Nadler has shown ([3], (16.35), p. 558) an example of a continuum $X$ having the property of Kelley and such that $X \times X$ fails to have the property. Next he asks some questions on connections between the property of Kelley for $X$ and for the hyperspaces $C(X)$ and $2^X$ ([3], (16.37), p. 558). Two of them are: If $X$ has the property of Kelley, then does $2^X$ have it, too? If $C(X)$ has the property of Kelley, then does $2^X$ have it, too? The example mentioned above is such that $X$ has the property of Kelley, $C(X)$ has it, but $2^X$ does not have the property. The present paper recalls the construction of the example and shows ideas of proofs of these facts. The complete proofs are presented in [1].

The statements that the property of Kelley for the hyperspaces $2^X$ or $C(X)$ implies the property for $X$ are shown in [5], (2.8), p. 294 (it is shown for $2^X$ only, but the proof is also applicable for $C(X)$).

Thus two questions only are open in this area: 1° Is it true that if $X$ has the property of Kelley, then $C(X)$ has also this property? 2° Is it true that if $2^X$ has the property of Kelley, then $C(X)$ has it? Note that an affirmative answer to 1° implies the same for 2°. One can ask some other questions, that also concern the property of Kelley for hyperspaces, but which are related to Whitney properties. Three of them are: Is the property of Kelley a Whitney property? Is it a (strong) Whitney reversible property? The present paper contains a partial answer to the first question only. Namely it is shown that the property of Kelley is a Whitney property for continua having covering property hereditarily.

All spaces considered in this paper are assumed to be metric continua. For a given space $X$ with a metric $d$ let $2^X$ and $C(X)$ be the hyperspaces of all compact subsets and of all subcontinua of $X$ respectively with the Hausdorff distance $\text{dist}$ defined by

$$\text{dist}(A,B) = \inf \{\epsilon > 0 : A \subseteq N(B,\epsilon) \text{ and } B \subseteq N(A,\epsilon)\},$$
where $N(A,\varepsilon)$ is the union of the $\varepsilon$-balls about the points of $A$. We shall also be considering the hyperspace $\mathcal{C}^2(X) = C(C(X))$ with the Hausdorff distance denoted $Dist$.

We say that a continuum $X$ has the property of Kelley if it satisfies the condition: given $\varepsilon>0$, there exists $\delta>0$ such that if $a, b \in X$ with $d(a,b)<\delta$ and $a \in A \in C(X)$, then there is a continuum $B$ with $b \in B$ such that $dist(A,B)<\varepsilon$.

A continuous mapping $\mu: C(X) \to [0,\infty)$ is called a Whitney map if $\mu(\{x\}) = 0$ for $x \in X$ and $\mu(A) < \mu(B)$ for $A \subsetneq B$. A topological property $P$ is called a Whitney property ([3], p. 399) if for each continuum $X$ and each Whitney map $\mu$ the implication $X \in P \Rightarrow \mu^{-1}(t) \in P$ holds for each $t \in [0, \mu(X)]$. A topological property $P$ is called a (strong) Whitney reversible property ([3], (14.45), p. 453) provided that whenever $X$ is a continuum such that $\mu^{-1}(t)$ has property $P$ for (some Whitney map $\mu$ all Whitney maps $\mu$ of $C(X)$ and all $0 < t < \mu(X)$), then $X$ has property $P$.

A continuum $X$ is said to have the covering property ([3], (14.14), p. 417) if, for each Whitney map $\mu$, no proper subcontinuum of $\mu^{-1}(t)$ for any $t \in [0, \mu(X)]$ covers $X$. If each subcontinuum of $X$ has the covering property, then we say that $X$ has the covering property hereditarily ([3], p. 486). The statement that a continuum $X$ has the covering property hereditarily is equivalent to the fact that for all $\mathcal{A} \in C(\mu^{-1}(t))$, with $t \in [0, \mu(X)]$, we have $\mathcal{A} = C(U) \cap \mu^{-1}(t) = \{K \in C(X) : K \subset U, \mu(K) = t\}$ (see [4], p. 159).

The reader is referred to [2] for definitions of terms not given here.

Let $R$ denote the real line $(-\infty,\infty)$ and let $H$ be the half line $[1,\infty)$. We show the following.

EXAMPLE. There exists a continuum $X$ having the property of Kelley and such that the hyperspace $C(X)$ has, while $2^X$ does not have this property.

Define the mappings $g$ and $f$ from $H$ into $R^2$ by $g(t) = (1 - 1/t) \exp(-it)$ and $f(t) = (1 + 1/t) \exp(it)$, and let $L = g(H)$ and $M = f(H)$. Denote by $S$ the usual unit circle in $R^2$. The space $X = L \cup S \cup M$ is a continuum in $R^2$. It can be observed that $X$ has the property of Kelley. Using the fact that the hyperspaces $C(L \cup S)$ and $C(M \cup S)$ are homeomorphic to cones over these continua, one can prove that the hyperspace $C(X)$ has the property of Kelley.

Now assume $2^X$ has the property of Kelley and take $0<\varepsilon<1/2$. By assumption there exists a number $\delta$ with $0<\delta<\varepsilon$ satisfying the definition