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United States Imports of Specialty Produce: An Importer's Perspective

by

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Statement of Problem

In 1987 supermarket produce sales reached an all-time high of \$39 billion dollars [7]. Fresh produce now represents between 8.7 and 9.5 percent of total supermarket sales, but it provides 20.9 to 26.8 percent of store net profits [12]. The share of produce sales represented by tropicals, exotics, or specialties is presently difficult to ascertain, but they are becoming more prominent on supermarket shelves. Though the three terms are at times used interchangeably, it is important to point out the differences. Tropical products are those which can only be grown in tropical climates--carambola or star fruit, lychee, cherimoya, or limes are examples. Exotics can include tropicals, but also include other non-tropical products which are commercially grown *outside* the United States--prickly pear, tomatillos, asian pear, as examples. Specialties include both tropicals and exotics, but can also include such items as domestically grown herbs, mushrooms, or quince. As far as the produce trade is concerned, specialties are those products which have small sales volume; "exotics" is principally used by retailers as a merchandising term for displays of such products; and tropicals are highly perishable products which are generally imported. All

three are low volume products within the produce industry. In this paper, the term specialties will be used because it encompasses the other two.

Today, during any week of the year most supermarkets display produce that just ten years ago most consumers had not seen--let alone knew how to eat or use. A typical supermarket displays 58 fresh fruits and 85 vegetables and a number of them are specialty products [12]. Recent articles describing the growth of specialty produce in the supermarket industry point to greater diversity. Some examples are: Edel [3], Gilbert [4], McClure [8,9], and McLaughlin [10]. All indicate that the demand for specialties will most likely continue to increase and therefore more will be seen in the produce section of supermarkets. The combination of an increasing Hispanic population (currently nearly 20 million), consumer preferences for greater produce variety, the general increase in demand for fresh fruits and vegetables, and the nutritive qualities of some specialties will continue to fuel demand.

As with any changing industry, new developments require new insights and analysis. The increased demand for specialty products is

one such change taking place in the produce business. Since many specialty products are grown outside the United States, information regarding specialty product imports is valuable because so little information is currently available.

Objectives

How the market distribution system responds to the increased demand for specialty products will affect the effectiveness and efficiency of the markets. To achieve efficiency in market performance, one needs to first have an understanding of what has led to the increased demand. Therefore, one objective of the research is to describe and analyze the growth in demand for specialty products. The second, and main objective, is to ascertain the structure, distribution, and scope of the specialty products import industry. And, the third objective is to provide an analysis of the data gathered with possible implications for specialty product handlers and researchers.

Before proceeding, the *Federacion Nacional de Cafeteros de Colombia* (National Federation of Colombian Coffee Growers) is acknowledged for their generous financial support to carry out this research. The Federation is interested in orienting some of their member growers to fruit production rather than increasing coffee production. To that end, they are interested in baseline information regarding specialty product imports into the U.S. market.

Methodology

A literature review was conducted to determine the possible causes of increased demand for specialty products. Data were obtained from various sources to identify variables influencing demand. In addition, import statistics for various specialty products were gathered and are presented to support the increased demand assertions.

To obtain primary data from importers, a survey questionnaire was drafted, reviewed, pre-tested, and mailed to 443 firms. The cover letter of the survey guaranteed strict confidentiality of the respondent. The mailing list was established from: *The Red Book* [16], "The Seventh International Trade Directory of the Fresh Fruit and Vegetable Industry" in *Outlook* [14], *The Thomas Grocery Directory* [13], and *The Directory of U.S. Importers* [5]. The questionnaire was mailed in the fall of 1988; after the initial mailing a reminder letter was sent. After another week, a second questionnaire was

sent to firms who had not responded and was followed by a reminder letter after two weeks. The questionnaires were culled for inadequate responses (i.e., very few questions answered) and the data were analyzed via a computer software package. Table 1 presents the questionnaire return rate, the percentage of useful responses, and the regional distribution of importing firms.

The survey targeted four products: artichokes, asparagus, limes, and pineapples. These four were chosen because they can be commercially grown in the coffee growing regions of Colombia, meet U.S. phytosanitary import requirements, and already have a presence in consumers' and produce managers' produce baskets. However, the survey also addressed other less familiar specialty products.

Results

This section presents many of the results obtained through the survey as well as other demand related material. To keep the paper within a manageable size, some of the results are not presented, but are available to interested individuals. The following subsections describe the more relevant outcomes from the survey.

