result of practical experience, and are therefore worthy the study of the farmer and stock breeder of to-day.

"The object of the art of breeding is the improvement of animals in those qualities that have a definite value, among which are the production of meat, milk, wool and labor." Breeders have found it easier to develop and obtain the highest development of only one of these qualities, because there the combined energies all tend in one direction. Too often one quality has been developed by breeders at the expense of other good qualities which they did not deem of importance. There are a very large number of breeders who hold that the development of two or more qualities in a marked degree in one animal is not impossible. It is certainly not against the known laws of breeding. It is possible to obtain them in a marked degree. The highest development will always be where improvement is attempted with only one character.

The art of breeding our common farm stock is something that requires more study and thought than is generally given to it. There is not a clear enough conception in the mind of the farmer of what he wants, i.e., of the type of stock he should keep, much less of the means to be employed in obtaining the desired end. Robert Bakewell, of Dishley Grange, Leicestershire, England, seems to have grasped the true meaning of breeding. He was the first man to form a definite idea of the type of animal he wanted to produce. Combined with this he seems to have had a clear insight into the proper methods to follow to obtain his ideals."

GREAT CROPS IN NEW ZEALAND.

If New Zealand farmers can grow such crops as are recorded in the following report, which has appeared in the *Sydney Mail*, it is a wonder that they do not increase their corn acreage: "There are some very heavy yields in the Tai Tapu district, New Zealand, this year. Mr. Cooney, M'Queen's Bay, off 150 acres all-round crop averaged 70 bushels to the acre. Mr. Thomas Macartney had 5,800 bushels of barley off 80 acres, one paddock of 15½ acres yielding 95 bushels per acre. Mr. Taylor-Hunter had 103 bushels of barley per acre on 12½ acres; Mr. G. L. Limbrick had 65 bushels of barley and his yields would have been much better only for the caterpillars. Mr. Thomas Leathem has 100 acres of magnificent crops of barley, wheat and oats on his Swamp Farm, which is estimated to yield over 100 bushels per acre, and on his Greenpark Farm he has threshed 70 bushels of barley per acre off 30 acres. Mr. George Witte has threshed 80 bushels of wheat off his large paddock." Such yields have very rarely obtained even in this country, though we have heard of 100 bushels per acre of Rivett's wheat.