Demand

Acon [1] and Lim [6] provide a qualitative analysis of tropical product demand, though it is limited to major products such as avocados, bananas, and papayas. Generally, they conclude that demand will continue to increase and Acon identifies particular variables influencing demand such as income and education, among others. However, estimating the demand for specialty products is not as easy as, say, bananas. One shortcoming is the lack of baseline information on domestic per capita consumption. In addition, many specialties are produced outside the United States (developing countries) and therefore accurate production statistics are not readily available. Data on domestic imports are also incomplete because, by definition, the products of interest are still considered minor by the USDA--therefore statistics are not published. However, some data on imports of selected specialties products are available and may serve to quantify the demand.

Table 2 presents U.S. imports of selected fresh specialty products during 1986 or 1988. Over one million metric tons (MT) of specialty products are currently imported and since most are considered "high value products," they represent significant import value. In addition,

Table 1
Summary of Responses

	Regions				Total	% of Population	% of Responses
	West	Midwest	South	Northeast			
No. of firms	146	28	156	113	443	100.0%	--
No. of Responses	71	12	50	34	167	37.7%	100.0%
No. of Useful Responses	42	8	40	19	109	(24.6)	65.3
No. of N/A Responses*	29	4	10	15	58	(13.1)	34.7
No. of Non-Responses	75	16	106	79	276	62.63	--

*N/A -- Responses not used in analysis because *too many* questions were not answered.

the USDA [15] just recently began publishing import data for eight "specialty" vegetables (dasheen, endive, snow peas, chili peppers, chayote, fiddlehead ferns, bamboo shoots, and jicama), but the data do not differentiate between fresh and processed products. Imports of the eight vegetables in 1987 were 100,000 MT and the average annual rate of import growth has been 18 percent since 1980.

Table 2
Imports of Selected
Fresh Specialty Products

Product	Volume of Imports 1,000 MT (1986)
asparagus	14.7 (1988)
artichoke, globe	0.04 (1985:0.64)
avocados	4.8
bananas	2,873.9 (1988)
cassava (yucca)	5.9
chayotes	6.6
cilantro (coriander)	6.6
dasheen (tannia)	20.5
ginger root	3.8
limes	57.0 (1988)
jicamas	10.2
kiwifruit	20.0 (1988)
mangos	34.6 (1988)
melons-muskmelon	136.7
melons-others	75.8
melons-watermelons	114.2
passion fruit	0.07
papayas	4.0
pineapples	101.5 (1988)
plantains	112.0
strawberries	6.8
tamarind beans	0.8
tree tomato	0.5
yams	11.2

SOURCE: USDA [11]

Since the emphasis of the paper is on artichoke, asparagus, lime, and pineapple imports, then how do imports of these four products compare to imports of other specialty products? For artichokes, import data are very limited because the market is so small. In fact, in Table 2 one can see that artichokes were the

least imported specialty product in 1986. Even though 1985 imports of artichokes were sixteen times larger than during 1986, they still represent a very small market. Most artichoke imports are from Chile and California is the only domestic commercial producer. Asparagus imports have increased approximately 27 percent per year since 1984. However, the change between 1987 and 1988 was only 1 percent. Lime imports have annually increased by 10 percent each year (average) since 1984 and 1000 percent since 1975. In contrast to asparagus imports, the change between 1987 and 1988 was 33 percent. Pineapple imports have increased at an annual rate of 24 percent since 1984, but only 1 percent between 1987 and 1988. The demand for importing asparagus, limes, and pineapple has been robust. The same may possibly be true of artichoke demand, but unavailability of data prevents any such conclusion.

Hawaii, Florida, and to a lesser extent, Texas and California have significant acreage planted with specialty products. All four states publish statistics for certain specialties in their annual agricultural statistics yearbook. The statistics will not be listed here, but Hawaii, for example, has decreased production of papayas, passion fruit, avocados, and pineapples. Conversely, Hawaiian banana production has increased nearly three-fold over the past five years. Campbell [2] provides a brief account of how tropical fruit production in Florida has grown. For example, in 1985 there were 300 acres of mamey sapote, 200 acres of lychee, and 150 of carambola. Popular press articles indicate that current acreage is even larger than in 1985.

The following subsections will only briefly discuss much of the material collected with the survey. The remaining subsections cover sources of supply, terms of trade, transportation, packaging, storage, shrinkage, product destination, and advertising/promotional information.

Survey Results

Within the market distribution system of specialty products, a key participant is the importer. Information on the economic behavior of specialty product importers is not readily available. The lack of market structure information is complicated by the fact that a number of Central and South American countries have established policies (with American support) to encourage the export of tropical fruits and vegetables into temperate climate

countries. One result of these policies has been the proliferation of a number of new importing firms. Clearly, it would be in the interest of producers, wholesalers, retailers, and consumers to have some information on the specialty products import industry. What are the sources of products? How many importers are there? What are their perceptions regarding product demand? How is the product imported? What does the future hold? Historically, the industry has not received much attention from researchers and thereby little baseline information is currently available.

Sources of product supply

The survey asked respondents to answer sourcing questions qualitatively rather than quantitatively. It was felt the response rate would increase if the questions were designed in this manner. Respondents were given three choices for qualitative answers: "regularly," "occasionally," or "never." The survey indicates that:

- Most domestically produced fresh products were grown in California followed by Florida.
- Arizona and Texas produced more product than did Hawaii.
- More than half the respondents did not buy products from Arizona, Hawaii, or Texas.
- The major sources of foreign supply were Mexico followed by Central America, Chile, and the Caribbean. However, the Caribbean is far behind the first three.

Products handled

The firms were asked to provide information regarding the products they handled in 1988 and/or planned to carry in 1989. In terms of the largest percentage of firms which handled the product in 1988, the most "carried" products are: asparagus--42 percent of the respondents; mango--33 percent; pineapple--33 percent; lime--27 percent; and avocado--18 percent. The figures indicate that a relatively small number of firms carry specialty products.

Also of interest is the market growth of particular products. To get a sense of market growth, firms were asked to indicate what products they were going to carry in 1989 that they *did not* carry in 1988. The following percentages are based on a sample of 109 respon-

dents. For example, if ten firms did not carry passion fruit in 1988 but planned to carry it in 1989, this implies a market growth of 9 percent. Based on this crude market growth proxy, the following are the products with the largest implied growth: avocado--8.3 percent; mangoes--6.4 percent; asparagus--5.5 percent; pineapple--3.7 percent; and lime, passion fruit and prickly pear--2.8 percent. These "annual growth rates" indicate moderate to weak market growth.

Since a number of the products of interest are "new" to importers, they were also asked, "... what products would you consider carrying if you were supplied with the proper information?" Answers to this question are interpreted to indicate potential or conditional demand. The following are the rankings in terms of the percent of total respondents wishing to handle the products:

mangoes	71%	prickly pear	33%
papaya	43%	cherimoya	51%
guava	36%	sweet passion fruit	37%
avocado	61%	banana passion fruit	26%
passion fruit	40%		

The differences between the above list and the prior ranking indicate that information on asparagus and pineapple would not likely increase their demand, but mango and avocado demand would likely increase with more information.

With regard to the four products that the survey focused on, artichoke, asparagus, lime, and pineapple, the respondents are nearly unanimous in indicating that demand will increase or stay the same for the four products. Except for artichoke (40%), more than half the firms indicated that the demand will increase for the remaining three products. No more than 5 percent of the respondents indicated that demand would decrease for the four products.

The survey also addressed the question of seasonality for the four products of interest. The fourth quarter of the year is the season of highest demand while the third quarter is characterized by more moderate demand. Lime and pineapple have the highest demand in the fourth quarter.

Trading Practices

Respondents were asked to qualitatively identify their payment terms for importing fresh products. Each delivery payment type--free-on-board (F.O.B.), cost, insurance, and freight (C.I.F.), Consignment, and Other--had an associated distribution of the qualitative

answers. The qualitative answers describing the frequency of their use were: most (greater than 66% of the transactions), some (34% to 66%), few (less than 34%), and none. In Figure 1 the results are presented. As may be expected, overlaps exist within the delivery categories, but no overlaps exist for the "most" frequency (only 86 firms identified one of the four payment types as the "most" used, but 109 firms are in the total sample). In descending order, 48 firms use consignment most of the time; 20 use F.O.B.; 12 use C.I.F.; and 6 use Other. Conversely, 23 firms have not used Other; 22 have not used C.I.F.; 17 have not used F.O.B.; and 10 have not used Consignment. Therefore, one can conclude that Consignment is the most used type of payment, followed by F.O.B. The Other category is the least used. The trading practice results can be expected because handling specialty products is relatively new for the importers and many are adverse to taking price risks for handling them.

Transportation

Two-thirds of the products imported were in refrigerated containers. Of these imports, truck, ship and air containers were nearly evenly distributed--one-third each. Of *all* imports, 44 percent are imported by air, 31 percent by truck, and 23 percent by ship. The truck imports are primarily from Mexico, but a number of importers indicated truck imports even though the products most likely entered the country at Florida ports. This is possible because if an importer is located at an inland city he/she receives the shipment at the inland facility by truck. Generally, the importers were satisfied with the transport of product except for refrigerated truck. This is most likely due to the fact that trucks make a number of stops before the full load is unloaded. As a consequence of opening and closing the container the product deteriorates.

Packaging

Each respondent was asked to provide the percent of total commodity imports which were imported in cartons, plastic bags, cellophane trays, individual wrap, bulk bins, wooden crates, or "other." The following percents are the mean of the responses for each commodity. Eighteen firms imported artichokes and 75 percent of the imports were in cartons while the rest were in wooden crates. Fifty firms imported asparagus and the majority (60%) were imported in wooden crates and the rest in cartons. Thirty-one firms imported limes and nearly 100 percent were imported in cartons.

Of the 39 importers of pineapples, 80 percent of the imports were in cartons, 8 percent in bulk bins, and 6 percent were in wooden crates. Except for asparagus imports, cartons dominate the types of packaging used for importing these specialty products. No imports were reported in cellophane trays, plastic bags, nor individual wraps.

Causes of Shrinkage

For artichokes, the greatest cause of shrinkage was "loading and unloading" (34%) followed by "other" (28%), and "en route damages" (21%). For asparagus, the causes were: "delayed arrivals" (34%) and then rather evenly distributed among the other four categories. For limes, 31 percent of shrinkage was due to "other," 28 percent to "delayed arrivals" and 20 percent to "regulatory controls." For pineapples the causes were: "delayed arrivals" (27%); "en route damage" (20%); and evenly distributed among the other three categories. It is difficult to determine what the respondents meant by the "other" category--particularly for limes and artichokes. One can speculate that improper packaging or sub-grade product could be the main causes.

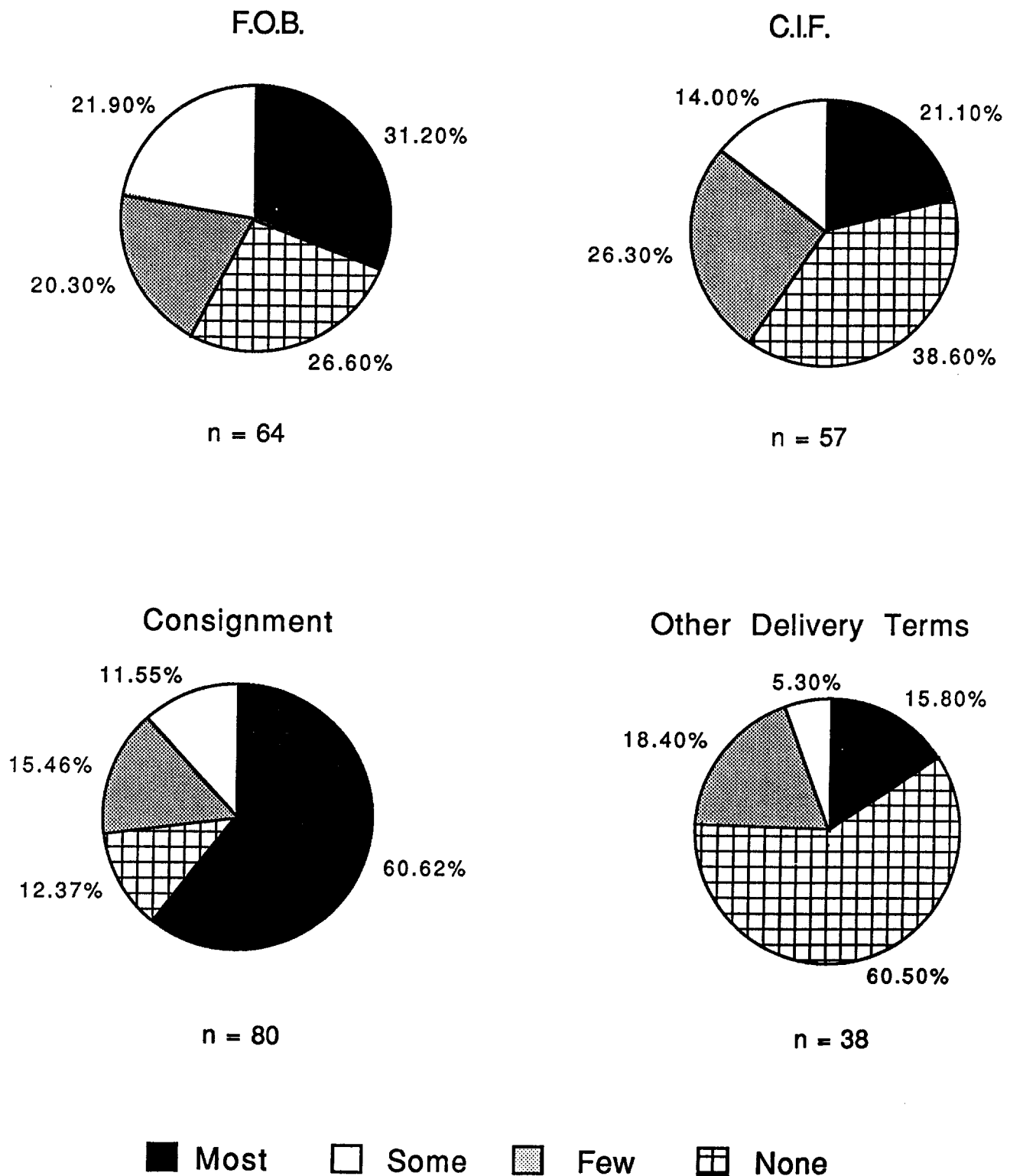
Storing of Product at Importer's Facility

On average, importers' storage facilities are 273,000 cubic feet with a range of 1,600 to 3.6 million cubic feet. The average storage capacity translates to ninety-six 48-foot refrigerated trailer loads (each 48-foot trailer has a usable load capacity of 2,825 cubic feet). The mean storage space appears to be quite large, but the few large storage facilities skew the mean considerably. The average length of time that products are held at the importer's facility are: artichokes for 2.9 days, asparagus for 2.7, lime for 4.2, and pineapple for 4.1 days. As one would expect, the more perishable products like asparagus and artichokes are held fewer days.

Customer of Importers

For the four products of interest, approximately 50 percent of importer sales were to other wholesalers. Nearly 43 percent of pineapple sales were directly to supermarkets, asparagus 33 percent, lime 30 percent, and artichokes 24 percent. Sales are based on volume. Commission merchants are not large customers except for asparagus--nearly 12 percent of asparagus sales were to commission merchants. One might expect this result because commission merchants sell relatively more product to foodservice and/or restaurants. Prices received

Figure 1.....Inport Delivery Terms: Frequency of Use



from wholesalers for artichokes were significantly higher than prices received from supermarkets and they were the only product for which a price differential was detected between supermarket and wholesaler sales.

Information Needs

Phytosanitary regulations covering specialty products were needed by 96 percent of the respondents. In addition, ripeness indicators were requested by 93 percent, transportation requirements by 91 percent, supply season by 89 percent, nutritive value by 87 percent, taste, flavor, aroma, and historical descriptions by 80 percent, and culinary uses by 73 percent. Exporting firms and/or governments might well benefit by providing importers with the above information.

Marketing Parameters

In general, the most important marketing tool identified by the importers was to *increase the quality of the product*. It was ranked as more important than advertising and promotion, packaging, extended shelf life, price cutting, and mixed load sourcing. Also, importers' knowledge of product attributes is generally satisfactory except for the product's nutritive value and shrinkage and waste control.

Finally, the results need to be interpreted with the perspective that the four products of interest only represent 5 percent of the total business of the importing firms. In fact, artichokes represent less than 1 percent of the total business while limes represent 10 percent. Also, it can be argued that the sample--26 percent--is too small a sample from which to draw conclusions. However, when collecting primary data with a mail questionnaire, a response rate of 40 percent is considered excellent. This coupled with the tendency of the produce industry to be rather private about its business affairs, makes the 26 percent response rate more acceptable. With this caveat, the last section concludes with a discussion and possible implications to the industry.

Discussion and Implications

The opportunities for exporters of specialty products to the U.S. market appear to be good and most likely will continue to be so. Importers' perceptions of the demand for specialty products are that it will increase or remain at current levels. Most believe it will increase. With regard to artichokes, asparagus, limes, and pineapples, demand is high to mod-

erate. The most important factor for increasing product demand is to increase the quality of the product. Information about phytosanitary import regulations, the nutritive value of products, and how to control waste and shrinkage are needed by importers.

Retailers also need information at the point of sale as well as improved product quality. Price does not appear to be a factor. The distribution of products should be better coordinated to minimize shrink--particularly with regard to delay arrivals. Though some delayed arrivals may be caused by inspection procedures, other causes of delays can be minimized.

Further research should address a broader mix of specialty products such as passion fruit, cherimoya, tamarillo, granadilla, chayote, and sapote. These appear to be products of increasing interest and the import regulations may be more favorable--particularly in Canada. Also, a better sense of importer needs regarding terms of trade, advertising and promotional materials, and packaging should be identified.

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